vision

Looking at the future of learning

winter/spring 2008 **FREE**

Can every child matter?

We explore some perspectives on closing the educational gap

Standard approach

What - or who - is assessment really for?

Divided we fall

Two projects working to address the digital divide

Role reversal

Can students be effective teachers for their peers?

Sustaining change

Integrating sustainability into education

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:

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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.**

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Welcome to vision

"We are now at a point where we need to teach what no one knew yesterday, and prepare our students for what no one yet knows."

How can the UK education system best prepare itself for this future? How can we move from what is effectively a 19th century model of education to a system that is 'fit for purpose' for a very challenging 21st century? What are the mechanisms for stimulating this change?

This edition of VISION highlights the critical role of grass-roots innovation in the process of educational transformation. From the development of sustainable schools through to curriculum innovation, we see examples of educators, technologists and learners working together as joint stakeholders in the design of whole new learning environments - environments which respect the complexity of teaching and learning; which exploit the diverse resources that are now on offer; and which involve the co-creation of new educational goals.

These case studies highlight some of the ways in which change can happen from the inside out. They reflect the growing evidence that the most effective approaches are those that empower rather than impose, that involve people in finding their own ways to address a situation, and that offer fresh routes to participation. This is in step with the emerging culture of collaboration, facilitated by new technologies, that we are witnessing outside formal education, from the self-organising Facebook communities to the iterative, collective approach of Wikipedia.

Tim Brighouse, former London Commissioner for Schools, refers to the butterfly effect in which a small intervention can have a huge impact. We need to find ways to link up these powerful local actions and create a distributed network of educational change agents. It is only through this collaborative approach that we will achieve the 'tipping point' in education, set out by David Hopkins and discussed in our 'Can every child matter?' article, where change transforms itself from a limited local interest to a mass phenomenon. It is only by creating this scale of change that we can begin to narrow the gap in educational attainment and ultimately ensure that every child does matter.

Annika Small
Chief Executive
Futurelab

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The student becomes the master

Instinctively, it seems obvious that one of the best ways of consolidating your learning of a topic is by trying to teach it to somebody else. We see children acting as teachers every day, whether helping each other in class or with homework, teaching each other new skateboard tricks or game strategies, or even coming to the rescue of an ICT-shy teacher struggling with an interactive whiteboard.

We know that children can teach – but can the skills and specialist knowledge of this latent educational workforce be usefully harnessed, and put to work in schools?

Just by putting this idea into words, you can almost feel the hackles of the traditional pedagogue rising. Yet plenty of teachers have been working towards this end, long before the idea of teachers and students as 'partners in learning' became enshrined in the personalisation agenda.

One such is Dan Buckley, the former deputy principal of Eggbuckland Community College in Plymouth, and now a consultant at Cambridge Education.

As an ICT teacher in the mid-1990s, Buckley recognised that his pupils were well ahead of him in their instinctive understanding of digital technology. He was inspired by the way children became "skilled in the art of managing ICT immigrant adults".

This led him to develop an online, learner-centric curriculum for his college. Pupils were trained to teach the skills they gained, and were required to pass on these skills to their peers.

While pupils could determine the content of their work, they were also presenting evidence of learning, of progressing up a 'skills ladder' – and evidence of teaching those skills to peers lower down the ladder.

Such a venture could only work, he says, when the school is deeply committed: "It's true in all cases - if something is taught by one student to another, it has to be given the same validity as if it had been taught by a teacher."

"If you stick to it, if you say, this is serious, it will work, and the results will amaze you."

For a demonstration of the results of student involvement, go to the website of Thomas Hardye School, in Dorchester, Dorset (www.thomas-hardye.dorset.sch.uk), click on 'welcome' and be blown away by the energy of the student-made video intro to the life of the school. This school has sparked its very own revolution in collaborative learning, using digital video equipment to release and channel some of the untapped creativity of its students.

The seeds of this revolution were sown in 2005 when D&T teacher Mark Richardson (now the school's Assessment for Learning Director) secured NESTA funding to train students in basic film-making techniques. He challenged students to make short videos to teach an aspect of their current work.

Now we find teachers want to make films for their students – and they're getting students to help them, there's a symbiotic relationship here."

Practical constraints of this approach, Richardson says, were chiefly the "confidence of staff" and the shortcomings of the technology. He added, though, that not all videos required sophisticated equipment – some pupils had been making short stop-animation films using puppets, which were used to provoke debate in RE & Ethics.

Other teachers in the school quickly come round to the idea, he said, with around half the staff taking part in a video training session earlier this year. "We asked them to make a short film exploring their own subject, using nothing more than a school chair," Richardson says.

The approach used at Bealings Primary School in Suffolk seems very different. Here, large parts of the curriculum are taught entirely through role-play, using the 'Mantle of the Expert' technique developed by visionary drama teacher, Dorothy Heathcote.

Peter Roe - Films for Learning

Peter Roe - Films for Learning

We know that children can teach – but can their skills be put to work in schools?

"The young have a natural aptitude for software, but we've found they do need some upskilling, for example telling them when they really should be using a tripod."

The results can be found on their Films for Learning website (www.filmsforlearning.org), which is blossoming into a national and even international community of young educational film-makers. "Our films have been used by teachers all over the country," he says. "One, which explains the Doppler effect, has been used by a medical school in Amsterdam.

"One of the best things about this approach is that it naturally requires collaboration. You have to have a team, and people can take on roles and learn the skills of the sound person, continuity, scriptwriting and so on.

"Originally, we were getting students to make films that could be used by teachers.

In this approach, children are given specific roles in fictional organisations that mirror the adult world. It could be a wildlife sanctuary, an oil rig, or any other real-life environment. Each child assumes the expertise that goes with their role.

Challenges are set by teachers, who intervene as customers or clients, with the children having to decide how to handle them. They research, calculate costs, hold meetings, make decisions, draw up plans and write reports. In doing so they learn, and also share their learning.

"All the projects we're running have been extremely carefully planned," says Headteacher Duncan Bathgate. The scenarios are designed so that children naturally encounter and acquire the skills and concepts of the primary curriculum.

The Bealings pupils also take an active role in the running of the school. In whole-school meetings, their votes count as much as an adult's. "This is not some fake school council secretly steered by the staff," Bathgate says. "There have been things we wouldn't have voted for – for example they voted to call us all by our first names, which one or two of us were perhaps not entirely comfortable with!"

The idea that children can, individually or collectively, determine the content of their education and the environment in which it occurs, is understandably frightening for many teachers. All the teachers emphasise the need for very strong and sensitive staff management.

This is the case at Priory Community College in Weston-super-Mare, North Somerset – a school that has gone further than most in ensuring the 'student voice' is heard in a very real way.

Students led the design of the school's virtual learning environment (VLE): "They showed us how to use social networking sites, and helped us develop the front-end of the VLE," says the school's E-learning


London Borough of Richmond


London Borough of Richmond


London Borough of Richmond

Director, Andrew Atkinson. "That's the reason it has taken off so well."

Pupils are using the VLE forum to discuss school work, across all subjects: "It's real 24/7 learning," he says. The VLE was the basis for an English 'future learning' project last term, in which, with full parental consent, small groups were left to work independently for six weeks, with no adult direction whatsoever. The students made videos with their phones, and the work they presented at the end of the trial was, according to Atkinson, better than anything they'd produced in class.

Last year, a group of 12 Year 7 pupils were trained as 'student researchers' to go into lessons and report on the teaching and learning they witnessed. In other words, they were student observers – though Principal Neville Coles preferred not to use the word 'observer' because of its Ofsted-like associations. "Staff had to volunteer to have the researchers in their lessons," he added – interestingly, it was not always the most secure and confident teachers who opted in.

The researchers then worked in pairs to report their findings, and all the feedback was assembled onto a DVD and presented to the staff. "Surprisingly, many teachers seemed more comfortable receiving feedback from students than they would from adult observers," he adds. "And now, more and more staff want the researchers in their classes."

