Editorial Ramblings
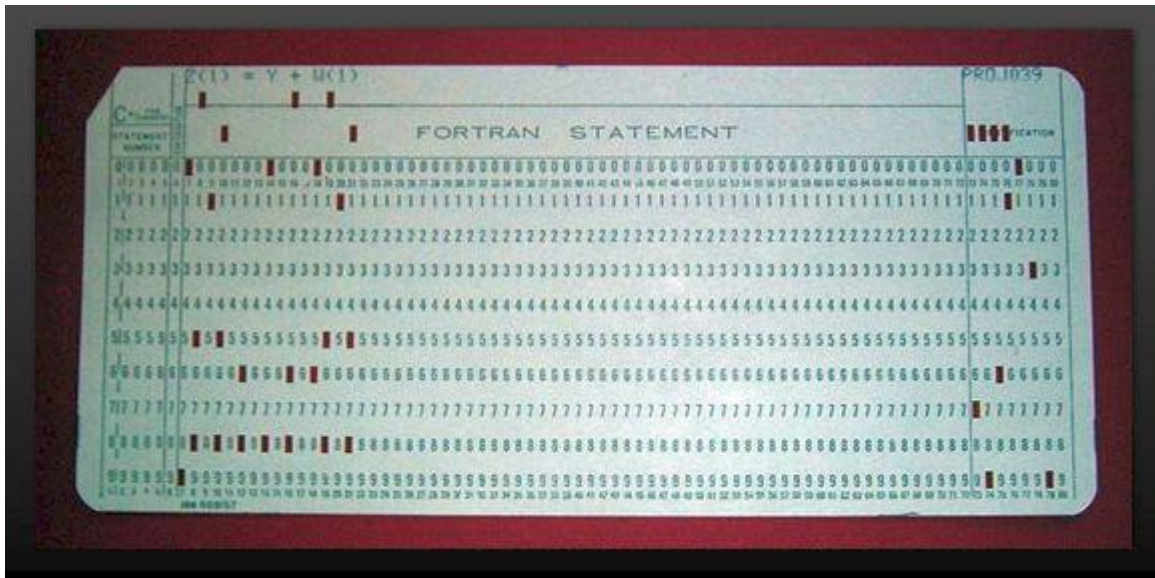
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The future of ICT?

In which your editor reflects with sorrow on the current state of English education policy while marvelling at the excitement, innovation and sheer ingenuity in the use and application of ICT and computing demonstrated by our contributors.

So, what does this issue of Advancing Education bring? Ian Lynch explores learning through the use of digital technologies for real and professional purposes and usefully reminds us that, *"Technology is a human construct drawn from science, arts and invention"*. We further focus on the role of online learning, with Christian Smith's paper on online learning as both a learner and leader while Noreen Dunnett considers whether the Twittersphere is the new VLE as she reports on the use of Twitter with ITT students. Dr Helen Boulton reports on another project with trainee teachers to develop technology-based practice within core subjects and to encourage reflective and collaborative practice.

Back in the classroom Steve Bunce explores the role of knitting and its relationship to programming while Mark Baker offers his thoughts on the Victorian classroom compared to its modern counterpart and Glenys Hart considers several freely available tools for supporting literacy in her article, *"Words and Pictures"*. Mark Baker, in a second paper, offers his thoughts on copyright issues in schools and the launch of copyrightandschools.org - essential reading. Meanwhile Nick Goligher reports on RiskIT at Bangkok Patana School. We also have our usual sponsoring partner papers with contributions from ConnectED Services Ltd, NEC and Capita IT Services Ltd.

The strength of all of these projects is that they exploit the potential of a range of ICTs for

learning, using ICT as a facilitator, a tool for learners to develop knowledge rather than simply a delivery tool for a mountain of pub quiz 'facts' as seemingly demanded by parts of the proposed national curriculum for England.

