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What's learning got to do with it?

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Author: Bob Harrison, Education Adviser, Toshiba Information Systems(UK) Ltd , Consultant, DIUS Improvement Group ,BECTA and National College for School Leadership

" Brightest pupils less able than 30 years ago, research shows" screamed the Headline in the Guardian in October 2008.

Professor Michael Shayer, professor of applied psychology, King's College. London tested 13 and 14 year olds ability to think "analytically" and "logically", applying a test first designed and used on the same number of pupils of the same age in 1976. He concluded that the research showed the children's responses had become quicker but lacked depth of thinking.

The research, published in the British Journal of Education Psychology sheds interesting light on learning and the differences in learning past and present. But thought about differently, the findings may be telling us more about the ways young people access and process information through their experiences in school and also in the wider society. Perhaps it raises a number of questions about the relationship between digital technologies and learning which could have significant and profound effects on education in general and the Building Schools for the Future and Primary Capital Programmes in particular? Returning to the findings, we might also consider:

- Whether children are now learning in different ways to adults?
- Whether therefore we can we conclude anything about "deep" or "shallow" thinking/learning from a test devised 40 years ago?
- What "deep" and "shallow" learning look and feel like in the digital age?
- How the fast paced, multi-sensory, multi-screen, partial attention, world of digital technologies affect the ability to reflect and deepen learning?
- What this means for educators, educational institutions and the assessment system?
- How should we be designing buildings, interiors and technologies to support content creation, collaboration and active learning?

At the Institute for the Future of the Mind, Martin Westwell, Jonathon Sharples and Darvany Deal are hoping to shed some light on these issues with their research projects: Young Minds: the effects of digital technologies on cognition; and The influence of virtual technologies on attention and cognitive control on young people.

They argue that as digital technologies become increasingly pervasive, - through mobile devices, instant messaging, social networks and instant access, - the line between real and virtual lives is fading rapidly and key cognitive abilities such as creativity, attention, independence, and imagination become influenced and affected by the ever-changing world of digital technologies.

Baroness Susan Greenfield, in her book, "Tomorrow's People", suggests that the education system is in crisis as it struggles to respond to the ways in which people learn.

Whilst we clearly cannot jump to the conclusion that the whole system of education should change on the basis of these arguments, currently it is clear that we are not witnessing any significant departure in the way buildings and learning are organised and constructed. However, the changing nature of learning and interaction in society surely needs greater attention when thinking about the future of education and the learning places we may need to account for such changes. It is not difficult to understand the chasm that is emerging between what learners use in their everyday lives and what goes on in classrooms and lecture

theatres across all sectors, if the time is taken to listen to learners' voices and their experiences.

Susan Greenfield's thesis is predicated on her expertise and experience in neuro-science and her views about the emergence of digital technologies;

...The individualisation of the brain will increase as vast ranges of brain cell circuits configure in extent and power according to the particular type of input they have, that increasant and complex daily assault on the senses that makes up your daily existence.

She goes on to draw a distinction between "people of the book" and the younger "people of the screen" and alludes to the real digital divide between teachers and learners which could have profound effects on preparing young people for the next generation learning they rightfully expect and increasingly demand.

These differences clearly illustrate that it is not what young people need ,or do not need, to learn but rather how they think and interact with the world that needs to be considered in the design of new learning spaces.

This presents an enormous challenge to how the current system of "schooling" is organised and delivered at every level and has profound implications for the thinking and planning which underpins the world's largest educational building programme, Building Schools for the Future, and also the Primary Capital and LSC Capital programmes, with the unprecedented sums of public money being invested in buildings and technology.

As Greenfield suggests;

As Education becomes an ongoing experience, and therefore less differentiated from everyday life, and as that experience is increasingly screen derived, perhaps not just the notion of "learning" but even the traditional concepts of "school" and "university" will start to become meaningless.

This theme is developed further by the MacArthur Foundation report "Living and Learning with New Media" a white paper published recently which summarizes the results of a three year ethnographic study which examined young peoples participation in the new media ecology.

Whilst the study illuminated a number of issues and the implications for society in general it was the emergence of self-directed and peer learning and the social and recreational use of new media as a site for learning which could have profound implications for the education system.

" participation in this networked world suggests new ways of thinking about the role of education. What would it mean to really exploit the potential of the learning opportunities available through online resources and networks?"

Mike Sharples of the Learning Sciences Research Institute at Nottingham University offered a similar view through his presentation at BETT 2008, entitled "Disruptive Mobile Learning". In it he contrasted learning in formal and informal contexts and suggested that mobile technologies could bridge that gap if teachers could be freed from some of the internal system constraints they currently have to work within.

So what are the relationships between Learning and new technologies?

Professor Diana Laurillard, Chair of Digital Technologies at London Knowledge Lab, explored the role of digital technologies in achieving our educational ambitions at her inaugural lecture. In it she noted that the majority of learning theories emphasise the importance of the learner being the *"active agent"* in the learning process, but has the investment in ICT in the early waves of BSF taken this into consideration? What has been the relative investment in technology for teaching or technology for learning? There is an inherent danger is that this trend will reinforce 'learning by attention' and pedagogical models not suited to collaboration, co-construction and personalised learning.

Professor Laurillard points out that ambitious plans for personalisation are unaffordable without changes in both approaches to learning and teaching and the effective use of digital technologies.

Chris Yapp, former Head of Public Sector Innovation at Microsoft, and now at Cap Gemini summed this position up when he stated in "Personalising Learning in the 21st Century" which he co-edited with Sarah De Freitas:

Learning has always been and always will be a personalised experience...it is the organisation of education, which has been impersonal.... digital technologies make personalisation achievable at scale....

The arguments above summarise the issues and present those at the heart of the BSF/PCP/BCF projects with some challenging questions, many of which have been echoed by the House of Commons select committee report into the early waves of BSF, which suggested that the opportunities for technology to transform learning and the transformational potential of BSF to date have not been fully realised.

The Challenges

- 1. What more do we need to know about the relationship between how people learn and the use of digital technologies to enable us to design, plan, prepare and construct learning environments which will enable learners to be prepared for 21st Century life?
- 2. What small steps can we currently take to use technology in an innovative and creative way to create the synergy between formal and informal learning.
- 3. How do we create a climate for the education workforce to innovate and be creative within a system, which is "internally consistent and self sustaining"?
- 4. How do we create the capacity for thinking within the complex and pressurised process of BSF/PCP/BCF?
- 5. How do we ensure we spend the enormous investment wisely and that it will support learning transformation?

This article was first published by Futurelab at Building Schools Exhibition & Conference (BSEC)in February 2009.

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The Greening of the Digital Landscape

Thank you for editing the entry. This is how the edited entry will appear in the database.

Author: Dr Jason Ohler, President's Professor of Educational Technology and eLearning, University of Alaska

Suddenly everyone's favorite color is green. Not the color of money and envy but of their antithesis environmental embarrassment. We are slowly awakening from our high technology revolution the way we do from an engaging movie, shedding our suspended disbelief to rediscover the world around us. What we see is that our relentless push for change has come with a price tag, namely the generation of a mortifying amount of computer generated landfill.

Much of today's green concern about computing focuses on energy conservation and more efficient, earth friendly ways to discard yesterday's model. But almost none of it focuses on a lifestyle change we have quietly embraced that expects us to upgrade every two years. After all, our throw-away culture is also our economic engine, unrelenting in its desire to make room for the new at the expense of the previous. It is built upon faster, lighter, cheaper...always with a shorter half-life.

The result is that we are generating piles of old gear that has no reasonable expectation of use beyond its very short life cycle. If you are 40 you have probably already had and discarded at least a half dozen computers, not to mention numerous television sets and other now quaint digital memorabilia. Sure, you gave your last laptop to your niece, who will no doubt get a few years use of it. But eventually not even the indigent will take it because it is, basically, useless.

Operation Seek and Discard

I got to see this first hand recently when I volunteered to head up Operation Seek and Discard. Our mission was to search every nook and cranny in my University of Alaska office building for defunct technology that was resting in some out-of-sight-out-of-mind place. For one week, myself and a brave cadre of colleagues spelunked under desks, in closets, in filing cabinets long ago locked, and managed to scare up enough obsolete tech to sink a mainframe. It turns out that a lot of the defunct gear was hiding in plain sight on people's shelves and desks. We had just learned to ignore it, the way we had learned to ignore the water cooler that hadn't been filled in years.