Meanwhile the original Year 7 researchers have taught their skills to a new group of Year 7s, so the process is becoming an established part of the school's life.

At Grey Court School in Richmond, Surrey, pupils were involved in the design of a real learning environment. This was the 'Ingenium' - a learning space built with Classroom of the Future funding, now in its third year.

After the initial excitement, the room has gradually become integrated into the life of the school. Deputy Head Marie Smith says, "It's the space itself, rather than the technology in it, that in the longer term seems to be making the big difference."

That said, the laptops, the digital video equipment, ambient sound system, and bluescreen technology all get regular use. As often as not, "it's the students themselves that are taking charge, learning from each other, by a process almost of osmosis."

She realises there'll come a time when this once-futuristic equipment will become obsolete and have to be replaced. But who will pay? At the moment these initiatives rely on isolated pockets of funding and on inspired – and inspirational - teachers. If we are truly to leverage the massive potential of students teaching each other, a more unified approach may be required.

Edge Learner Forum

We've seen students teaching students, and even students teaching teachers about technology. But how about students teaching trainee teachers how to teach?

This is precisely what young members of the Edge Learner Forum were doing when they spent a day at London's Institute of Education earlier this year.

ELF member Samia Meah takes up the story: "A group of us went to the Institute of Education for their big teacher training day. Each was us was allocated a table, and the trainees moved around, going from one to the next.

"I told them that, when I was in Year 10/11, I wanted to learn, we all wanted to learn but we didn't all get the attention.

"I gave them examples, said how they should try to develop relationships with all their students, and reach out to us at the back of the class a bit more, reach out to the ones who might be a bit disruptive or get labelled as bad.

"So now it was us teaching teachers! Yes, it does make sense, and at the end they said they loved the feedback we gave them. They wanted more of us!"

Now, Meah, along with other ELF members is organising a 'teenage Ofsted'.

"We developed a strategy and took it back to the school, we discussed it with the school leaders, we spoke with a lot of passion and they listened."

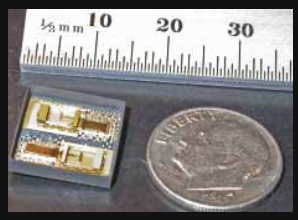
The first student school inspection should take place in Camden later this term. Five ELF members will go into the school, recruit and train ten students, and set about blending in, observing, and doing on-the-spot interviews to get a true student perspective of what's going on in the school.

"We hope to have a safe area or diary room where any teacher or pupil can go in to talk," Meah says. "But one of our chief points is not to stress the teachers!"

At the end they'll write a report – but she adds it would be up to the school whether or not it was published.

Technology update

Super-fast data transport



IBM

IBM and MediaTek Inc are developing ultra-fast chipsets that are capable of wirelessly transmitting a full-length high definition movie to and from a home PC, handheld device or television set nearly as fast as a viewer can push their remote control. Millimeter wave (mmWave) radio technology is the highest frequency portion of the radio spectrum. The large bandwidth available enables at least 100 times higher data rates than current Wi-Fi standards. For example, you could upload a 10 gigabyte file in five seconds, rather than ten minutes using current Wi-Fi technology.

www-03.ibm.com/press/us/en/pressrelease/22480.wss

Draw on air


Daniel Keefe, Brown University

Brown University computer scientists have developed Drawing on Air, a system that allows artists to draw 3D objects in the air while wearing a virtual reality mask. Drawing on Air uses drawing guidelines, force feedback, and a two-handed interaction system to help artists draw 3D curves and objects more precisely, transferring the image to a computer for 3D modelling, design, and illustration programs. Drawing on Air artists hold a stylus in one hand to draw and a tracker connected to the virtual reality system in the other.

www.cs.brown.edu/~dfk/dfk_iweb/Publications.html

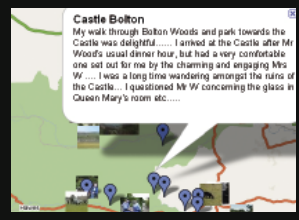
Odor-Reader detects super-bugs in patients


UWE

A pioneering new device has been developed that could help over four billion adults and children in the developing world and reduce outbreaks of diseases such as clostridium difficile (C Diff) in UK hospital wards. Researchers at Bristol University and University of the West of England have developed Odor-Reader, a device able to rapidly diagnose gastrointestinal disease by 'reading' the odour of biological fluids including stool and urine. Delays in diagnosing gastrointestinal diseases can lead to patients being ill for longer, higher mortality rates and increased spread of infection.

info.uwe.ac.uk/news/uwenews/article.asp?item=1088

Marking the map



Google/Tele Atlas 2007

New tools like Google Maps are fundamentally changing the ways people relate to their environment, annotating digital maps with text, images, sound and videos. Such open participation is reshaping the world of mapmaking as people create maps that revolve around their interests, creating richer, more diverse, personal and messier maps than previously possible. It enables the creation of collaborative projects that represent the knowledge of numerous contributors, which is becoming an increasingly important aspect of how information is organised and found on the internet.

maps.google.co.uk

'Pulp-based computing' makes normal paper smart


Marcelo Coelho

Pulp-based computing is a series of explorations that combine smart materials, papermaking and printing. By integrating electrically active inks and fibres during the papermaking process, it is possible to create sensors and actuators that behave, look and feel like paper. These composite materials not only leverage the physical and tactile qualities of paper, but can also convey digital information, spawning new and unexpected application domains in ubiquitous and pervasive computing at extremely affordable costs. Research supported by MIT Media Lab and XS Labs.

ambient.media.mit.edu/projects.php

Internet umbrella


Pileus LLC / Keio University

Pileus is an umbrella connected to the internet that makes walking in the rain fun. It has a screen, camera, motion sensor, GPS, and a digital compass. A user can take a photo with the camera and wirelessly upload it to Flickr, and watch photo and video-streams downloaded from Flickr and YouTube. Referencing Google Earth and location data from GPS and a digital compass, it can display a 3D bird's-eye view around the user. Users can walk through a city comparing the 3D views and real sights. The large screen creates a virtual, but not immersive, reality.

www.pileus.net

Learning to learn

What is assessment for? And how might we reconcile the competing demands upon assessment in the future?

Views on assessment are at the heart of divisions in education, with assessment for learning versus assessment of learning one of the main issues. Politicians need assessment to give some substance to their arguments about funding. Universities need data for selection purposes. Schools need assessment to validate what they are doing. Society needs assessment in order to be reassured that values are being transmitted. Employers need assessment to ensure that young people will have the skills necessary to work productively in business. Above all, students need assessment in order to see where they are going on their learning journey.

A way to reconcile these seemingly conflicting demands is urgently required.

For most people the assessment debate is rehearsed each August when the GCSE and A-level results are published. Newspaper commentators have a touching faith in the accuracy of the assessments. Standards, it is always observed, are not what they were! This year's Education Briefing Book from the Institute of Directors looked at assessment in business terms and noted that in "the 1997-98 to 2005-06 period education spending rose by 49% in real terms, whilst the GCSE pass rate increased by 12.9 percentage points – a threefold increase in expenditure growth produced almost no acceleration in performance". They also note that 49% of IoD members thought the quality of education had got worse. This widely held belief that standards are deteriorating, and that we need to hold on to GCSE and A-level, makes the acceptance of radical assessment change difficult.

Public confidence in the GCSE and A-level system is so important to the government that in September 2007 Education Secretary Ed Balls split the functions of the Qualifications and Curriculum Authority, which currently sets the National

Curriculum, sets tests and regulates exams. The exam system in England is now to be put in the hands of an independent watchdog to counter the annual criticism that GCSEs and A-levels are getting easier. However, this continues to focus the QCA's efforts on centralised methods of assessment, rather than ones which are more learner-based.