So, what can be said regarding these new 'back to the future' curriculum proposals, the outcome of rather secretive dealing with minority interest groups, resulting in a proposal to replace ICT with a potentially narrow and highly technical Computing curriculum that meets the needs of who? Not most learners nor the overwhelming majority of employers in my view. Not that we should be surprised. If history can be reduced to dates, monarchs and battles and geography to capes and bays then why not try to reduce ICT to binary numbers and coding in temporal languages – learn your facts and repeat in a three hour handwritten exam, job done.

But, what about the majority of our learners who, while certainly needing an understanding of computational thinking, how computers work, networking, data storage and suchlike won't go on to study Computer Science at KS5 or HE? A narrowly focused KS3 curriculum based solely around the current interpretation of Computing will not provide our young people with essential knowledge and understanding of online safety and security, online communication skills, knowledge of how business uses ICT from marketing to online trading and management. Neither will it allow the development of essential skills of problem solving, creativity, design and cooperation that modern employment demands. A narrow, uniquely academic yet strangely utilitarian approach to education backed by sudden death exams based on regurgitating 'facts' does not raise standards, but then we will learn that the hard way if these proposals go ahead.

There is a small window for consultation (though the government lexicon defines this word differently from the rest of us) so we have one last chance to make our case.If enough of us shout loud enough we CAN influence the final content of the Programme of Study. So I urge you to go to http://bit.ly/XiQY37 and download the consultation Word doc (unfortunately the concept of an online form is outside DfE comprehension!), and also contribute to the Naace response at http://bit.ly/UbSmCC or by emailing jan.webb@naace.co.uk. Make your voice heard.

If that fails there is still scope to develop schemes of work that do meet all needs, especially in primary schools. Look carefully at the final bullet points in the draft phase PoS – they embrace all that we currently understand as ICT. While less clear for KS3 the same potential exists. Remember also that the PoS is a minimum only and OFSTED is very clear about the range and quality of ICT that they expect to see.

We owe it to the young people of England to do so. So, to paraphrase the emotive language of Churchill:
"We shall fight in the schools, we shall fight on the political playgrounds, we shall fight in the classrooms and in the streets, we shall fight in the colleges; we shall never surrender, and even if, which I do not for a moment believe, this subject or a large part of it were subjugated to

narrow dogma, then our teachers, learners and partners, armed and guarded by Naace and its allies, will carry on the struggle, until, in good time, the young learners, with all their power and might, step forth to the rescue and the liberation of the curriculum."

And so finally, what did you make of this year's BETT show? Something seemed missing to me, on the train home, in the gloaming somewhere near Basingstoke, it came to me. I was missing the old core of BETT, the expectations of a ministerial announcement, the excitement of new (and government funded) learning and teaching initiatives, the buzz as such new proposals and developments were promoted and discussed. But, as they say, priorities change, nostalgia is not what it used to be and this year much of the innovation and excitement came from schools themselves through presentations and demonstrations, both on the exhibition floor and in the Naace organised Learn Live seesions in the seminar rooms. And that is how it should be – good practice develops in schools and classrooms and cannot be dictated by agencies and government policies. And that has to be a good thing.

There is a wealth of outstanding practice out there, technology is intrinsically intertwined with society, its use is both powerful and relevant in learning so, let's keep fighting our ICT corner and don't let anyone, least of all politicians, get you down!

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The opinions expressed in this editorial are those of the editor and do not necessarily reflect Naace policy.

Learning through the use of digital technologies for real and professional purposes

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Abstract

Technology is a human construct drawn from science, arts and invention. One of the key purposes of technology is to make tasks easier. This means high quality results can be achieved at much lower cost, short-cutting the need to acquire complex skills sets such as controlling a pencil with the precision needed to draw with great accuracy. Whether

it is publishing a book to a professional standard or composing music with an accurate score, technology enables children to achieve results that would formerly be the domain of professional adults. This paper considers the potential for the use of digital technologies in motivating learning in a range of curriculum contexts through its capacity to enable learners to produce professional results that would previously have been the domain of commercial companies.