At the end of the week, the dispossessed pieces of tech were gathered in a pile in the center of a large room, forming a collage of hulking desktop computers, low resolution cameras, VHS players and a mishmash of cords and cables that held it all together the way spaghetti holds together a fine Italian meal. People would come by and stare before shaking their heads and saying, "Remember when we would sell our own kids for one of those things," pointing to a color printer the size of a small refrigerator. "Now we can't give them away." Alas, we can't give our kids away either.

As I stared at all the obsolete tech silently huddled together doing the dance of the digitally dead I felt a mixture of guilt, sadness and denial. After all, I was one of the digitally hopeful who helped convince the forces of the industrial age to walk out on to the leading edge, only to watch the edge sprint away from us at gigaspeeds. The pursuit of staying current quickly became inevitable but impossible. This mess was my mess.

A new Kind of Obsolescence

So much of this comes as a surprise because the digital age has so drastically redefined the concept of obsolescence. Cars with seized engines and rusted out frames are still good for parts. In fact, we have junkyards dedicated to their utility. But that isn't how the digital age works. Most of the stuff we had to get rid of in Operation Seek and Discard worked just fine. The only problem with it is that it was... sloooowwww. And because it was slow, it had become incompatible with the faster technology everyone else was using.

The good news for our institution was that it did a good job of wringing every last drop out of technology that the public would allow. After all, the public will be the first to criticize an educational institution running last year's gear. But the bad news is also the good news. Despite anyone's best efforts, the digital age seems destined to generate landfill by the truckload. This could change. If the public demanded laptops made out of spare parts and recycled cardboard I am sure the engineering community could rise to the challenge. But I don't see that happening soon. And it's not just institutions that make a mess - we do it too. We wouldn't dream of making our kids use slow computers running yesterday's operating system. It's the digital age equivalent of not feeding our children.

At the end of the Operation Seek and Discard I had created two piles. The first was stuff that we would either melt down for scrap, donate to the local gun club for target practice or ship off to state surplus. That is, anything that was over three years old. The second much smaller pile consisted of stuff we might actually use. While much of pile two was on the cusp of obsolescence, there was one piece of technology that had been around for 30 years and still had another 30 years left in it: the upright Royal vacuum cleaner. The custodian claimed that.

What's next?

What do we make of all this? Surely schools can't live with yesterday's processor speeds. It's downright irresponsible. And they can't continue to force students to stare at fuzzy screens. That's inhumane. So we wait for some social movement, some enterprising green company, some funded mandate from the government that will make green computing truly possible. When it comes perhaps it will allow us to at least reuse our computer casings, inserting new innards as they become available. Perhaps it will entail a new approach to creating computers that makes their constituent parts truly recoverable and useful. Or maybe it will drive us to create computers that are comprised of so little that it won't matter.

But in the meantime, we live with our mess, teaching the science of ecology as a game of catch-up in a world that is exploding with efforts to turn third world nations into first world competitors, complete with the purchasing power that entails. And while we wait for the other shoe drop in many countries embracing a digital lifestyle, we approach our own future like we do the federal deficit, once again passing the buck on to our children.

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BETT 2009: A review

Author: Adrian Porter, Head of ICT at Wycombe Abbey School



Welcome to the BETT show for 2009 and the usual queues outside but I discovered the biggest queue was for free fruit dipped in a chocolate fountain. If you got beyond that there were delights to suit all tastes of ICT in education.

Interactive boards

First thing was to visit the Smart stand (the 'Extraordinary made simple') before things got too busy and I joined a delegation of Japanese educationalists looking at the new Smart table. Similar technology to Microsoft surface. However, this was the Smart version and it represents a fundamental change in the way we interact with digital content. Throw away your mouse and keyboard as you manipulate images and content with simple finger gestures and touches. The Microsoft technology is already in use in hotel lobbies or bars and provides an interesting way of presenting information. In a restaurant, you could look at an interactive menu and order your food by click and drag on the table. But here was a truly educational use. An interactive table that is multi-touch, multi-user and all packaged up as the Smart table, set down low such as you might find in any primary school.

The games are designed around the new technology. To paint a picture, drag your fingers around on the surface as you would if you were finger painting with real paint but without getting your fingers dirty. You can respond to sums by placing your fingers down on the table and it counts the number of digits. The demonstrator showed us an animal game to pair up animals with environments that invited discussion and group work. The teacher could set up the games using a USB stick and it all seemed simple enough. I hadn't been so impressed since I saw the first interactive board at BETT in the 20th Century. This was the start of something new. The asking price was a lot for a primary school - £5,500 but apparently they can't make them quick enough and no doubt the price will come down in the future. Could it be used in the secondary classroom? Perhaps not in this form but it will be interesting to see how it evolves. The Japanese were impressed anyway.

I stayed on the Smart stand to look at various other things. The new Version 10 Smartboard software offers many new features including tables and easy integration with a visualiser, and many other features. I think visualisers should be part of every science teacher's armoury and they would suit many other practical areas.

The classroom management software, called Synch has been updated and allows the teacher to broadcast his or her screen to the class or to model one pupil's work to the other pupils. I have been trying out this software and I usually have it on the whiteboard to show the class. We can then



work on something collaboratively in the class as they can easily see how others are doing. It has all the usual blocking and sending out files or applications that you would find in any classroom management software but if you have a smartboard it integrates well as a teaching tool.

I received my best BETT trinket ever at the Smart stand. A USB wrist bracelet in bright green. On the USB was

the Smartboard Student Edition. This is a version of Smartboard for students and it looks very appealing. Students could carry the software and their work from school to home on the USB bracelet. The software is good for making lesson notes with an excellent binder, key words and easy searching. You can easily turn your notes into presentations - PowerPoint style and easy integration with the teacher whiteboard software. If you are a Smart fan then I would recommend you to take a look. Although I had one or two reservations. You can export to PDF, PowerPoint, HTML or image but you can't seem to export an essay plan direct to word without copying and pasting the text. I can also imagine problems with backing up files to the network because it would be terrible if a student kept all their work on a USB stick and then lost it! However, it's early days with this beta product and I am looking forward to the production edition.

Internet safety

At CEOP (Child Exploitation & Online Protection), I found useful information about Safe internet day in February. They have developed some assembly material for primary and secondary schools and are updating their information for parent awareness days. An award winning film developed by the German Internet safety organisation has been customised for an English audience. It's called 'Where's Klaus?' and is available on CEOP's You-tube site.

NAACE

NAACE was just one of the professional organisations for all those interested in advancing education through ICT and apart from all the usual bulletins that I receive through the year, it entitled me to use the NAACE / RM lounge. I hope you all made good use of this facility. There were free refreshments, an internet café and plenty of places to relax. There was a large display area from RM called 'Learning Spaces for the Future.' I was particularly impressed by the 3D whiteboard display where I saw a dissection of the heart. OK - you had to wear those 3D glasses to see it but the human body was taken apart before my eyes and you could almost feel yourself floating down the arteries and through the heart. It made me feel rather ill. Is there a case for being too realistic in the classroom?

Maths

At the Autograph stand, I was introduced to version 3.2 which is a dynamic maths program that brings graphs and various maths concepts alive. New features include some interactive whiteboard integration and 3D column revolutions. There are new books with ideas for teachers and students.

Film Education

With the advent of small, cheap video cameras that can easily download to the computer everyone in school is becoming a film maker. All the more reason to take an interest in filming in general. The Film Education stand is always worth a visit and it didn't disappoint this year. I collected a couple of resources. A CD containing various lessons aimed at 5-11 years on Narnia including an edit suite to cut your own version of a trailer together. The other CD was a resource for 11-14 years on 'The boy in the Striped pyjamas.' This is a brilliant resource for English and is available on the web site as well. To be released in March 2009 is the Boat that Rocked. If you register with them you can receive updates during the year and most of their resources are completely free.

Science and PDAs

Mobile devices seemed to be theme of the show with mini classrooms of children doing interesting things with PDAs. For example, Stephen Heppell (of Ultralab fame) was on the 'Learning Elsewhere' stand, focussing on learning beyond the classroom using mobile, remote and distance learning.