The educational community has its own criticisms of assessment. Tony Wheeler, Senior Research Fellow at TERU (Technology Education Research Unit), Goldsmiths, London University, argues: "We have not clarified why we are doing the assessment and we are not honest about why we are doing the assessment; we are provided with a set mechanism and a method that does not guarantee reliability or validity... The purpose of assessment has become an accounting and auditing mechanism to keep schools and teachers in check. We are not testing the students any more; we are testing the schools and the management system in order that politicians can protect themselves... It is about schools, finance, management and politics."

A Demos document, 'Beyond Measure: Why educational assessment is failing the test', although written in 2003, outlines some of the assessment issues lucidly and thoroughly. Demos associate Paul Skidmore wrote: "By improving and certifying ability to learn as well as knowledge and understanding, it would allow the assessment and qualifications system to be reshaped to serve the key strategic function of school-age education in the twenty-first century."

The submissions to the Parliamentary Education and Skills Select Committee's enquiry into testing and assessment illustrate how diverse the views on 21st century learning and assessment are. Schools rail against the constriction. Some exam boards speak for the status quo. Professors Black and Wiliam, at the forefront of assessment reform, state: "Our current educational assessments are not just ineffective - they are preventing us from providing high quality education for school students, and preventing schools from producing young people with the flexible skills that will be needed in the 21st century. This is because our assessments started from the idea that the primary purpose of educational assessment is selecting and certifying the achievement of individuals (ie summative assessment) - and have tried to make assessments originally designed for this purpose also provide information with which educational institutions can be made accountable (evaluative assessment). Educational assessment has thus become divorced from learning, and the huge contribution that assessment can make to learning (ie formative assessment) has been largely lost."

Questioning the whole basis of conventional assessment, Professor Stephen Heppell points out that it will always be easy to fake assessment products. "Look at www.instant-degrees.net or even www.wageslips4u.co.uk for example. The 'bit of paper' approach is dead in the water. What employers want to see is a track record of work, properly narrated and evidenced - with comments from peers and parents and teachers. You can't - won't even - be able to fake that. So in the end these portfolio approaches will trump exams anyway. On eBay, no one cares if you have an MBA. They just judge you by your track record."

While the academic and political debate on assessment rages on, many schools and universities are already exploring new approaches to assessment – both in terms of curriculum innovation and by exploring the role technology can play in tackling these issues.

RSA's Opening Minds has a strong influence on assessment at Grange Primary School in Nottingham. Headteacher Richard Gerver aligned his work with Opening Minds because it suited the way the school was already working. "Education is about more than just academic learning and exams. It's about life and learning skills. Everything we have designed focuses on equipping them as fully as possible for the 21st century. We are not interested in SATS or academic performance as the ultimate aim of what we do. The main question is: what kind of people do we want our children to be when they leave us? Of course that encapsulates academic performance and skills."

Tash Lee

Every Friday skills are taught under the heading of the Grangeton Project. A number of courses are offered: journalism, street dance, rock dance, health and fitness, beauty therapy, chess, basic computer skills, money management and German, among others.

Each course leader devises five skills related to their planned workshop, and assesses the children against those five key skills. In hairdressing it could be anything from how to comb hair properly to creating a complex plait, or doing a shampoo and blow dry.

Observation, judgement of performance and feedback is done as the children are working. At the end of each six-week block each child receives a certificate of participation detailing which of the skills they have achieved. This is entered into their career entry profiles. "By the time they reach Year 6 there is a huge catalogue of the skills they have achieved."

"We are not testing the students any more; we are testing the schools and the management system in order that politicians can protect themselves"

TERU, Goldsmiths, University of London

TERU, Goldsmiths, University of London

Technology may have an important role to play in developing different approaches to assessment. Project e-scape at Goldsmith's College offers one way forward for GCSE-type assessments. Richard Kimbell has developed ways of assessing GCSE design and technology with short classroom tasks which assess students' ability to create, prototype, evaluate and communicate a solution to a design challenge. Students work individually and in groups to create a design. Each student has a handheld PDA which enables them to create videos, stills, written documents, sketches and audio recordings, and all this material is merged into a portfolio which is eventually loaded onto a website to be assessed. By comparing students' work to their peers', judges are able to use rankings rather than arbitrary standards, as well as judging students on their skills and ability to learn, rather than just knowledge. This project has been so successful that it has been taken up by exam board Edexcel.

Martin Ripley, a leading authority on e-assessment, is concerned that technology used in assessment should be simple. He particularly admires Wireless Generation, a North American company which provides wireless assessment services to schools. "They... take the sting out of the administration. The assessment is done on a PDA by the teacher, they have condensed the assessment down into one minute per week per child. When the teacher docks the PDA it immediately gives the teacher feedback on the child's trajectory. It can start to say very clever things because it is referencing a massive database. It is assessment that is smart, simple and with rich results." Assessment this straightforward does stand a chance of becoming embedded in the work of teachers, learners and schools.

Skidmore in 2003 argued for teacher assessments on a practical level. "It would enable assessment for summative purposes to be both more valid and more reliable. By re-emphasising the robustness of assessments carried out in classrooms and schools, it would reduce the logistical complexity of the assessment system and its dependence on an over-stretched, centralised external marking process, while simultaneously increasing its transparency."

What all these initiatives have in common is a growing realisation that the conventional methods of assessment are inadequate if we are to encourage the development of a range of different skills and competencies amongst students, rather than just the acquisition of subject content knowledge. Gareth Mills, Head of Futures and Innovations at QCA is exploring how different approaches to curriculum and assessment might be developed and supported at a national level by QCA:

"QCA has been looking at ways that we can make our curriculum fit for the 21st century. A key thing is that we must increase our focus on skills and competencies. There is unanimity on that from employers and headteachers. We want to create self-managers, students being independent, creative, innovative, enterprising, reflecting on learning, learning to learn. The curriculum is under three main headings: what are we trying to achieve; how do we organise learning; how well are we achieving the aims? We don't start from the subjects; we start from our aims of creating successful learners, confident individuals and responsible citizens."

This is a new era at QCA with few certainties, but what we can be certain about is that "curriculum development is the core business of a school," asserts Mills. Rethinking assessment and getting beyond the current debates will be an essential part of that.

QCA Review

Recent years have seen the emergence (and reinvigoration) of a wide range of initiatives to develop childrens' skills and competencies. The challenge facing policy makers is to find ways of valuing and supporting such initiatives in ways which enable children, parents, teachers, policy makers and others to develop a shared language for talking about and developing '21st century skills'. Futurelab's report, 'Developing and Accrediting Personal Skills and Competencies', was commissioned as part of a wider QCA programme of work to address this challenge. Its purpose was to explore the commonalities between these projects and explore how these might be developed and supported at a national level by QCA.

www.futurelab.org.uk/projects/qca/research

Links

Demos: **www.demos.co.uk/publications/beyondmeasure**

IoD: **press.iod.com/newsdetails**

Project e-scape: **www.goldsmiths.ac.uk/teru/projectinfo.php?projectName=projectescape**

Wireless Generation: **www.wirelessgeneration.com**

Child Power: Keys to the new learning of the digital century. Seymour Papert: **www.papert.org/articles/Childpower.html**

The Education and Skills Select Committee inquiry into testing and assessment: **www.publications.parliament.uk/pa/cm200607/cmselect/cmeduski/memo/test&ass/contents.htm**

Grange Primary School: **www.grange.derbyshire.sch.uk/grangeton1b.htm**

National Curriculum: **curriculum.qca.org.uk**

Futurelab's Personal Skills and Competencies Review for QCA: **www.futurelab.org.uk/projects/qca**

Can every child matter? (and if so, how?)

In October 2007 Ofsted (the body responsible for measuring the quality of education provision in England) published its Annual Report. This is intended as a summary of the 'state of the nation'. The report focused on three interrelated issues: improving the life chances of all children and narrowing the gap between them; the question of what it means to grow up in the 21st century; and preparing young people for the world of work.