The disruptive nature of digital technologies

"….market disruption has been found to be a function usually not of technology itself but rather of its changing application" (Wikipedia).

There is no doubt about the impact of digital technologies in changing the consumer and business sectors. It is self-evident from simple observation of the world around us. Publishing is in a massive revision with the future of newspapers and printed books increasingly uncertain. The music industry has transitioned from vinyl records to cloud delivery in the space of less than 40 years with tape, CDs and mp3s along the way. A child can produce a professional music score from a composition without knowing how to read music. Digital recording studios charge tens of pounds per hour rather than thousands and distribution is low cost and without any loss of quality. The entire commercial basis of "intellectual property" is under threat and live performances are becoming more common as a result. It is the age of crowd-sourcing and the grass roots bazaar as opposed to the cathedrals and high priests determining what is good for the individual. This seems to be the new way, everywhere except in education.

Social and technological change in schools

So to what extent have these social/technological changes affected schools? Certainly there is some impact in terms of the use of technologies to support learning. Data projectors in classrooms, use of mobile technologies and widespread access to the internet. But has it had the sort of impact on learning that we see in the publishing and music industries? It seems not. Schools do not have the mechanisms for consumer power to affect them at grass roots level. There is evidence of impact on learning e.g. Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies but it is often tempered by caution about validity of results. There seem to be few properly conducted studies of the type that would really demonstrate a clear causation link between using digital technologies to support learning and attainment. Perhaps this is unsurprising given that key attainment measures are simply what is measured in a paper based exam system. Why would we expect digital technologies to make much difference to such systems? Certainly these exams tell us little about practical skills in digital technologies. We end up with a self-fulfilling prophesy if "fast neat handwriting" is a limiting factor in a written exam and students end up doing this less efficiently because they used computer keyboards and had less practice in writing by hand leading up to the exam. Of course this calls into question the fundamental validity of the

measurement in a world where virtually no-one write extended work by hand except in formal examinations.

In a verbal world all examining would be done through interviews and voice recording. Why bother learning to write if it is not needed in the assessment? No doubt verbal articulation would be a lot stronger than it is now if all assessments were orals. In a digital world assessment should routinely involve digital media since it is simply a reflection of how that world operates. The technology is now widespread, it is the social and cultural dimension in the formal education system that is lacking. Those at the top of the decision making tree are not best placed to drive change. They gained their power through an education system much as it is now and they consciously or unconsciously strive to preserve what was good for them. We have a system for preparing the next generation of politicians and civil servants rather than the entrepreneurs and practical doers that generate economic wealth. The choice of the consumer is far less influential since most of education is based on what people at the apex of the pyramid believe is good for people below them. This starts with politicians and filters its way down through the DfE, its agencies, school senior leaders through teachers and finally to students. If this was selling telephones we'd probably still be wired to walls in houses with a few innovators battling to get people to understand why a smartphone was relevant never mind potentially revolutionary.

Successful support from cross-curriculum digital technologies

It is difficult to see how any of the subjects of the mainstream curriculum do not lend themselves to routine use of digital technologies. If we take art, contemporary technologies have to be reflected in art for the subject to make any sense. Art portrays the daily lives of the people in their time and culture and today's technology is part of to-day's culture. We can use similar arguments in every other subject. We should not need to make arguments about technology providing effective support for raising exam attainment, technology should be present simply because it is relevant in all subjects in to-day's society. If that is not reflected in the curriculum then it is the curriculum that is at fault not the technology.

Cross curriculum technology is often seen as the problem. The school system is so entrenched in compartmentalising learning in silos that reflect academic specialism that it is not seeing the wood for the trees. Cross curriculum technology is the solution, not the problem. If we want schools to better support employment and to better reflect the world as it is, there should be far more, not less, multi-disciplinary project based learning. The real issue is staff development and reform of the curriculum. Look for opportunities where young people can usefully contribute to society and learn at the same time. A project that is genuinely useful to other people will motivate a professional approach because there is a real reason to be professional and digital technologies enable young people to produce work of this standard.