Elsewhere, Wild Knowledge offers a range of products including some software called Wildmap which allows users to create tours or trails that contain multimedia interest points. This application would be ideal for creating visitor guides or treasure hunts. If a GPS was available, users could create their own personal interest points whilst walking the trail. WildKnowedge is also a portal that lets the user create and share interactive forms, keys, maps or images for use on any handheld device. Conducting a survey or collecting geographical information such as river details would be perfectly possible.

I am always impressed by schools that spearhead the use of PDAs. In the end it seems to come down to the enthusiasm of a particular teacher. They are not everyone's cup of tea. There are issues to deal with. Battery recharging, loading up information and software and then just the problem of keeping track of many small devices. In the future, maybe we can just use the electronic potential that most pupils will carry around with them in the form of a mobile phone that is rapidly becoming a sophisticated PDA of its own.

Geography

The advantage of the crowded cafes at BETT is that you can easily chat to others. So over a coffee I discussed the smart table with some primary teachers who thought it sounded too expensive as predicted. They gave me a tip, though, to look at GoogleEarth - Street view which gives interactive displays at street level, mainly in America. I commend you to try it out.

The Ordnance Survey was advertising its new Explore portal. This is an on-line resource that allows you to create a route on a map. Write, blog, type information and add photos to illustrate points of interest on the map.

With GIS (Geographical Information Systems) topics in new specifications, the OS offers a GIS zone with information and interactive missions to entertain and educate.

Young Gifted and talented

I managed to get a demo of The YG&T website. Available to all regardless of whether they feel gifted or talented, the site has plenty of opportunities for everyone. New though at BETT was the launch of Eco-Builder. This is a new interactive game, aimed at KS3, which allows users to become eco-architects and to oversee the design and construction of a fully sustainable virtual community. I am looking forward to trying it out.

MirandaNet and MirandaMods

At the Mirandanet stall, nicely tucked away in the corner with a homely feel, groups of educators were getting together in a small group to tell each other about their own projects. Mirandanet is an international e- community of people who are passionate about ICT in education. It's a helpful and supportive resource of people from all areas. Although I didn't have time to attend them, there were a whole series of lectures on throughout BETT from 'Internationalism in Schools' to 'Projects in Mobile learning' organised by MirandeNet.

One laptop per child Project

The OLPC project was on the Open source stand and continues to make a difference in the Third World. Buyers are asked to buy one and donate one. There are many permutations on this theme but the end result is to get children using computers in countries where the technological infrastructure is weak. So we have children in Ghanaian schools for example able to use these incredible robust and clever PCs in the bush. The antennae create a mini wi-fi network allowing the teacher to send out work or to act as a router to the internet. The machine changes configuration easily from the PC format to an e-reader format for books. Suddenly the village school library can be on a par with the best of British.

Finally

BETT continues to attract educationalists from around the world and it offers glimpses into all the new technologies and a chance to engage with the people behind the developments. It is impossible to see everything in all the different zones that seem to spring up each year but I hope I have given you a flavour of some of the attractions. Now, where is that chocolate fountain?



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Websites

Smart http://www.education.smarttech.com CEOP http://www.ceop.gov.uk NAACE http://www.naace.org Stephen Heppell http://www.heppell.net/ Wild Knowledge http://www.wildknowledge.co.uk Ordnance Survey http://www.ordnancesurvey.co.uk/oswebsite Autograph http://www.autograph-maths.com Film Education http://www.filmeducation.org/ Young Gifted & talented http://ygt.dcsf.gov.uk/ Mirandanet http://www.mirandanet.ac.uk

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New professional cultures : braided gatherings in The Third Space

Author: Christina Preston, John Cuthell, Theo Keuchel, Leon Cych, Dai Thomas, Drew Buddie and Allison Allen, MirandaNet Fellowship

Cultures of learning are changing world-wide in this digital age. Conventional understanding of mobile learning, a useful term for digitally-mediated, multimodal learning, is usually framed in terms of devices that are not tied to specific physical locations: laptops; data loggers; PDAs, smart phones; netbooks and an increasing range of products that link learning to classrooms and curricula. Multimodality in this context means meaning-making through signs that include sound, gestures, animation, graphics, body language and so on.

Whilst learning remotely and informally is largely is what has been understood about mobile learning, we can now extend the concept to include the informal spaces in which learning takes place - the liminal spaces that those who push the boundaries of digital possibilities now inhabit intellectually. In discussing educators, Zeichner speaks of the Third Space to denote democratic sharing of professional resources and practices (Zeichner and Liston 2006; Zeichner 2008). This is a useful term to denote liminal spaces for educators.

The value of developing a web-based Third Space in a 'community of practice' (Lave and Wenger 1991) is highlighted in by digitally experienced teachers and advisers who are members of the professional organisations: Naace, MirandaNet and ITTE. These teachers and advisers who responded to a study about Continuing Professional Development in digital technologies explained that in these communities of practice (CoPs) social networking cultures were already established, although the majority of the members still confined their activities to email list discussions (Preston and Cuthell 2007).

From observations of the online activities in the Third Space of these three CoPs, an emergent model called Braided Learning has been developed that highlights the ways in which members of professional CoPs are developing the affordances of mobile learning for themselves (Cuthell 2005; Haythornthwaite 2007; Preston 2008). The braided metaphor describes processes of building collaborative knowledge using Web 2.0. The framework reveals a three-dimensional process of learning and practice that entails coming to understand and participate in a creative, progressive 'braiding' of text, opinions, and ideas. These processes reveal how learning by professionals, for the purpose of strengthening both the profession and individual understanding, unfolds in the online context.

There are three identifiable stages in the process professionals adopt and practice in their professional, online, learning. In the first stage the CoP engages in creating a braided text online that supports diversity and change of opinions. Some members act as e-facilitators or braiders who help to shape the argument, provide interim summaries and change the direction of the discussion. In the second stage, braiders demonstrate meta-learning by constructing braided artefacts, which re-interpret the online debate in different styles for different audiences. In the third stage, accomplished fellows take the initiative to set up working parties to explore a subject in more depth. At this point the participants become active professionals, using collaborative knowledge to build new theories and policies. Collaborative publication is a key goal in order to impact on policy in the longer term.

Increasingly, these members of CoPs are shaping liminal spaces to fulfil their own professional needs. Most recently Braided Learning theory is being applied to emerging MirandaMod programme that is a modification of 'unconferencing'. Wikipedia defines the term "unconference" as applied, or self-applied, to a wide range of gatherings that try to avoid one or more aspects of a conventional conference, such as high fees, travel costs, sponsored presentations.

In MirandaNet such an unconference is called MirandaMod, an informal, loosely structured unconference of like-minded educators to share ideas about the use of technology to inspire others. Historically; Mod comes from the Gaelic word for a gathering, assembly or parliament. MirandMod is usually (but not always) a fringe event following or attached to a formal MirandaNet seminar/workshop or meeting. The Wiki-based format, with streamed webcasts, chat facilities and linked Twitter streams, mean that there is an international dimension to these events. Like wikis, blogs, chat and email, this online multimodal communication is unlike previous modes of knowledge construction because remote participation reduces time and cost commitments. In these unstructured activities software such as Flash Meeting linked to microblogging and instant communication streams empowers digital visitors to engage remotely with those at the terrestrial meetings, even to the point of placing a convivial beer next to their terminal. Second Life is also being considered as a welcoming MirandaMod location. Pilot evaluation using the Daly and Pachler indicators is already suggesting evidence of a sense of community, meta-learning and knowledge construction. (Daly and Pachler 2007)

What is important about this knowledge creation activity, however, is that the technology is sufficiently transparent to empower all members to set agenda at the grassroots. This mirrors young peoples' mobile learning activity outside school in easy to use virtual environments like ThinkQuest, Beebo and Facebook that allow them to follow their interests and exploits their existing talents. Significantly MirandaMods encourages democratic debate rather than promoting socialisation. These MirandaMods challenge the usual model of conferences for teachers where there is limited interaction, if any, between 'experts' on stage and the expert audience. In the MirandaMod professionals have equal input regardless of their differing status in the world of education. PowerPoint is discouraged, and each participant who has a seven minute spot is chosen on the night by software designed with a fruit machine interface that underpins the random selection. The iChat text, video stream and Twitter feed is then posted in the MirandaNet Third Space so that those who could not participate have a record of proceedings. Currently this material is also being used for research in order to develop the Braided Learning framework more comprehensively.