The report generated a lot of media coverage, much of which focused on the report's identification of the gap in opportunities and outcomes that persists in the education system. HM Chief Inspector, Christine Gilbert, summarised this gap:

"The relationship between poverty and outcomes for young people is stark; the poor performance of many children and young people living in the most disadvantaged areas is seen in the Foundation Stage Early Learning Goals, in National Curriculum test results, and in GCSE results. Participation in higher education continues to have much to do with socio-economic background."

In an article in the Guardian newspaper, Lord Andrew Adonis, the Schools Minister, was quoted as saying that:

"We will not be satisfied until we have closed the gap between the poorer and the more affluent, and until every child and young person has the opportunities they deserve to prosper and succeed."

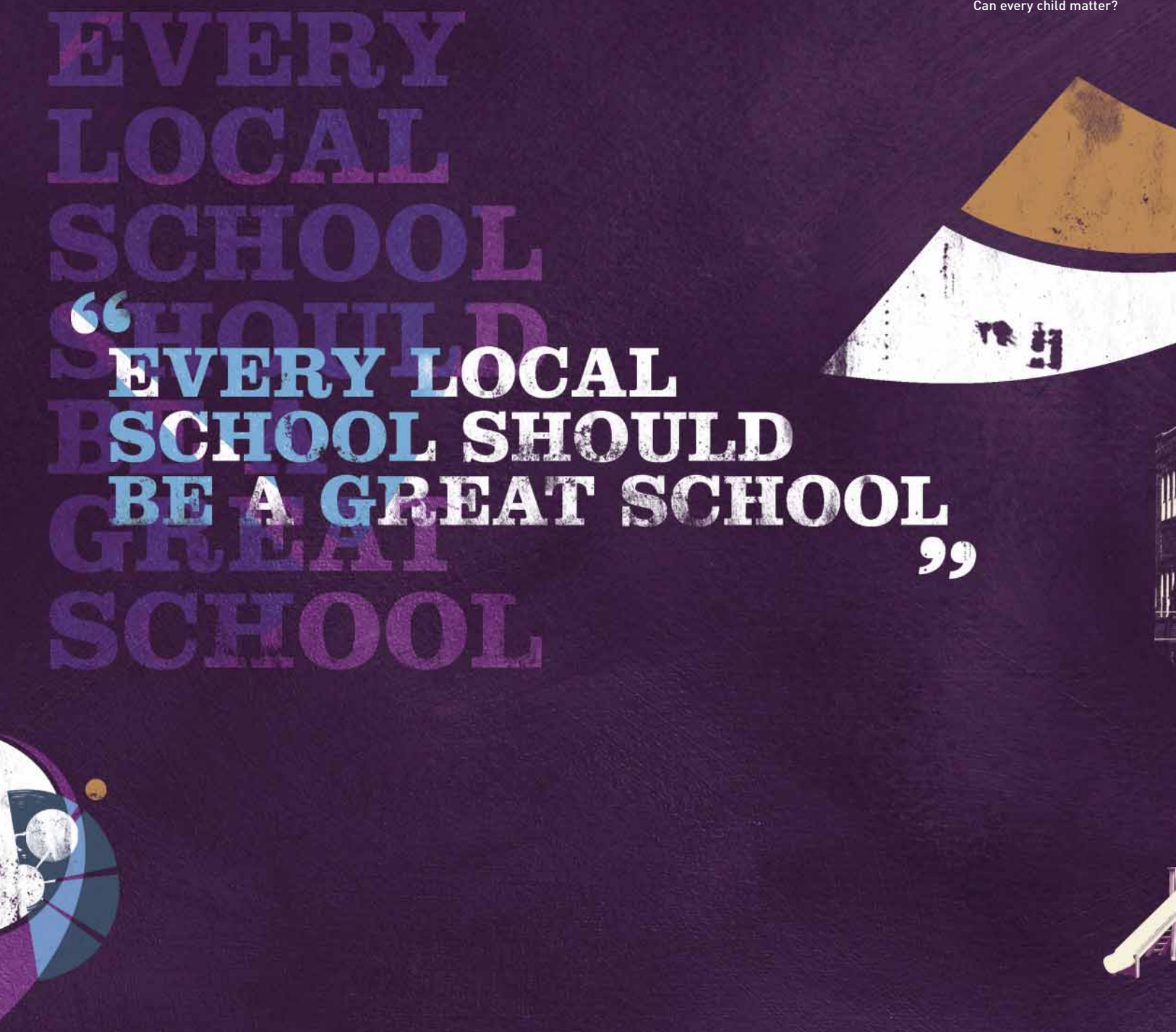
The desire to ensure that 'Every Child Matters' is laudable, not least because educational success provides individuals with the social and cultural 'capital' to succeed later in life. However, in the light of the inequalities highlighted by Ofsted, it is legitimate for a magazine such as VISION to explore different perspectives on how this educational gap might be closed.

Every school a great school

Since the 1990s governments have drawn upon the insights of school effectiveness research which purported to show that there were significant differences in the performance of schools with similar intakes. This supported the message that 'poverty is no excuse' for school failure. Researchers discovered some differences between school performance even after social factors were taken into account. This was the 'school effect', or the way in which what schools could do could make a difference. Whilst school effectiveness research was concerned with statistical evidence about 'what works', it subsequently morphed into research on school improvement, which was concerned with the processes of how schools can change. This research focused on the need for strong leadership and the development of a positive school culture or 'climate'.

More recently, those working in school improvement have been interested in the lessons learned for the transformation of the educational system as a whole – expressed in the notion of 'system leadership'. A good example of this is David Hopkin's book 'Every School a Great

> **"Every successful innovation... has a tipping point where the change transforms itself... from enjoying a limited interest to become a mass phenomenon"**



> "EVERY LOCAL SCHOOL SHOULD BE A GREAT SCHOOL"

School'. Between 2002 and 2005 Hopkins was the Chief Advisor of School Standards at the DfES. His chief claim is that school improvement researchers have learned the lessons of what makes for school improvement in individual schools, but the challenge is to scale up these reforms and make them go 'system-wide'. He starts off by providing evidence that for any parent the goal of educational reform is that "every local school should be a great school". This goal is (and it's one shared by Ofsted), he thinks, a "no-brainer". He is optimistic that it can be achieved in the foreseeable future, based on the idea of the 'tipping point' whereby "every successful innovation that impacts on society has a tipping point where the change transforms itself exponentially from enjoying a limited sectional interest to become a mass phenomenon". The 'tipping point' in education is now being reached as a result of increased information about the performance of the education system, which means that society is not just demanding excellence, but is prepared to take some responsibility for it happening. However, it's not just about schools, because, following Basil Bernstein's argument over 30 years ago that "schools cannot compensate for society", genuine system-wide reform can only be achieved when society is committed to social justice – this, Hopkins argues, has been secured by 10 years of New Labour government.

Historical continuities

Viewed from a broader historical perspective, it is unsurprising that the gap in educational attainment identified by Ofsted persists, since some argue that education is an effective way of reproducing existing patterns of social inequality. For instance, in a review of educational change

in the period 1945-2000, the educational historian Roy Lowe reflects that:

"The central irony of education in Britain since 1945 is that it has been transformed, yet in many ways remains the same, with identifiable social functions and a hierarchical, even elitist structure which still at the start of the twentieth century bears many of the marks of its Victorian origins."

Lowe notes the existence of a strong sense of hierarchy, the fact that parents and estate agents have a shrewd sense of which are the 'best' schools in a locality, a clear public understanding of what are the 'elite' institutions, and virtually no erosion of the rift between the private and state sectors during this period. In the post-war period, many sociologists of education have reached the same conclusion. Professor Sally Tomlinson, summarising the voluminous literature on educational ideology, policy, development and change concludes:

"Despite the educational successes and advances that could be recorded, a major theme in the literature is that any expectations that more access to education would lead to a more equal society rapidly gave way to disillusionment. Education persisted as a means by which inequalities were created, legitimised and justified, and privileged groups continued to use the divisions and distinctions of schooling to confirm and reproduce their own positions."