Examples

Here is an example of a 15 year old student's work. He was commissioned by a professional music group to produce a video to help promote their latest track through a YouTube video. The student had to learn how to use a 3D animation program and acquire a number of other technical skills. He learnt about the content of the song, issues related to globalisation, geography and ethics. See the video at http://bit.ly/vXYLiE

This is obviously a bright, able and motivated student, the type that will get channelled into an academic curriculum with little scope to show practical skills. We can argue about definitions of digital literacy and the value of IT versus computing but in the end this is fiddling while Rome burns. Ask the students what they want to do, what will motivate them and why. Give them the freedom to experiment and the examples to aspire to.

Another initiative along similar lines is GEBOL, "Getting European Business On-Line". This project is co-funded by the European Union Lifelong Learning Programme through its Czech Republic national agency. It aims to provide opportunities for young people in pre-vocational education to design and implement web sites for local businesses. This means that local businesses that do not have a web site and do not know how to go about getting one, can have it done for them providing meaningful work experience for the student. A real project with a real customer is more likely to motivate students to take care with literacy because they know their web site will be there for all to see and their customer is not going to accept spelling mistakes of grammatical errors. They might need to originate graphics, music, video and they will learn about security and aspects of the business they are supporting.

Finally, the OpenStreetMap involves tens of thousands of volunteers from all over the world building a resource similar to Google Maps but that is freely editable in the style of Wikipedia. Schools are taking part in the project to learn about geography, history, mathematics and IT. Literacy is supported by providing documentation. Again this is a real project of global significance. It is not a simulation or exercise. Students are far more motivated when the results of their work appear as professional contributions in really useful projects.

It might be thought that this type of work is now sidelined by the changes to the qualifications system and the removal of many vocational qualifications from the school headline league tables. In fact all three of these examples support qualifications that are eligible for headline league table points in 2013, 2014, 2015 and beyond. The activities have the potential to increase motivation and to provide opportunities for strengthening learning in most other

subjects and therefore they can add value to them without detracting from the time allocated to the subject.

Conclusion

Even with the current constraints, there are many opportunities for good education. It might not be ideal but digital technologies are an essential part of any curriculum and we need to use them for more imaginative and motivating learning contexts as the tools make it every easier to produce useful products and services to the community.

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Promise and pitfalls for pi-fans

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There is no doubt that the landscape is changing in terms of the place of computer science in schools. In many schools, for the first time in years, teachers are thinking about how they can teach programming, what equipment they should be utilising and what skills they need to put together an effective offer to students. Ed Walsh explains current thinking emerging from Cornish schools.

There is no doubt that the landscape is changing in terms of the place of computer science in schools. In many schools, for the first time in years, teachers are thinking about how they can teach programming, what equipment they should be utilising and what skills they need to put together an effective offer to students. In Cornwall we have an informal group called the Cornwall Digital Technology Education Programme (blog: http://cornwalldigitaltechnology.blogspot.co.uk) which provides a forum and support for teachers keen to strengthen their offer in this area of the curriculum. This was inspired by the interest generated by the launch of the Raspberry Pi and fuelled by frustration both in commerce and education that software creation, as opposed to consumption, was conspicuous by its absence in the school curriculum.

What has emerged from various network meetings, discussions with individual teachers and investigating various equipment and materials are the following questions. None of these is a total blocker but if these are effectively addressed, preferably at an earlier stage, things seem to fall into place rather more easily.

When we get students in front of the kit, what are we trying to achieve?