The MirandaMod is proving valuable in the creation of professional knowledge as opposed to socialising online. This instant communication between work-based experts is a valuable mode of professional learning, where all the participants define the agenda during the event. Unlike a more formal event, innovation can be reported as it happens even though it is not, perhaps, fully worked out. This gives a chance for other members of the CoP to comment whilst new developments are in progress. It also gives publication value to the kind of expert knowledge that teachers' are unlikely to commit to a full academic paper.

MirandaMod pilots, held at an exhibition called BETT09, are now being analysed to see whether this emerging mode of communication might now offer innovative and engaging opportunities for professional knowledge creation in the areas of Visual Literacy, Communities of Practice and Mobile Learning. The hope is that these new modes of learning can be implemented explicitly within work-based Continuing Professional Development programmes for teachers. This will provide more professionals with access to processes of knowledge creation through the application of mobile learning affordances.

The latest MirandaMod multimodal texts can be found on www.mirandanet.ac.uk/mirandamod

Thanks to Norbert Pachler for permission to publish this article Co-director of the WLE centre http://www.wlecentre.ac.uk

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Putting eLearning Policy into Practice – Online Learning and Teaching for Educators' Programme in Northern Ireland (OLTE)

Author: The OLT team in RTU - Byron Evans, Fiona Synnott, Geraldine Taggart and Eibhlin Tinneny



In 2003, the Education Technology Strategy Management Group requested that the Regional Training Unit for Northern Ireland (RTU) develop "a programme of online professional development for the education community in Northern Ireland." The programme had to support the goal of the Northern Ireland Empowering Schools Strategy (2003) www.empoweringschools.com.

How it all started

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'that all young people should be learning, with, through and about the use of digital and online technologies".

This request followed several years of exploratory work which involved among others the Department of Education for Northern Ireland funding a group of educationists (17 drawn from all sectors of the educational community) to undertake a Masters in Educational Technology¹ in 2001. These educationists have subsequently been described as "eLearning² pioneers" and many of them have laid the foundation for future online activity in Northern Ireland. Also, at this time a number of online pilots were trialled (Online Support for Professional Development in RTU, Online Support for Professional Development in SEELB, Schools of Thought, PGCE Online in University of Ulster and GCSE ICT online)

In response to this challenge, the RTU after considerable research and dialogue with the educational community, designed, developed and gained accreditation for a modular, practical blended³ programme which was called Online Learning and Teaching for Educators Certificate (OLTE). This Certificate is accredited through the Open College Network Northern Ireland (OCN) at Level 4 {15 credits} and uses the Blackboard virtual learning platform. The OLTE programme was developed by working with colleagues who had completed the Masters in Education Technology and were experienced in delivering online education.

In terms of the ET Strategy, the objective was to build critical capacity. Initially this was targeted at the education support services staff and the strategy was to help develop their online pedagogical skills so that they in turn could support teachers and help teachers move into using an online environment with their pupils.

The OLTE Programme

The aims of the OLTE programme are to:

- provide experience of learning online and develop online tutor skills;
- encourage participants to engage in critical thinking in relation to the development and evaluation

of e-learning; and

• equip participants with the experience of designing, developing, implementing, tutoring, reviewing and evaluating online learning experiences and programmes.

The programme consists of three progressively more challenging practical units with the focus on the pedagogy of online learning. The OLTE programme aims to transfer the participants' effective teaching skills into an online environment and thus the programme can be viewed as a sort of "teaching practice online".

The first unit (Notional Learning hours of 30+ over a period of 6 weeks) is an introduction to online tutor skills. In this first unit, participants gain experience of being an online learner. The second unit (Notional Learning hours of 30+ over a period of 8 weeks) focuses on designing, implementing and tutoring an online lesson. In Unit 3, (Notional Learning hours of 90+ over a period of 18 weeks) participants design, implement and tutor their own online learning programme. A blended learning approach is used throughout all three units which includes face to face and online session.



Throughout the programme, participants are encouraged to engage in reflective, self evaluative activities and this has proven a very effective and powerful learning tool. Over the lifetime of the programme, the tutors have shared the good practice from past graduates by video taping their reflections, getting some of them to host a "hotseat" discussion and showcase their online courses to newcomers. The participants are provided with every opportunity to learn new things from innovative software e.g. wikis, podcasts to videoconferencing.

To date, participants have been drawn from the Curriculum and Advisory Support Services (CASS), Classroom 2000 (C2K), the Curriculum Council for Examinations and Assessment (CCEA), the Education and Training Inspectorate (ETI) and the Regional Training Unit for N Ireland (RTU). Since 2003, over 100 members of the education community have undertaken the OLTE programme, which in turn has resulted in over 450 teachers, pupils, parents and colleagues gaining experience of working online in their pilot courses. The experience of these 100 educationists was a positive one and they have encouraged other colleagues to undertake the OLTE programme.

The educational support staff have developed a wide range of online courses including for example:- The role of the advisory officer in schools, Information Handling Skills, Citizenship, Reading skills, ICT supporting pupils with special educational needs and Developing the role of literacy coordinators.

Moderation

It was decided at the outset that in addition to the RTU OLTE internal moderation procedures, external evaluation would be included. Initially this was carried out by Dr Chris Comber from the School of Education, University of Leicester. The external moderation process has been invaluable to the high quality and development of the OLTE programme. An Extract from the External Moderator Comments " . . extremely impressed by the programme and think it to be one of most effective, well structured and delivered programmes of its kind", Dr Chris Comber 2007

Engaging with teachers

In 2007, following on from the success and impact of OLTE on the education support staff, the Department of Education funded the first post-primary teachers' places on the OLTE programme. This coincided with the introduction of the revised curriculum for Northern Ireland and also the new "entitlement framework",

requiring schools to offer pupils a minimum of 24 courses at Key Stage 4 and 27 courses at post 16.

The first teacher group inducted into OLTE was made up of over 50 teachers from some 27 schools spread across Northern Ireland. The overarching aim of the OLTE programme for teachers was to assist their schools address 3 target areas:

- 1. developing a strategic approach to ICT developments and online learning in particular;
- 2. developing collaborative arrangements between schools in general and Learning Communities in particular; and
- 3. broadening curriculum provision for pupils from age 14 onwards.

In addition to this strategic approach to schools, individual teachers involved have been required to reflect on their practice, develop resources, plan for delivery, teach and assess their pupils in an online environment. This valuable professional development opportunity allows teachers to revisit the General Teaching Council (GTC) Professional Competences and can be used towards Performance Review and Staff Development (PRSD) requirements.

There is no denying that the OLTE programme has been a challenge for anyone undertaking it. The participants are to be commended for their commitment, collaboration, perseverance, generosity of spirit and all important sense of humour. The feedback from the teachers to date has been positive also.

Feedback from teacher participants

"... I would now say that I am an advocate of on-line learning, I feel it has much to offer to students of all ages. It accommodates a range of learning styles, facilitates the display of information in many formats, helps to highlight weaknesses in students learning, as they use the platform to seek advice on aspects they have difficulty with, and we as tutors will have a record of this." Mrs Eileen McStocker, St Pius X College, Magherafelt

"Aire Bainisteoirí agus príomhoidí! Níl teorann ar r-fhoghlaim agus níl bac ar ghréasú idirghníomhach. Tá sé ann réidh le dhul!"

"Principals and managers take note! The sky's the limit with e-learning and there is nothing to stop the tidal wave of interactive networking. It's out there ready to go!" Dara MacCoille, Colaiste Feirste, Belfast

"The future? ...Who knows, perhaps I'll be teaching from home for some of the week instead of at school, maybe the students will begin to extend their learning to outside of the constraints of the classroom and begin to see each other as valuable a resource of information as their teacher." Robert McKee, Antrim Grammar School

"As a self-confessed "technophobe", I always knew this course would be challenging, however, I was surprised to find it both highly engaging and motivating. I see the potential online learning has to animate my subject and to enthuse my students." Sinead O'Connor, St Mary's College, Londonderry

"The online course has been a challenge however it has massive potential in our schools. Pupils will no longer be restricted to only accessing subjects taught within their schools." Sarah Guthrie, Foyle and Londonderry College

"Being a participant on this challenging, engaging and exciting course has added a whole new dimension to my teaching toolbox . . . The benefits for students are enormous because the possibilities for active learning and using learning methods that suit all types of learners are endless. For our young people, the online environment is not the vast unknown; in fact it is already used extensively for entertainment, research, communication and social networking. . . . it can also be part of their educational lives. ", Roisin Rice-Cutter St Peter's High School, Derry Last year's teachers developed and delivered a variety of online courses to pupils from across a range of post-primary schools including, for example, aspects of GCSE History, GCE Science, and GCSE Modern Languages (A full list is available on the RTU website: www.rtuni.org).