For those who seek to bring about improvements in education and narrow the gap between rich and poor, this analysis can seem rather pessimistic. It is argued that the approach tends to focus on the

large-scale processes that operate to create educational divisions, and that it tends to avoid practical action to make a difference in children's lives.

Why does every child matter?

As the previous paragraphs indicate, there are different views about whether and how the gap in educational achievement might be narrowed. In practice, most commentators recognise the importance of both effective practice and broader social factors. While few would argue that the educational gap can be explained away by blaming it all on wider societal factors such as poverty or income inequality, it is not simply a matter of making sure that all schools follow a set of guidelines or blueprints for effective practice.

The desire to ensure that every school is a good school is understandable. It fits the government's concern to ensure that all children are included and have the option to develop their potential. In economic terms it is based on the notion that the long tail of educational underachievement is wasteful of human talent and, ultimately, human capital. In the brave new economic order based on globalisation and the knowledge-economy, raising standards and increasing social cohesion are important targets. All this means that the stakes are high, and that schools are a central part of this agenda. But at the same time, schools are increasingly seen as the key to resolving social problems. Faced with high levels of geographical mobility, trends towards the breakdown of traditional family structures and the much-heralded 'death of community', schools are increasingly looked to as institutions that can provide safe havens for children and contribute to social cohesion and sustainable communities.

Transforming Childhood

The desire to ensure that 'every child matters' is laudable. It is important that all schools provide opportunities for children to thrive. However, the answer to the question of why every child matters is far from clear-cut. Is it in order to fulfil their economic potential and add to the nation's stock of human capital? Is it to ensure that all children are able to live and participate in communities that are safe, harmonious and culturally diverse? Or is it to allow all children to 'find their level' in a society that allocates economic rewards according to success in examinations? The answer as to why every child matters may be all of these and more. Viewed in a wider perspective (and in the British context at least), the drive to ensure that every child matters is to result in transformations in the experience of childhood since the Second World War. Changes in family structure, growing concerns about the risks of childhood, along with the emergence of digital cultures based around the computer screen, mobile phone and text-messaging have led to new forms of childhood. How schools, and society as a whole, responds to these changes, is of paramount importance.

> **"In the brave new economic order based on globalisation and the knowledge-economy, raising standards and increasing social cohesion are important targets"**

Divided we fall

"It is a considerable achievement... that the gap between children from lower income and disadvantaged backgrounds and their peers has not widened"

(HM Government PSA Delivery Agreement 11, 'Narrow the gap in educational achievement between children from low income and disadvantaged backgrounds and their peers', October 2007)

Much has been made of the gap that exists in our society between the 'haves' and the 'have nots' – and as the extract above clearly shows, little or no progress is currently being made on narrowing this gap.

This polarisation is just as real in the area of access to, and use of, technology as it is in economic and social deprivation. With the current fast pace of technological development, we risk exacerbating this distance between the 'e-haves' and the 'e-have nots' if it is not addressed via radical and innovative approaches.

The most effective are those that empower rather than impose, that seek ways of involving people in finding their own ways of addressing a situation, as co-designers, and that offer fresh routes to participation rather than the traditional ones that may have failed them previously. These issues are no respecters of borders, so good ideas can be found both here and abroad, but all can offer valuable lessons about closing the gaps developing between those able to effectively participate in digital cultures, and those who may be left behind.

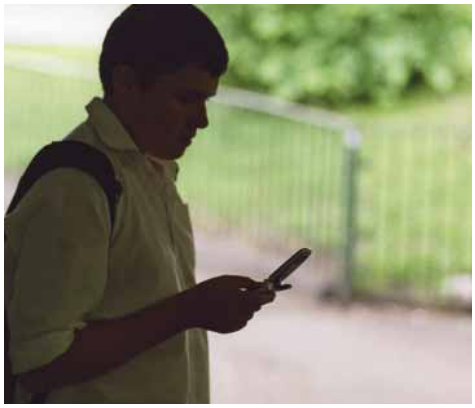
Digital learning beyond school

An estimated 800,000 school-age children in England currently don't have internet access outside school. In response to this Jim Knight MP, Minister for Schools and Learning, announced in January 2007 that he was setting up a Home Access Task Force to find ways to provide it. While it is due to report in March 2008, there are already moves to make this ambition a reality.

The Computers for Pupils project provides 200,000 pupils (and their families) across England with a computer to take home and a connection to the internet. Identified through a formula involving the index of multiple deprivation and free school meals, this initiative confronts the problem in a very immediate and concrete way.

However, providing the kit is clearly only part of the answer. As well as the computer, the recipients - children and families alike - also need the skills to use it and an awareness of the breadth of possibilities now on offer. While schools can provide some of what's needed, their limitations of time, space and curriculum mean that support has to come from elsewhere. One model that may offer some of this support is Club Tech.

Originating in the United States, Club Tech is a collaboration between Microsoft and the Boys and Girls Clubs of America. Over the five years of the project 2,700 clubs across the country have been equipped with hardware and software, and given training in the skills necessary to use it. Beyond basic computer skills, the initiative has also seen the development of a digital arts suite of programs to boost creativity, and an



annual festival to promote their use. So is it a model that could be imported into the UK? That's the question Lizbeth Goodman of SMARTlab, based at the University of East London in Newham, wants to answer.

Having recently completed a quality assurance review of the American set-up for Microsoft, Goodman knows the workings of the project well. She was encouraged initially by the attitude of the funders. "Microsoft is genuinely interested in building, from the ground up, community projects for kids," she says, and when she approached the users she found a similar view. "Having interviewed thousands of kids, parents and volunteers, the response was predominantly positive."

Each location has a standard set-up, which comes with an on-screen tutorial, to teach basic user skills. As Goodman points out, "quality and consistency are difficult to assure if you just donate the kit", particularly in situations where the staff may be volunteers, and certainly not people recruited for their computer skills. "You need a core curriculum, that kids can then leave," she believes.

While this may be less of an issue in this country, due to the place of ICT as a core curriculum subject in schools, it remains an aspect that Goodman sees as key, particularly as she wants this project in the UK to provide a framework that can be exported to other parts of Europe, and then beyond into Africa and Asia. Scoping how this might work will fall to the two researchers recruited to the project, even before the first location for a club has been identified on this side of the Atlantic (although some clubs exist on US military bases). Already the core skills units are being translated into 100 different languages and dialects in preparation for its further growth, although she would like it to become more accessible for those with special needs, too.

Beyond the core skills is the digital arts suite, a set of programs to encourage creativity, backed up by an annual digital arts competition. While Goodman has some personal reservations about this approach, she acknowledges that it has been very successful, perhaps because college scholarships on offer as prizes for young people from the poorest neighbourhoods are very "real incentives".

It isn't just children that have benefited from the clubs. The most successful included instances of wider family involvement, where mums learned computer skills from their sons and daughters, for example. There have also been instances of grandparents volunteering, where members not only built strong relationships but also shared the perspective of an older generation.

As Club Tech starts up here this 'wraparound' approach is one aspect Goodman is keen to promote, but she recognises there is a "challenge to transport that to Europe". Other challenges she and her team face are deciding what should be in the core curriculum, and how that links with schools. However, the first challenge is "to find places where the kit will be looked after". Everything else will grow from there.