What are, if you like, the intended outcomes from lessons in computing? What are the particular skills, general practices and overall understanding that are being aimed for? Talking

to professional programmers it's not only their specific technical skills but the wider aptitudes that are impressive. They're not only capable of writing and testing programs but also, for example, coping with ambiguity in a design brief and networking with colleagues to find solutions. As one of them said to me "We're problem solvers; that's what we do all day long – solve problems." Is teaching the use of an 'If...then statement' the same as teaching problem solving, can teaching that addresses the former also cover the latter and, indeed, can the latter be taught at all? My view is that students can learn how to get better at solving problems and that it needs the right kind of teaching, often with an emphasis upon challenge and groupwork.

As far as the hardware goes, we've had some very interesting discussions about using Raspberry Pi itself. Some colleagues in schools have argued that it adds little except complexity and further expense, whereas others have pointed to a number of strong teaching points, such as it not launching a GUI by default and (as long as it's housed in a transparent case) it being clear that a computer is a circuit board with components. In fact, in this case, it's not a very big circuit board which encourages a wider range of applications to be considered.

The important thing is for the curriculum development work to be outcome led rather than activity led.

What's the best way of designing an effective session?

What kind of lesson most effectively supports students in acquiring key skills and aptitudes? As well as being inventive about the equipment and applications we also need to be creative about lesson design. Consider these three possibilities:

- The teacher introduces and demonstrates a new feature of the programming language, which students then apply to a range of different contexts, for example, the elif statement in Python.
- The teacher introduces an existing solution, which students modify to improve it: for example students starting with a programme for the 'Snake' game, which they then modify to change the speed, colour, playing area, text, etc.
- The teacher introduces a challenge, which students then develop responses to, for example the teacher showing the students a picture of a pedestrian controlled road crossing and asking them to devise a control system.

Now, these are not mutually exclusive alternatives, neither is this an exhaustive list. A good scheme of learning is likely to include all these and more. The point is that there needs to be variety in the style of learning as well as the context to develop a full range of outcomes, and the teacher needs to be capable of changing the lesson design to suit the students. Many of us picked up programming ourselves by copying and modifying existing programs; we shouldn't assume that students necessarily learn most effectively the same way.

What are the most engaging contexts to use with students?

One of the key questions about teaching programming is the development of games. On the one hand it's possible to teach an awful lot of programming through games; apart from being an engaging context for many students, they provide a very quick feedback loop in terms of judging the fitness for purpose of a programme. Furthermore, games are big business and the UK has a major slice of the market (though, as the NextGen report pointed out, there's evidence of this slipping – one of the factors fuelling recent changes to the curriculum). However there are risks in identifying programming entirely with producing better games; attracting gamers doesn't mean you've got people who are capable of programming and non-gamers may get frustrated after a while.

Who is your digital technology champion?

In all the schools we've worked with on this there is, somewhere or other, what we might refer to as a digital technology champion. They might be in ICT, in Design Technology, Science or Maths; this matters much less than how they are approaching these issues.

- How is the impact of lesson design being evaluated? Success can't be defined as getting a Raspberry Pi to work (for example) but has to be in terms of student engagement and progress. Computer Science being a qualifier for the English Baccalaureate means that the associated progress and outcome data will be subject to a thorough analysis in the RAISE online data reports that are seen by (including others) Ofsted inspectors.
- How are technical issues with getting Raspberry Pi up and running being tackled? Internet access in a school context can be a minefield; we've seen almost as many solutions as there are schools. There are some very elegant solutions; one of our guys realised early on that as both the operating system and the programs sit on the same SD card, having one card per pupil (4Gb is a good start) is a wise investment. Any machine a pupil puts their card into, either at school or at home, becomes, in effect, their machine for the duration of that session. On the other hand, this has implications for network security.
- * Which networks of practitioners are being explored? There's an amazing array of support networks and sets of materials; good networkers can learn (and contribute) a lot very quickly. The community springing up is not only very diverse but keen to share and collaborate.

Where does it fit in the curriculum structure?