This academic year (2008/2009) some 28 teachers have enrolled on the OLTE programme and at time of writing this article have successfully completed Unit 1. They have recently started on Unit 2 (January 2009), and will embark on Unit 3 in the summer term with a target for delivery of their online courses in September 2009.

Post OLTE

Following on from the OLTE programme success, the Department of Education is funding three post-OLTE pilot projects. These online courses are being developed for subsequent blended course delivery: GCSE Double Award Engineering, Certificate of Personal Education (CoPE) and GCSE iMedia. The teacher tutors for these pilots are OLTE graduates working collaboratively to deliver "high stake" qualifications to pupils drawn from a variety of schools in their learning communities and beyond.

Graduation Ceremony

On 13th November 2008 a unique OLTE graduation event took place in Belfast Castle. For the first time practising post-primary teachers and education support officers (ELBs, ETI, and CCEA) who had successfully completed the OLTE programme, were awarded their certificates in a joint ceremony. The certificates were presented by Mr Gordon Topping, Chief Executive of the North Eastern Education and Library Board.

At the ceremony, Tom Hesketh, director of the RTU, commented, "In relation to the new learning paradigms of the 21st century, we realised quite early the necessity to build capacity within the education community to make best use of e-learning environments and actually design and teach successful courses online, whether they be for teachers or pupils. . . "



The Department of Education is currently inviting post-primary schools in Northern Ireland to apply for OLTE for the 2009/10 academic year. Priority will be given to applications from schools within Learning Communities

which have had no access to OLTE training in previous cohorts, which clearly identify partner schools and have begun to consider which courses have online potential for their school/learning community and could form the basis for Unit 3 of OLTE.

Innovative Teachers

Some former OLTE graduates have gained world-wide recognition for their online work. Tom Fitzsimmons and Ciaran McLaren from Crumlin Integrated College, and Eileen McStocker of St. Pius X College, travelled to Hong Kong to represent Northern Ireland at the 2008 Microsoft Worldwide Innovative Teacher's Forum in November.



The teachers were chosen from competitors all over Northern Ireland who entered the Microsoft competition to find Northern Ireland's most Innovative teacher. The teachers won through to the semi final stage of the competition - which meant that 3 of the very best 28 teachers in the world came from Northern Ireland! There were over 80 teachers representing in excess of 60 countries at the worldwide awards. Tom Jackson, Schools Technology Innovation Centre Manager, Microsoft

Northern Ireland, said: "It's great to have two Northern Irish schools competing at the global finals this year. ... As the world changes and the skills our children need in the work force of the future change, we need to move education to a model of 21st Century learning. These projects are great examples of the innovative approach we should be taking."

As educators in Northern Ireland we are all too aware of the need to prepare young people for life and work in the 21st Century. The OLTE programme will help teachers succeed in delivering quality online learning programmes which in turn will address the current and future needs of our young people enabling them to succeed. Byron Evans, RTU's ICT Adviser with responsibility for OLTE reflects, "It has been fascinating to watch and have played a part in the growth of the OLTE programme. It is daunting to realise just how much needs to be done to ensure that teachers can be just as effective online as they are in a traditional face to face classroom."

It is sometimes said, "The only place practice follows policy, is in the dictionary". The OLTE team4 believes their model is a good example of how developing clear policy first, results in high quality practice. The challenge ahead for the RTU OLTE team is to grow the OLTE programme while maintaining its high quality and strategic impact.

For further information about the OLTE programme visit the RTU Website www.rtuni.org

Endnotes

¹This was a joint venture between Duquesne University in Pittsburgh and the University of Ulster.

² There are a number of misconceptions with the term eLearning. The preferred definition used by the OLTE programme is: 'teaching and learning enhanced by information and communication technologies (ICT)... delivered 'anywhere, any place, any time' using communication tools, content and resources which can be accessed online.'

³ Mixture of face to face and online teaching

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A Comparison of Children's In-School and Out-of-School Use of the Internet: The Coherence of the Inchoate

Author: Dr. Albin Wallace, United Learning Trust

ABSTRACT

This study compares the in-school and out-of-school use of the Internet by a sample of 883 year seven students from a group of schools in England from a range of socio-economic areas. In comparing this usage a number of questions are asked about similarities and differences in behaviour and lessons to be learned.

Previous research and recent writings on this topic were examined and a theoretical framework was formed that eclectically draws on a number of sources, including postmodern authors. Similarly, a mixed methodology was used incorporating an online survey of students, group interviews and analysis of computer logs.

The main research question for this study was How do year seven children use the Internet both in-school and out-of-school? This question was broken down into subsidiary questions.

It was found that informal learning using the Internet often appears as being self-motivated with a strong sense of ownership both of content creation and social networking. It is often generated by a real purposeful need by the children themselves often with the assistance of their peers.

Schools should be places where literacy in new media can be developed. The sample of schools in which children were consulted in the research represents a broad set of social profiles across England.

All the students included in the sample were from schools with good Internet provision and it also appeared that children were generally immersed in the Internet in their out-of-school contexts. In this sense, perhaps the Internet is a non-issue for them, being such a natural part of their lives that it holds no awe or surprise. The concern is that school and home practices will diverge to the point where school Internet use becomes increasingly irrelevant in the lives of children.

Introduction

I used a number of elicitation techniques including an online questionnaire and an interview framework. Among the types of questions that have been avoided in both the online questionnaire and the interview framework are those that require respondents to consult stored data, would make them feel uneasy, would reflect negatively on them, or would make the process of responding unpleasant. At the top level of questioning, the main research question (and the one upon which other questions are based) for this study was:

How do year seven children use the Internet both in-school and out-of-school?

A number of subsidiary questions to the main research question were developed. These questions were carefully developed and chosen because they helped provide further detail to the main research question, and also they had relevance to my professional work. They also allowed the comparison referred to in the title of this study to be examined from a number of perspectives i.e. by highlighting similarities, differences, the importance of any differences and lessons to be learnt. The chosen questions were:

- How is out-of-school Internet behaviour of year 7 students similar to in-school Internet behaviour?
- How does out-of-school Internet behaviour of year 7 students differ from in-school behaviour?
- If the behaviour of year 7 students differs, is this important?
- Do schools have something to learn from home practice (and vice versa)?

• Is it possible to generalize from research such as this?

In formulating these questions I have attempted to adopt the much-discussed postmodernist notion of the "estrangement of the familiar" (Maclure, 2006, p. 4). In this study, and in the context of the Internet, the framing of the research questions are intended to further estrange that which already may be seen as strange and becoming stranger still. The Internet as I have already described is a strange, amorphous, postmodern phenomenon and this concept is explored further.

Body of Paper

A careful reading of the data analysed from the web logs, the surveys and the interviews revealed an interesting story of children's in-school and out-of-school use of the Internet. This is especially apparent when examining differences in gender and in the way in which children use and perceive the Internet as a vehicle for information retrieval and social networking. It clearly suggests that children's use of the Internet is embedded in their everyday experience, and is a natural, comfortable and valuable part of their social, private and, to a lesser extent, school lives.

2.1 Summary of findings

The children who participated in this research are ahead of the technology itself in some ways, demanding a higher level of performance and efficiency than it is often able to deliver. Issues such as speed, filtering (especially at school), viruses, spam, spy and other malware are seen as an irritation. Restrictions that are placed upon them at school, whether through web filtering, timetabling, access or other issues are, however tolerated and children are phlegmatic about their schools' provision of Internet services. By contrast they usually find their access at home more enjoyable, beneficial and helpful to their school-related, recreational, private and social lives.