THE MOST SUCCESSFUL CLUBS INCLUDED INSTANCES OF WIDER FAMILY INVOLVEMENT, WHERE MUMS LEARNED COMPUTER SKILLS FROM THEIR SONS AND DAUGHTERS

Links

Computers for Pupils:
schools.becta.org.uk/index.php?section=re&catcode=framework_form&rid=13420

Club Tech:
www.microsoft.com/about/brandcampaigns/realizepotential/programs/boysgirlsclub.mspx

SMARTlab:
www.smartlab.uk.com

CREATING AND COMMUNICATING DIGITALLY IN RURAL INDIA

"You can sit in front of a browser and the whole world is at your fingertips. You can find anything in Google," suggests Matt Jones, before adding the caveat, "but it is only from people like you and me." This privileged access to technology gives us a skewed view of the world, he believes, one where the stories of the majority of the planet's population are omitted. It is this imbalance that he is seeking to redress through the StoryBank project, a scheme that is "working towards a place where the worldwide web does reflect everyone's concerns and worries. Then social injustice would be more obvious."

With funding from the Engineering and Physical Sciences Research Council, his project is one of four working under the umbrella title of Bridging the Global Digital Divide. Jones and his team are putting digital tools into the hands of people in Budikote, a village in southern India, so they can record and share their stories. To begin with these will remain within the community - "narrowcast yourself" as Jones puts it - but in the longer term they may make it onto the web.

For the first year of the project the emphasis has been on getting the design of the tools right. A touchscreen monitor was installed on the wall of a community meeting place, which could also be operated via a dial, like a radio tuner. Over 100 digital images and ten broadcasts from the local radio station were uploaded to research how users preferred to browse the content. A combination of observations, group discussions and individual interviews with key members of the community then took place to gauge users' preferences and begin to refine the design to meet them, a process of co-design.

At the same time a number of mobile phones were provided for the villagers to begin to create and upload their own content using Bluetooth. While this is a community with, as Jones puts it, "thousands of years of practice at story telling", their experience is not within a textually literate medium. "The kind of things we are doing try to understand their values in terms of visual expression and story telling," he explains. By providing devices capable of recording images and voices people can create stories and share them easily with others. It is here that the process begins to shift from the technology to the content.

"What form of story - what kinds of story – would make sense to create on a phone?" Jones wonders. "What style? A single image and a voice? Video?" The village already has a strong culture of self-help, particularly among the women. "When we were going through designs villagers could think of practical reasons for using this and were excited by them." He gives the simple example of school children being taught practical information, like the importance of washing their hands and feet after being out all day.

While the focus of the project has been on one, small, part of the planet, Jones recognises the broader impact it could have, both in the immediate vicinity, with ambitions to expand to 40 nearby villages, but also globally; "If we can expose the rest of world to these stories people will learn. Designers will learn."

Will Harwood

Will Harwood

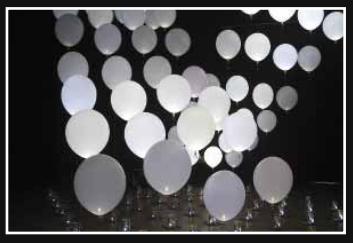
Links

StoryBank blog: **wiki.bgdd.org/wiki/Wiki.jsp?page=StoryBank**

StoryBank: **www.cs.swan.ac.uk/storybank**

Getting creative

Justine Lera



Atom

Robert Henke and Christopher Bauder have created Atom – a sound and space experience where helium-filled balloons move and glow in sync with sonic events to create an audiovisual ballet of light, music and motion. The height and brightness of each balloon is dynamically controlled during the performance. The height and movement of the balloons is adjusted via computer controlled cables, and LED lights inside each balloon vary the brightness. The eight-by-eight array of white, self-illuminated spheres float in space like the atoms of a complex molecule.
www.monolake.de/installations/atom.html

Experimental Product Design Lab

Feral Robots

Natalie Jeremijenko, Director of xDesign Environmental Health Clinic of NYU and the Experimental Product Design Lab of Yale University has developed the abilities of robotic dogs to make them super-hounds, capable of sniffing out pollution. Their modified brains, noses and legs enable them to seek out the presence of contaminants like Volatile Organic Compounds (VOC) or Trichloroethylenes in waste ground. The playful new uses of these interactive toys renders pollution data legible to diverse participants, providing the opportunity for evidence-driven discussion, and facilitates public participation in environmental monitoring and remediation.
www.nyu.edu/projects/xdesign/feralrobots

Todd Holoubek

Peg Mirror

Peg Mirror is an interactive artwork created by Daniel Rozin, comprising of 650 circular wooden pieces that are cut on an angle. Casting shadows by twisting and rotating, wooden pegs forming concentric circles surround a small central camera. The mirrored image produced in this work is activated by software authored by Rozin that processes video signals and breaks up imagery geometrically, seemingly pixel by pixel. The silently moving wood components in this piece flicker like jewels or coins in the spotlight, challenging our notions about what constitutes a digital object.
www.smoothware.com/danny/pegmirror.html

Evelina Domnitch and Dmitry Gelfand

Camera Lucida

The Camera Lucida (light chamber) transforms sound waves directly into light emissions. In a transparent chamber filled with a gas-enriched liquid, several ultrasonic transducers produce a constantly changing sonochemical environment. After adapting to the absolute darkness surrounding the installation, the viewer/listener gradually perceives the highly detailed shapes and movements of glowing sonic vibration. A hydrophone (a submergible microphone that is sensitive to ultrasonic frequencies) translates into the human hearing spectrum the sound of the transducers as well as that of the hundreds of thousands of gas bubbles collapsing inside of the liquid.
www.portablepalace.com/lucida

Yuichi Ito

White Lives on Speaker

Sculpture by means of sound is the theme of this work, in which a white fluid on a vibrating loudspeaker membrane brings forth a variety of different forms. The material used here is potato starch dissolved in water; the mixture solidifies when stimulus is applied but returns to a fluid state when the stimulus ceases. This piece features two modes of inputting the stimulus that sets the starch solution into motion: the first is a constant frequency applied as a sound; the second is the constantly varying frequency of an installation visitor's brain waves.
www.wlos.jp

Baba Tetsuaki

Freqtric Project

This project explores the communications possibilities engendered by physical contact. In 'Freqtric Drums', the members of the audience surrounding a performer are transformed into drums. The performer can then play the people he's hooked up to as if he were playing the drums. In 'Freqtric Game', players can use skin contact to issue commands they would be unable to execute with their input/control devices alone. The project is supported by ADCDU and Tomimatsu Interaction Design Lab, Kyushu University.
tserve01.aid.design.kyushu-u.ac.jp/~baba/works/FreqtricProject

Environmental lessons

Is an opportunity to create a culture of environmental sustainability in our schools and communities being lost? And what role might digital technologies play in this agenda?

With the Building Schools for the Future (BSF) programme now well underway, the environmental sustainability of our existing, and planned, school buildings is increasingly coming under scrutiny. But the challenge is not just how to meet sustainability objectives such as energy efficiency and low carbon footprints. The real challenge is to design, build, test and maintain schools that integrate environmental sustainability into the very fabric of the school, to enhance the curriculum and to deliver what teachers and children need.

For some analysts, a radical reappraisal of the whole process, with its flawed focus on unmeasured inputs such as biomass boilers, photo-voltaic panels and ICT equipment rather than on outcomes, would result in more effective sustainability approaches. But others go further, and

White Design

insist that sustainability needs to start with a consideration of how the learners might benefit.

White Design is an award-winning architectural practice and consultancy specialising in sustainable buildings, including eco-schools and other learning spaces. Director Craig White explains how a new approach can provide radical educational change:

The real challenge is to design schools that integrate environmental sustainability into the very fabric of the school to enhance the curriculum

"We don't ask questions about the architecture or the technology of a new school building. We start with the child and then work back from there so that the product is a building fit for education."

White believes that the task for sustainable school design is for every subject to have an immediate or second-tier link to the environment pupils are in, by recognising that physical structure and systems (heating, light, ventilation, water etc) are intrinsic to the education experienced by children. School buildings and the pupils should communicate with each other.