A decision may be made to offer, say, Computer Science as an optional subject in KS4, leading to GCSE. What skills base will this build upon from KS3 and primary? Will students be selecting this course on the basis of some insight into the nature of the challenge and opportunities it presents, and will they be developing an existing understanding further or starting from scratch (as opposed to, from Scratch)? What's happening in the KS3 course and how good is this at recruiting support as well as being meaningful to students that don't take it further?

Does the school have a curriculum led procurement policy?

Although I taught Microelectronics in the 1980s my more recent curriculum development background is in science; in this subject area there is, unsurprisingly, a strong link between the curriculum and equipment provision. If you're teaching Microbiology you need the equipment to grow cultures. Because of the recent emphasis upon programming there's a risk of a mismatch in Computing, exemplified by the recent trend towards wide scale provision of tablet devices. These are often really powerful tools of consumption but not of creation, or rather creation of content but not of structures. An iPad user can create ideas in an app but they can't use it to create an app.

A year ago, when we started this project, I hoped we'd have some answers. Instead, I think we've got better questions, though I guess that's not bad. I think we know more about where some of the answers might be. These are some of the seams we're digging away at:

- Getting hold of a Raspberry Pi and seeing how to set it up and what it'll do really helps to focus thinking. You need to be able to write the operating system to the SD card (for when someone wipes it) and you need some sort of internet access (so you can download programmes) however indirect. Be curious about what it will do and how to explore the operating system.
- Have a go at learning Python. This will run on a Windows PC if you don't want to use a Pi; there are loads of free online tutorials. One of the best sets of commercial materials I've come across to use with students are the Coding Club ones, written by Chris Roffey (www.codingclub.co.uk)
- Share some ideas with colleagues in other schools. Particularly at an early stage you can pick up a lot this way, as well as reassuring yourself that you're not the only one trying to deliver the undeliverable with little time and fewer resources.

Ed Walsh is Lead Consultant for Science with Cornwall Learning. He is working with teachers and representatives of the digital technology industry in Cornwall to share ideas and effective practice about developing the curriculum to enhance digital technology. He ran a workshop at BETT entitled 'Hands on digital technology' in which he explored ideas and experiences about using equipment such as Raspberry Pi computers.

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Online Learning as a learner and a leader: Learning while Learning

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"Virtual Learning Environments can help to enthuse learners, by allowing them to reinforce lessons seen in the classroom, catch up on missed work and improve their knowledge. However, Virtual Learning Environments are still in the early stages of development. More sharing of good practice amongst peers, collaborative working and further promotion of the benefits to learners will help develop the initiative more widely."

Her Majesty's Chief Inspector, Christine Gilbert: Press release: The virtual reality of e-learning 13 Jan 2009

What makes an Effective Learning Platform?

There are many theories and reflections on the success of learning platforms in an educational context. While the details and focus may change over time as technology and society changes, there are a number of themes that are consistent in many of them regarding the processes and the outcomes.

The recent (2011) report "Collaborate to Compete" by the OLTF[1] states in its introduction that "online learning – however blended with on- or off-campus interactions…provides real opportunity for UK institutions to develop responsive, engaging and interactive provision" (p3)

Whilst this report, published in Jan 2011, is positive in its attributions of online learning to attracting international and non-traditional students, it notes that in regards to e-learning "Technological change is rapid. Developing and adopting appropriate pedagogy for its exploitation in learning and teaching is less rapid, and the skills and organisational changes that are needed alongside this take even longer. Online learning thus presents challenges on many fronts." (p4) and suggest six recommendations to better meet some of these challenges for students and learners.

While not new, the six recommendations[2] are important messages for educational establishments. In my previous role as LP co-ordinator for a London Borough, I have been able to experience and support a range of schools implementations that have both succeeded and failed dramatically. In almost all cases of failure it has been because one of the six core actions of the OLTF report are missing or ill-prepared for.