According to their own report, it seems that children regard themselves as having a well-developed, sound and perceptive sense of the accuracy and veracity of the information that they commonly access from the Internet. They are likely to use the design, web address and general 'feel' of a website to assess its potential and likely accuracy. They use their personal experiences when evaluating the accuracy of information obtained from a specific website, and will often self-filter websites that they have discovered in the past to be unreliable, inaccurate or misleading. This is especially true of wikis. Children often evaluate a website by quickly assessing the amount or type of advertising or pop-ups encountered. Websites that include excessive advertising or inappropriate (e.g. gambling) advertising are often avoided by children as they self-censor websites they encounter. This is true of both home and school usage, although at school Websense © will usually filter out inappropriate websites before they reach the students' desktop. Children often indicated that they use effective methods of triangulation or verification when obtaining information of doubtful authenticity. Methods of verification include comparing data extracted from a number of websites, seeking information from an adult or peer or referring to books for confirmation of information.

Unsurprisingly, children used search engines more frequently at school than any other category of website. This was stated by them in their surveys and during interviews and was also validated by the Websense © logs recording their usage. For recreation, in their out-of-school environments they liked playing games, browsing and downloading music and videos. For social communication, across both genders they preferred using instant messaging as their mode of social communication. Most children reported using the Internet extensively for helping with homework and revision, with a preference for using the Internet in private areas out-of-school such as bedrooms or other private living and recreation areas.

Both online and offline literacy practices were seen to be strongly related to Internet use, with children who reported spending significant amounts of time reading books and magazines also reporting moderately high Internet use. The Internet was certainly seen by children as forming an important part of their social and educational activities with words such as "accuracy" and "learning" occurring frequently during the interview group discussions. The Internet is clearly valued as a dependable source of information and as a means of social communication.

Some gender differences in Internet usage were observed in the survey. Girls generally indicated that they were more likely to use social software such as instant messaging or social networking sites than boys, whereas boys were more likely to use Internet games for recreation than girls. Girls' usage of social networking generally focused around keeping in touch with existing friends rather than making new ones. Children of both genders reported not only downloading music and videos as favoured activities but also the creation and publishing of music and videos as popular pastimes. They also described how they enjoyed constructing artefacts on the Internet such as web pages, virtual postcards and other Internet-hosted construction activities. Whilst acknowledging the possible gender stereotyping that these conclusions may infer, girls' higher use of social networking and boys' higher usage of games may be seen as being consistent with both genders' offline interests. This is also supported by the apparent greater likelihood of boys undertaking more risky online behaviour than girls, such as visiting chatrooms.

Unsurprisingly, children generally perceived themselves as having a greater degree of freedom in Internet usage out-of-school than in-school. Those children who felt they had the greatest amount of freedom also reported the highest levels of confidence in Internet usage. Relatively moderate usage (up to two hours per day) of the Internet seemed to be mostly appropriate, being focused on a range of recreational, social and educational activities. Relatively low levels (less than one half-hour per day) of Internet use were often associated with low levels of reading generally, whereas relatively high levels (more than two hours per day) of Internet use was often also associated with low levels of reading. Usage at the high end was often also associated with unfocused, random use of the Internet such as browsing. Those children who reported structured home supervision and the application of some usage rules also reported a balance of recreational, social and educational usage at both home and school.

Notwithstanding children's observations as noted above on the accuracy of information obtained from the Internet, there was also a fascination with its fallibity. Children were interested in encountering information that was apocryphal, misleading or just plain wrong and believed they were efficient and adept at uncovering such websites, although they were unlikely to revisit them for research purposes. Children also found the potential of the Internet to distract interesting, depending on the context of what they found and were often intellectually engaged by stimulating diversions.

Many of the above observations are supported by theories already referred to in the theoretical framework chapter of this study. Butler (2002) and Sellinger (2004) have already been referenced separately as describing the Internet as being a postmodern phenomenon. Their separate pieces of research have picked out three key postmodern descriptors of the Internet, namely its non- hierarchised nature, its virtuality and its mutability. These three descriptors can be related to much of the children's use of the Internet as described in this study. Its non-hierarchised form relates to and appeals to children in the way in which they can create, share and seek information and communicate using Internet-based technologies. The virtuality of the Internet places sources of information, recreational spaces and their network of friends in an easily accessible and synchronous environment created by them wherever they have an Internet-enabled device, but especially out-of-school.

These ideas are also consistent with theories expressed by other researchers. Hernwell has described the Internet as being a function rather than an object and describes it in virtual terms (Hernwell, 2005). Gee (2005) expresses similar ideas, placing experience ahead of information and seeing the Internet in terms of process rather than product. Again, children's process-oriented usage of the Internet is consistent with ideas such as these. At an early stage in the popular use of the Internet, Nune was also writing in similar terms (Nune, 1995), realising quickly that the Internet had no frontiers and as such was not bounded in the same way as other systems of communication or methods of storing and retrieving information. These descriptions closely match, in spirit anyway, the ways in which children spoke, sometimes naively but often perceptively about the Internet.

The children's use of and perspectives on the Internet are also supported by the ideas of Gramic and Lamey (2000) who have spoken about postmodernism in terms of perspectivism, multiplicity and decentralisation and by relating these three concepts to both the Internet itself and to learning on the Internet. Children's

discussion of the Internet and the various viewpoints and relativism that pervades both the content and the spirit of the Internet is consistent with Gramic and Lacey's, and although children did not exactly describe the Internet in those precise terms, the perspectivism can be related to the points of view that children expressed and encountered on the Internet, the multiplicity related to the variety of people and information sources with which they interacted, and the decentralisation related to the hyperlinked, shared and democratic nature of their online communication and research. This is also coherent with Chapman's description of the Internet and postmodernism in terms of the multiplicity of competing and subjective narratives (Chapman, 2005). These competing narratives can also be seen in terms of how (in)formal learning itself is seen. Sefton-Green (2004) describes informal learning as being no longer seen in terms of being merely casual, disorganised and accidental but as being an integral part of the same learning process that occurs in more formal settings. This certainly appears to be validated by the comments by children on the way in which they used the Internet informally for educational, social and recreational reasons. Children discussed their use of the Internet in very human and interactive terms, in turn revealing many of their values with respect to honesty, respect and other ethical issues. The revelation of these values and beliefs are consistent with the theories of Butler (2002) who has written about how technology reveals the outcome of our human values. However, and the children in the study have indicated this, the use of the Internet is not a utopian state of being. There are challenges, idiosyncrasies, frustrations and blind alleys, all of which can on the one hand reduce the effectiveness of the Internet for research and communication but on the other hand can help raise the social and intellectual capital gained through working through these issues. Zembylas and Vrasidas (2004) have spoken of the pedagogy of discomfort with respect to online learning and this can be translated to the postmodern context of children's use of Internet where there are unprecedented freedoms, but also challenges, new rules and new responsibilities for parents, teachers and those who care for children in both in-school and out-of-school contexts.

2.2 Patterns of usage

There appears to be some common patterns between students' responses to the online survey, their discussions during the interviews and the logs on Internet usage as produced by the Websense© monitoring software. The Websense © logs show that search engines are by far the most common category of website accessed by students at school. This is supported by the results of the survey where 72% of children use the Internet for obtaining information. It is worth noting that the Websense © logs indicate that there is often little use of the schools' websites and the use that is recorded often relates to those schools that set their website as the default homepage upon logging in, with students quickly navigating away. The survey indicates that only 24% of students use the schools' websites, which raises the issue of the purpose and role of the school website. Is it purely for marketing? Could it be used more effectively for children's learning? Should it more effectively incorporate learning platforms, blogs, e-portfolios or other more interactive elements? These are issues that schools may be prompted to consider.

The interviews yielded a large number of children's comments on the accuracy of content on the Internet, especially with respect to their learning. The interviews included much discussion about online games, and this is also supported by the survey which reported 81% of students using the Internet for games. There appeared to be little variance between what children say they did and what Websense © reported as actual usage.

2.3.Revisiting the research questions

I believe that the methodology chosen for obtaining and analyzing the data in this study has worked effectively in helping to answer the research questions. Both the survey and the interviews produced rich data that assisted my understanding of the area being researched. A quantitative summary of these findings will be available at the conference presentation. My positionality as a keen advocate of the Internet and as a senior member of my organization placed me in a privileged position to interpret the data made available through the methodology. At the top level of questioning, the main research question for this study was : How do year seven children use the Internet both in-school and out-of-school? This was broken down into four subsidiary questions which were:

- How is out-of-school Internet behaviour of year 7 students similar to in-school Internet behaviour?
- How does out-of-school Internet behaviour of year 7 students differ from in-school behaviour?
- If the behaviour of year 7 students differs, is this important? Do schools have something to learn from home practice (and vice versa)?