He also flags up some difficulties specifically around the way that ICTs are commissioned in the design process:

"One issue is that ICT is not often part of the design agenda because it is commissioned separately, like furniture... we aim to influence the ICT brief as far as possible, drawing on our specialised knowledge of making buildings into tools for learning in their own right."

To offer an alternative approach that really integrates the environmental agenda with the educational agenda through the use of ICTs, White draws on his company's experience in designing new schools:

"We build middleware so that pupils can log into the school system to access the technical data. They will see how much heat is being generated, how much water is being used and from what points, the carbon emissions that the school is creating, where the lights are on and off and so on. All the information they access is curriculum-friendly and the software they use interprets the basic data so that it is understandable for a 6 or 16 year-old.

"The school now becomes a vehicle rather than a container for education. We can then map the building and its information to the government's Eight Doorways to Sustainability."

The aim is to provide hooks into the school's systems for learners and teachers to engage with. For example, the system could show that 7,000 litres of rainwater has been collected this month via an LED read-out in the foyer. This basic data can be translated to show how many raindrops there are in 7,000 litres and, from there, how many raindrops it takes to flush a toilet. The 'lifecycle' of that water can be mapped from clouds to rivers to seas. It can be linked to the carbon emissions created. Lessons can be learned from the value different countries place on water, from the European perspective and from countries where water access is scarce.

The school's systems can thus provide a source of information directly relevant to teaching and learning, which provides rich opportunities for the student.

So will this vision of ICT as an important tool for promoting the sustainability of schools and their wider communities become a reality? The Education and Skills Committee warned in its report 'Sustainable Schools: Are we building schools for the future?' that a lack of confidence and clear direction from government could lead to ICT failing to act as a means by which educational and environmental transformation can be achieved through the BSF programme.

Roderic Bunn, analyst at the Building Services Research Industrial Association (BSRIA) agrees that a unique opportunity could be lost. He believes that if the technologies employed are appropriate and easy to manage, then the pupils can be empowered to learn and contribute to the sustainability of their school: "The

White Design

best caretakers in schools are the kids. In maintenance and manageability, they make a huge difference."

At the moment, however, he thinks that we are not exploring this possibility, as the design of sustainable technologies and their controls are too often too complex.

"You mustn't sell dreams and install nightmares. Design is too often 'fit and forget'. It should be 'fit and manage' with much more careful proving of technology. The technologies are not properly commissioned and not properly mapped to schools' needs. There are really bad user controls, which are very complex and often not labelled. Users may have no idea how they work."

"There is a danger that under the banner of sustainability, schools will lose control of the technology as it becomes too complex to manage without proper training. There is very little evidence-based design going on, with the focus on inputs – technologies like photo-voltaic panels and wind turbines. What's needed is focus on outcomes. Are solar-powered and solar-tracking shading systems, for example, too complex for a primary school to manage and gain educational value?

The challenge is how to give young people the toolkits and the responsibility to link together creative, information and knowledge applications. Learners should be in control of the ICT they use; software should be invisible and outcomes-driven, allowing users to build new links between applications and data without the need to write complex code.

But ICT structural management is only part of the wider context in which a culture of sustainability is reinforced through the transformation of school buildings into a knowledge resource for learners.

Cassop Primary School in County Durham, winner of the DCSF Award for Sustainable Schools in the National Teaching Awards, serves two former coalmining villages and has been working to become carbon neutral since 1999, with the installation of a wind turbine, solar panels and a biomass boiler to power the school building, and wide-ranging energy efficiency measures. The school is a brick building built around 1912, with the interior completely refurbished in 1972.

Headteacher Jim McManners and his staff integrate education for sustainable development into all school work. Through partnerships and grants, they have developed a school that displays and uses all forms of renewable energy. Pupils – the Green Team - are at the forefront of the campaign, as 'energy monitors' and knowledgeable guides for visitors, including linked schools in Europe and Africa.

McManners says: "It isn't sufficient to act locally. We need to address global issues and find routes to influence others. To do that responsibly we needed more than a prophecy of despair and alarm. The wind turbine and other equipment offer us a positive route to education on sustainability."

The school has set up a sustainability centre for pupils and visiting groups of all ages. The aim is to make connections between the quality of the environment and people's actions, while providing the opportunity to discuss global issues and potential solutions. The centre gives children a chance to learn through firsthand experiences and for other groups to make use of facilities. They learn how the wind turbine works and why it is installed, which also leads to discussions on other ways to make energy. Children can also make and test small turbines in the centre's wind tunnel as well as constructing tiny photo-voltaic cells.

Groups can also see and discuss the heating system that uses recycled waste wood, viewing the whole process from planting to boiler house. Visiting the nearby landfill site to see what happens to rubbish prompts discussion on producing methane-fuelled electricity, recycling and ways to reduce waste. Visitors can also see school fuel being made from rubbish, and use a glass recycling simulator.

Woodheys Primary School

Woodheys Primary School in Sale, Cheshire is another example of award-winning, inclusive sustainability. Freda Eyden, the school's Environmental Projects Coordinator, says that the ecological agenda is at the heart of the curriculum but extends far beyond the school gates. Among many other eco-friendly tasks, the children monitor energy use and teams check daily for wastage in the building. Updated ICT kit has reduced electricity consumption.

Eyden works with other teaching staff to ensure that the knowledge children acquire in their practical sustainability routines feeds back into most subject areas and helps to focus on wider, global issues such as carbon emissions, resource management, recycling and renewable energy sources.

"Feedback from families shows that what the children learn goes beyond the school gates. We are making sustainable life the ethos of the school by living it as well as teaching it through the curriculum," she says.

This evolution of the school's role as an educational hub at the heart of a community requires that it extends beyond the buildings, allowing access to its knowledge resources 'anytime, anywhere' and for the greatest number of people. A variety of devices and networks can help to create conditions for sustainable community involvement and inclusion.

Handheld devices (PDAs and high-specification mobile phones) could provide the means to cut equipment costs, reduce energy use and, just as importantly, help to effect a transformation in the geography of learning. With these devices, pupils can acquire knowledge and skills in a variety of settings, both real and virtual. The devices can access and interact with information in the formal school environment as well as in the community and at home.

Going further, young people can use these devices to personalise the way they learn, blending their knowledge of community software, blogs, wikis, messaging and so on, with formal curriculum structures to recreate and own their learning experience.

Established schools can transform their structures through the use of wireless networks with portable devices that can free a wider range of spaces for learning, extending beyond the physical building into the surrounding landscape.

However and wherever technology is used to contribute to achieving the vision of sustainable schools, questions still remain on whether the current guidelines and benchmarks in place are adequate. A sustainable school is not just a building that meets current green standards. It has to be a sentient structure that interacts with learners and gives them the opportunity to acquire new knowledge and skills. Learners should also have a degree of control over the school's technologies so that they can measure, adjust and transform their environment. But most importantly, schools can become the means to transmit sustainable living messages out to the wide community, and this is an opportunity that should not be missed.

National Framework for Sustainable Schools: The Eight Doorways

The Sustainable Schools strategy aims to encourage schools to take on board the principles of sustainable development in their everyday work, achieving educational excellence alongside the goals of:

- healthy living
- environmental awareness
- community participation
- global citizenship.

The National Framework introduces eight 'doorways' through which schools may choose to initiate or extend their sustainable school activity. It focuses on ways in which sustainable development can be embedded into whole-school management practices and provides practical guidance to help schools operate in a more sustainable way. Each doorway may be approached individually or as part of a whole school action plan.

Food and drink
By 2020, the government would like all schools to be model suppliers of healthy, local and sustainable food and drink. Food should, where possible, be produced or prepared on site. Schools should show strong commitments to the environment, social responsibility and animal welfare. They should also seek to increase their involvement with local suppliers.

Energy and water
By 2020, the government would like all schools to be models of energy efficiency, renewable energy use and water management. They should take the lead in their communities by showcasing wind, solar and bio-fuel energy, low-energy equipment, freshwater conservation, use of rainwater and other measures.