In retrospect, the main question has been a little less about the children's actual behaviour and more about their perceptions about how they use the Internet, their beliefs and the way they report these perceptions and beliefs. With respect to the question How is out-of-school Internet behaviour of year 7 students similar to in-school Internet behaviour? a number of conclusions can be drawn from the data and analysis in the preceding sections. Children were critical of the accuracy of information on the Internet, especially with respect to their learning. This was drawn out of experiences with a number of websites that were cited as examples. They did, however, demonstrate good ways of checking and validating information, and felt the Internet was a valuable resource. This was consistent with both in-school and out-of-school access.

Children complained about the things that got in the way of their Internet use. This included their experiences with viruses, spyware and pop-ups at home, yet they also complained about the restrictions placed on them by firewalls and filtering at school. This shows their impatience with the technology and their need for immediacy and reliability of access. Children disliked things that got in the way of them using the Internet when and where they liked. I believe this needs a curriculum response, educating children about skilful practices on the Internet and explaining the reasons and the technologies involved for firewalls and filtering. However, generally children demonstrated a good awareness of Internet safety issues. Schools could further encourage and nurture safe practices whilst providing adequate safeguards such as filtering and caching facilities. A good safety policy and code of practice is important.

With respect to the question How does out-of-school Internet behaviour of year 7 students differ from in-school behaviour? and its corollary If the behaviour of year 7 students differs, is this important?, there are a number of observations to be made and conclusions to be drawn. There often appears to be a different relationship between the children and their informal learning and that which occurs in a formal educational setting. Schools should look at ways of making the formal educational experience more related to and built upon that which the children bring from home. In order to do this a deeper understanding must be developed of what children do and how they interact with others online. Bringing the home and school practice together is important. This is more relevant than trying to emulate home practice at school. New kinds of learning are taking place involving, amongst other things, online exploration, collaboration and networking and this should be embraced and contextualised by schools to allow young people the opportunity to practice, enhance and apply their skills in a transferable way both in-school and out-of-school.

Children mainly used the Internet at home in private or other designated areas, whereas at school, usage was more public and exposed. However, children believed that teachers were less likely to know what they were doing on the Internet at school than parents were to know what they were doing on the Internet at home. Videos and games were favourite activities for children at home, whereas search engines were favourites at school. Children unsurprisingly preferred using the Internet at home, mainly due to the privacy and freedom afforded to them. Those who spent the most time on the Internet at school, also tended to spend the most time on the Internet at home.

Do schools have something to learn from home practice (and vice versa)? The use of the Internet by young people differs in informal, formal and non-formal settings. However, there are perpetual and changing overlaps between these settings, and the contexts will be largely determined by the learners themselves. In this sense, although we might aspire to a framework for learning with the Internet, it is a framework that itself is in perpetual beta form. Children develop self-organised learning practices (or contexts) using the tools which are sometimes taught in schools and sometimes learnt informally. It is apparent that children bring informal learning to school. Schools should use this, but not necessarily appropriate it. This has also been commented upon recently by other researchers (Green and Hannon, 2007). Schools should also however,

look at ways of developing context-based models for learning, and seek to understand ways in which informal and formal learning can be realigned. Children should also be encouraged in the school setting to be creators of content as well being articulate and discerning consumers. This is consistent with trends observed in the 2007 Ofcom report on the communications market where the most notable impact of the Internet in recent years was seen to be the conversion of consumers into content producers (Ofcom, 2007, p. 97). It is also consistent with recent research into the CBBC online game 'Adventure Rock'. In 2008, Gauntlett and Jackson conducted a case study on 'Adventure Rock', a virtual world for children aged 8-11 (Gauntlett and Jackson, 2008). This free, downloadable program from CBBC provides creative studios where children can draw pictures, animate cartoons, choreograph dance, compose music and construct machines. CBBC has taken up the challenge of providing safe and appropriate social networking and interactive games for children in this age group. At the time of writing, Adventure Rock is the latest in a series of virtual worlds, created specifically for children in the past two years. Others include Club Penguin, Nicktropolis, Moshi Monsters and My Tiny Planets. Gauntlet and Jackson describe eight types of players in these virtual worlds: exploreinvestigator, self-stampers, social climbers, fighters, collector-consumers, power users, life-system builders and nurturers, all engaged in a series of online activities ranging from solitary to sociable. Gauntlett and Jackson found a number of benefits to be apparent in children's usage of Adventure Rock including the creation of mental maps, rehearsal of responsibility and self-expression. Research such as this is important in informing the future appropriation of in-school and out-of-school online experiences for children.

Schools need to listen to children and their use of the Internet, and develop strategies to bring together the richness that both informal and formal learning can provide. Schools also need to provide the opportunity for children to practice the skills that they bring from informal learning and enable them to use those skills in a range of contexts and settings. In doing this, schools should not attempt to mimic out-of-school use, but concentrate on enabling responsible and effective use of IP-based technologies by students. The development of a set of ethical, safe and critical approaches to the Internet is crucial. However, it also apparent that children already have some good critical skills in finding and analysing information, and that they are good at verifying and validating information found on the Internet. On the social aspect of the Internet, there is a need to further develop safe practices with respect to social networking, blogging ,e-portfolios and other online activities.

Given children's frequent interest and participation in Internet games, there is further scope to explore the educational possibilities available through these activities. The fun elements of the Internet greatly appeal to children of this age, and the appropriation of creative and constructivist activities continue to be a desired outcome for children. Teaching children to be disciplined users is important too. My research showed that those who spent a lot of time just browsing were often those who had unrestricted use of the Internet at home. The encouragement of supportive, responsible parental supervision is important and schools should have a role in promoting this. Where the response from home is apathetic or negative, schools should look towards the education of parents and the provision of the Internet during out of hours time in the form of after school, or homework clubs where good out-of-school Internet behaviours and habits can be demonstrated and developed.

Is it possible to generalize from research such as this? Informal learning using the Internet often appears as self-motivated with a strong sense of ownership both of content creation and social networking. It is often generated by a real purposeful need by the children themselves, often with the assistance of their peers.

Schools should be places where literacy in new media can be developed. The sample of schools in which children were consulted in the research represents a broad set of demographic profiles across England. As the sample was restricted to children at year seven, responses from other year levels would most probably have shown a different set of responses. This is especially likely with respect to the ownership of social networking sites. Older children may be more inclined to use the Internet for communications, to explore and test boundaries and to behave in a more independent manner.

All the students included in the sample were from schools with good Internet provision and it also appeared

that children were also generally immersed in the Internet in their out-of-school contexts. In this sense, perhaps the Internet is a non-issue, being such a natural part of their lives that it holds no awe or surprise for them. This contrasts with my own response, where I am still easily impressed by new Internet-based applications. The danger is that school and home practices will diverge to the point where school provision of the Internet becomes increasingly irrelevant to children's lives, especially if a significant gap between teacher and student competencies emerges and grows.

Perhaps a more longitudinal study is required, following the patterns of usage over a number of years and possibly examining other types of ICT usage such as mp3 players, mobile camera phones and emergent technologies.

Both Internet use and reading are popular activities and seem to be related i.e. children who like using the Internet also like reading. This clearly links Internet use as being a literacy activity. Games, homework, browsing and instant messaging are favourite activities and the literacy activities associated with these are worthy of exploration. As Internet use and reading are closely related, literacy is a key skill for Internet use and also a key way of improving and practicing that skill. The motivational level for activities such as these is high, as children enjoy the levels of engagement that are afforded by use of the Internet. There appears to be a mixed set of rules for home usage, and education of parents is important, especially if their skills and understandings of children's social practices on the Internet are low. Because of children's high levels of confidence with the Internet (66% think they are good users), rules for both school and home usage should perhaps be constantly reviewed.