Travel and traffic
By 2020 the government would like all schools to be models of sustainable travel, where vehicles are used only when absolutely necessary and where there are exemplary facilities for healthier, less polluting or less dangerous modes of transport.

Purchasing and waste
By 2020, the government would like all schools to be models of sustainable procurement, using goods and services of high environmental and ethical standards from local sources where practicable, and increasing value for money by reusing, repairing and recycling as many goods as possible.

Buildings and grounds
By 2020 the government would like all school buildings - old and new - to make visible use of sustainable design features and, as opportunities arise, to choose building technologies, interior furnishings and equipment with a low impact on the environment. The government would like all schools to develop their grounds in ways that help pupils learn about the natural world and sustainable living, for example, through food growing and biodiversity conservation.

Inclusion and participation
By 2020 the government would like all schools to be models of social inclusion, enabling all pupils to participate fully in school life while instilling a long-lasting respect for human rights, freedoms, cultures and creative expression.

Local well-being
By 2020 the government would like all schools to be models of good corporate citizenship within their local areas, enriching their educational mission with activities that improve the environment and quality of life of local people.

Global dimension
By 2020 the government would like all schools to be models of good global citizenship, enriching their educational mission with activities that improve the lives of people living in other parts of the world.

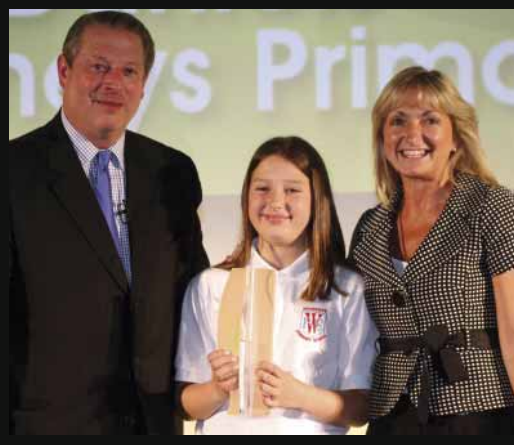
Availble from:
www.teachernet.gov.uk/sustainableschools/framework

Links

Cassop Primary School:
www.cassopschool.org.uk

Woodheys Primary School:
www.woodheys.trafford.sch.uk

White Design



Andrew Aitchison

Woodheys Primary School

White Design

Events

BETT 2008

9-12 January 2008

Olympia, 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.

Learning Technologies

30-31 January 2008

Olympia 2, London, UK

www.learningtechnologies.co.uk

The Learning Technologies conference, now in its ninth year, attracts many of the world's renowned learning experts, visionaries and leading figures and over 300 conference delegates.

Building Schools Exhibition and Conference (BSEC) 2008

12-13 February 2008

Manchester Central, UK

www.buildingschools.co.uk/bsec/home

BSEC is designed specifically to bring together the key stakeholders responsible for the implementation of the government's Building Schools for the Future, Academies and Primary programmes together with generic school infrastructure, maintenance and design of our schools. The two-day event provides a unique forum for all those involved in the school rebuilding initiative, from policy makers to suppliers.

Safeguarding Children in a Digital World: National Conference and Exhibition

13 February 2008

National Motorcycle Museum, Solihull, UK

events.becta.org.uk

This dissemination conference will review progress towards the establishment of the UK as the safest online environment for children and learners across the world. Delegates will hear first-hand the latest government initiatives and current thinking to ensure the safeguarding of children within their own organisation.

The Education Show

28 February – 1 March 2008

NEC Birmingham, UK

www.education-show.co.uk

The show offers an unrivalled opportunity for visitors to network with experts and peers as well as to review the very latest in educational resources. This makes the show the must-attend event for anyone involved in the UK education sector.

Society for Information Technology and Teacher Education (SITE)

3-7 March 2008

Las Vegas, USA

www.aace.org/conf/site

The 19th annual conference of the Society for Information Technology and Teacher Education, which represents educators interested in the creation and dissemination of knowledge about the use of information technology in education. This annual international forum offers numerous opportunities to share ideas, explore the research, development and applications, and to network with the leaders in this important field of teacher education and technology.

CeBIT

4-9 March 2008

Hanover, Germany

www.cebit.de

CeBIT is the world's largest trade fair showcasing digital IT and telecommunications solutions for home and work environments. The key target groups are users from industry, the wholesale/retail sector, skilled trades, banks, the services sector, government agencies, science and all users passionate about technology.

4th IEEE International Workshop on PervasivE Learning

17-21 March 2008

Hong Kong, China

wwwra.informatik.uni-rostock.de/perel08

The workshop series aims to address the issues of pervasive computing in combination with new types and possibilities of learning, teaching and working. PerEL 2008 is a one-day workshop that covers both the technical as well as the non-technical aspects of pervasive learning forcing innovative learning environments by utilisation of wireless communication and wearable computing.

Championing Children, Families and Communities

18-19 March 2008

Hilton Metropole, Birmingham, UK

www.continyou.org.uk/news_and_events/events/championing_children_families_and_communities

This unique event, ContinYou's annual conference, will share innovative examples from across the UK of people, projects and organisations putting children, families and communities at the heart of their work. It will highlight for managers, planners and practitioners how policies and practice can connect together across boundaries to maximise outcomes for all.

Computer/Human Interaction (CHI) Conference

5-10 April 2008

Florence, Italy

www.chi2008.org

CHI 2008 focuses on the balance between art and science, design and research, practical motivation and the process that leads the way to innovative excellence. It is about balance in a rapidly evolving field, the balance between individuals and groups, co-located and remote, stationary and mobile, in both our local and global communities.

Mobile Learning 2008

11–13 April 2008

Algarve, Portugal

www.mlearning-conf.org

The IADIS Mobile Learning 2008 International Conference seeks to provide a forum for the discussion of mobile learning research and to further understanding of the topic from the standpoint of learner mobility. How the multiple perspectives of mobility and the interactions among these influence and enhance current definitions, design, and evaluation of mobile learning will also be explored.

EISTA 2008

29 June – 2 July 2008

Orlando, Florida, USA

www.socioinfocyber.org/imsci2008

Relationships between education/training and Information/Communication Technologies (ICT) are increasing with original ideas and innovative tools, methodologies and synergies. The 6th International Conference on Education and Information Systems, Technologies and Applications brings together researchers and practitioners from both areas, in order to support the bridging process between education/training and ICT communities.

ISTE 2008

29 June – 23 July 2008

San Antonio, USA

www.center.uoregon.edu/ISTE/NECC2008

Join more than 18,000 teachers, technology coordinators, library media specialists, teacher educators, administrators, policy makers, industry representatives and students from all over the world at this event focused on hands-on, interactive learning about how technology and the latest Web 2.0 innovations can transform teaching and learning.

ED-Media 2008

30 June - 4 July 2008

Vienna, Austria

www.aace.org/conf/edmedia

The World Conference on Educational Multimedia, Hypermedia & Telecommunications is an international conference which serves as a multidisciplinary forum for the discussion and exchange of information on the research, development, and applications on all topics related to multimedia, hypermedia and telecommunications/distance education.

SIGGRAPH 2008

11-15 August 2008

Los Angeles Convention Center, USA

www.siggraph.org/events/s2008

SIGGRAPH 2008 dissolves the borders between traditional SIGGRAPH programs to create a more fluid, interdisciplinary conference, with more flexible options for sharing work. The show aims to offer the highest quality, most timely educational experiences the community has to offer, presented by the most powerful and most engaging leaders in computer graphics and interactive techniques.

Handheld Learning 2008

13-15 October 2008

The Brewery, London, UK

www.handheldlearning2008.com

The world's leading event for learning and mobility, the Handheld Learning Conference is a great opportunity to connect with the leading international opinion formers, policy and decision makers, thought leaders and practitioners.

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