There is a bigger gap between those with access and those without access for boys and girls, and this inequity of access should be explored further. Certainly, the research shows that more emphasis is needed on reading for boys. Girls' interest in social networking applications also demands a curriculum that teaches responsible use. My research shows that social networking owners are more independent, less likely to look at recommended websites and although children are quite aware of safety issues and can recognize dangers, we must continue to equip them with the necessary skills. The use of resources from Childnet International and the Child Exploitation and Online Protection Centre is to be encouraged. Resources outlined by the Cyberspace Research Unit's 2004 report (O'Connell, Price and Barrow, 2004) into emerging trends amongst primary school children's use of the Internet has been taken up by many schools and local authorities. This trend is also to be encouraged and cascaded into the family homes of children. As noted previously, boys tend to use the Internet more for chatrooms, games and music, possibly partially because they have less strict rules at home than girls but possibly just because this is what boys enjoy doing anyway. A curriculum response that teaches responsible use is also required here.

The role of the Internet in schools certainly needs constant examination. Students generally don't see its usage at school as being as relevant as might be hoped. Indeed, Lankshear and Knobel describe how "much classroom appropriation of new technologies is ineffective, wasteful, and wrongheaded. For a start, they [educators] are likely to see that effective use of the Internet calls for sustained continuous periods online with minimal constraints" (Lankshear and Knobel, 2006b, p. 258).

A response is required to address this relevance, possibly through further research into teachers' perceptions and usage, and there is arguably a need to revisit professional development models for the use of Internet applications in the classroom for learning and teaching. Much of what the young people appear to do on the Internet is play, not just with respect to online games but playing with video, music and social networking. The institutional rationale for the expense of providing the Internet in schools is primarily for the transmitting of information to learned. This is how the cost can be justified. The dichotomous nature of the Internet for play/learning is managed by young people, although 'play' is still the key word. This is consistent with Sandvig's view of the Internet as a place for ritual and play as well as for information retrieval and work (Sandvig, 2006). Again, Lankshear and Knobel "do not advocate turning schools into 'playgrounds' for new literacies at the level of popular cultural engagement, Educational practice is distinct from and different to popular culture. The day we give that distinction away is the day we give formal education away" (Lankshear and Knobel, 2006b, p. 259).

Some authors speak of the necessity of engaging children with the use of the Internet (Pritchard and Cartwright, 2004). Most children who responded to my research were soundly engaged, with the engagement being a natural and embedded part of a child's habitus. I believe that the issue here relates more to giving children the critical and ethical capabilities to use the Internet more skilfully.

Lack of access to the Internet at home by children can mean exclusion from a range of social, creative and constructivist skills. Children not using the Internet for communicating with friends, music, games and homework are missing out on a great deal. Perhaps this is a future role of schools' Internet provision, not just as an enabler of access, but also a promoter of innovative practice. Teachers employing strategies such as personalised learning, formative assessment and other contemporary approaches to education may find in the usage of the Internet mechanisms by which children can become more independent, directing their own curriculum and managing their assessment for learning. Internet tools such as learning platforms require teacher engagement at the same time as letting go of the locus of control. The negative side of increased online engagement is that excessively heavy use of the Internet is often related to music downloading and chat room use and the dangers of Internet addiction should be an area of future concern both for parents and schools. Children who use the Internet for more than two hours per day could be prone to Internet addiction, and excessive Internet use should be monitored by parents and teachers, as has already been noted by researchers (Yoo et al, 2004). The issue of Internet addiction is also explored by Cao and Su who found that, certainly in China, young people with Internet addiction possess different, and often disturbing psychological features when compared with those who use the Internet less frequently (Cao and Su, 2007). The reality at the time of writing of this study (2006-2008) is that a significant proportion of children use the Internet to watch videos and claim that they are more likely to use the Internet than television to learn about things (Ofcom, 2007, pp 94-95). As they get older (and approach the age of my sample group) they are also more likely to use the Internet to keep in touch with other people (Ofcom, 2007, p. 96).

Both parents and teachers need to listen to and observe children's online behaviour whilst at the same time respecting their privacy. Byron talks of how "in terms of adult input with the young person and technology, this is a time to move towards collaborative management" (Byron, 2008, p. 38). Zembylas and Vrasida discuss the principles of Levinas' view on ethics and how they relate to Internet use. Internet use has an ethical significance which all parties must discover on a journey together. The ethics will evolve through a sensitive and sympathetic partnership (Zembylas and Vrasidas, 2005). With respect to the education of both parents and students, parental and child use of the Internet together as a shared experience could improve the effectiveness of parental monitoring. This is supported by the findings of Wang et al (Wang, Bianchi and Raley, 2005). This also is supported by other writers who stress the importance of understanding parents' and children's interaction with the Internet at home (Valentine and Holloway, 2001).

Looking back on my own research process in examining these areas, I can see issues relating to the time sensitivity of the data. The Internet has changed significantly during the time of writing of this study (2006-2008) and in a short period of time the Internet will further mutate and children may become engaged in a range of online activities that are yet to be invented. Activities described in this study may be discarded by children in favour of new technologies affording fresh opportunities for leisure, for learning, communicating and collaborating. In this sense, this study is an artefact representing a snapshot of the state of children's Internet usage during 2006-2008.

Further work will certainly need to be undertaken to ensure that we are constantly revising our own practices as educators, parents, builders of schools and collaborators with children's online and offline worlds. New theories will in time emerge to support these and we must constantly reflect not just upon what is happening, but on what new ideas could emerge from future research.

Conclusion: The Coherence of the Inchoate

Although the study is now completed, it represents a part of a longer journey for me. Given the constantly

changing nature of the Internet, I have not so much completed this study, as strategically abandoned it. On reflection, I am satisfied with the methods I used, although with the benefit of hindsight I would have made the questions more open, allowing for more wide-ranging responses from the children. Although logistically impractical, I would like to survey the children 2-3 years on from the time of the original survey and interviews. I believe that using as large a sample as I did for the online survey worked well, generating interesting and useful data. However, in their 2008 report of learners and technology, Cranmer, Potter and Selwyn also expressed frustration at the 'snap-shot' methodology acknowledging that a longitudinal study would uncover a richer mine of data (Cranmer et al, 2008, p. 41). The landscape and the technologies will continue to change and children's practices will evolve and mutate. I can only hope to have captured a snapshot (albeit a digital one) of children's Internet use during the time in which I collected the data. The scope of ICT usage by young people is vast, representing a much broader range of people than those represented by respondents in this study. It is also a rapidly changing, mutable area and one which is extremely time-sensitive when it comes to research, as the technologies and practices evolve and change rapidly. I started from a position of examining the Internet practices of year seven children. Using a range of research techniques, I explored their in-school and out-of-school contexts and learnt that although there were many similarities, there were also sometimes surprising differences in practices, and as educationalists we could learn from these.

Certainly, I believe that policy makers should take children's out-of-school practices more seriously and use these to develop in-school learning opportunities that are relevant to children's actual experiences and capabilities. As Leadbeater says, "An integrated curriculum policy would focus on how schools interact with families, including learning supports at home, working on raising family aspirations for learning " (Leadbeater, 2008, p. 147). There also needs to be relentless, continuing revisiting of the area by researchers to ensure that the non-formal and informal practices are understood in terms of children's learning. In 2008, a CIBER briefing paper from UCL reported, with very high confidence levels, that children's information literacy had not improved with widened access to technology; they had a poor understanding of their information needs and found it difficult to assess the relevance of information retrieved from the Internet (CIBER, 2008, p. 12). Issues such as these present additional challenges for educators. There are implications for policy makers and parents as well. Marsh's call for the transformation of literacy practices through new technologies (Marsh 2008) and Byron's call for greater awareness of digital safety issues (Byron, 2008) points the way for future research in these areas.

In the context of my professional work, the outcomes of my research have made me more aware of children's practices and will inform my future strategic direction for the provision of relevant and empathetic Internet experiences in our formal learning spaces. I reflected rhetorically upon the children who participated so generously in this research and wondered what their future will be like and what types of people they will be.

The subtitle of this study, "the coherence of the inchoate" (Alvarez, 1972, p.254) is appropriated from a book on modern culture by Alvarez, but I have used the phrase for my own purposes. www.wiktionary.com; defines coherence as sticking together and inchoate as beginning but not yet fully formed, which captures for me in an attractive way the immature, yet developing and evolving Internet practices of children in ways that make sense to them. For me, Internet practices are perpetually both inchoate and coherent. Children's use of technology will help determine the shapes and cultures of the world. In their way, they are leading practitioners of ICT and although we do not know what the world will look like in the future, it can be reasonably asserted that children's evolving technological practices will help determine it. We would be wise to understand them a little better.

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