The OLTF report shares many similarities to Sharples et al's "Theory of Learning for a Mobile Age" (2007), which puts those focus clearly against the benefits that a model of e-learning can provide to an educator and learner.

"a theory of mobile learning must therefore embrace the considerable learning that occurs outside offices, classrooms and lecture halls…almost half (49%) of the reported learning episodes took place away from home or the learner's own office" Sharples, Taylor and Vavoula (p2) (2007)

This too matches to experiences in the classroom and of my own experience; that much of the learning and development of knowledge doesn't happen in the predetermined online activities, but in the real world where those theories can be put into action and development through understanding and application.

Schools leaders found the concepts and benefits of e-learning platforms to be hard to conceptualise if they had no practical experience themselves (particularly when faced with dwindling budgets versus yearly subscription costs for such a platform). But when the four core concepts used by the US NRC[3] (as well as educationalists like Sharples et al) tied to recommendations by OFSTED the benefits of a such a model became much easier to not only understand, but to tie into whole school existing visions, plans and priorities for learning and teaching in the 21st Century.

One of the significant challenges in developing any understanding of the pedagogy of learning platforms is the ever-shifting landscape of the tools and environment in which we are developing learning and how the technologies outside of the educational environment are altering the way in which learners learn and experience content as well as the rate of change and adoption.

"We are now seeing a well-publicised convergence of mobile technologies.... combining into a single device [and an] important convergence..between ..personal and mobile technologies and .. conceptions of learning ….

New Learning	New technology
Personalised	Personal
Learner centred	User centred
Situated	Mobile
Collaborative	Networked
Ubiquitous	Ubiquitous
Lifelong	Durable

Table 1 Convergence between learning and technology"
Sharples et al, (2007) p3

When Sharples et al wrote *"A Theory of Learning for The Mobile Age"*, the iPad (one of the key convergence devices they talk about) was 3 years from release and broadband changes were just starting to take hold. However it is in the changes to behaviour and technologies that school leaders are challenged to keep abreast and ahead of.

While reports such as Crabtree et al (2003) identify 90% of young adults owning a mobile phone, OFCOM in *"A Nation Addicted to Smartphones"* (2011)[4] identify now that 90% of ALL people own a mobile phone and 47% of teenagers now own a "smart phone" (another of Sharples' convergence devices) and 60% of users self identifying themselves as "addicted". With these figures being shared with schools and leaders across the country, why do we continue to insist that online learning in an educational environment will favour a "desktop" approach and model?

And yet, despite these staggering numbers, the report also notes that less than 1 in 4 of under 18 users (and just under 1/3 of 15-16 year olds) use these tools and online time to engage in "advanced and

creative" applications such as blogging, creative content and sharing of resources, whilst 57% of them engage in social networking sites and forums.

This report challenges us as educators in many ways. Particularly in the way we assume children access content and resources, effectively banning one of the most popular tools for communication in schools (mobile phones) and actively moving away from more "social" aspects of learning platforms because of the difficulties and dangers involved in using them as a teaching tool.

It is within these changes that educational establishments are challenged to develop e-learning activities and content that challenge and exceed not only the requirements of the syllabus but those of the expectations of users in comparison to other online tools that may be used in "real life" such as Facebook, Twitter, YouTube and Wikipedia, which support the social constructivist model of shared learning and understanding and the development of a learning community is as vital to the learning experience as the content that is being learned.

It is this social constructivist model that Palloff and Pratt identify in "Building Online Learning Communities: Effective Strategies for the Virtual Classroom' (2007)

"Key to the learning process are the interactions among students themselves, the interactions between faculty and students, and the collaboration in learning that results from these interactions. In other words, the formation of a learning community through which knowledge is imparted and meaning is co-created sets the stage for successful learning outcomes." Palloff and Pratt, 2007 (p4).

Palloff and Pratt identify the changing notions of building communities as an agent of delivery and change as a *"key to successful online learning"* (p4).
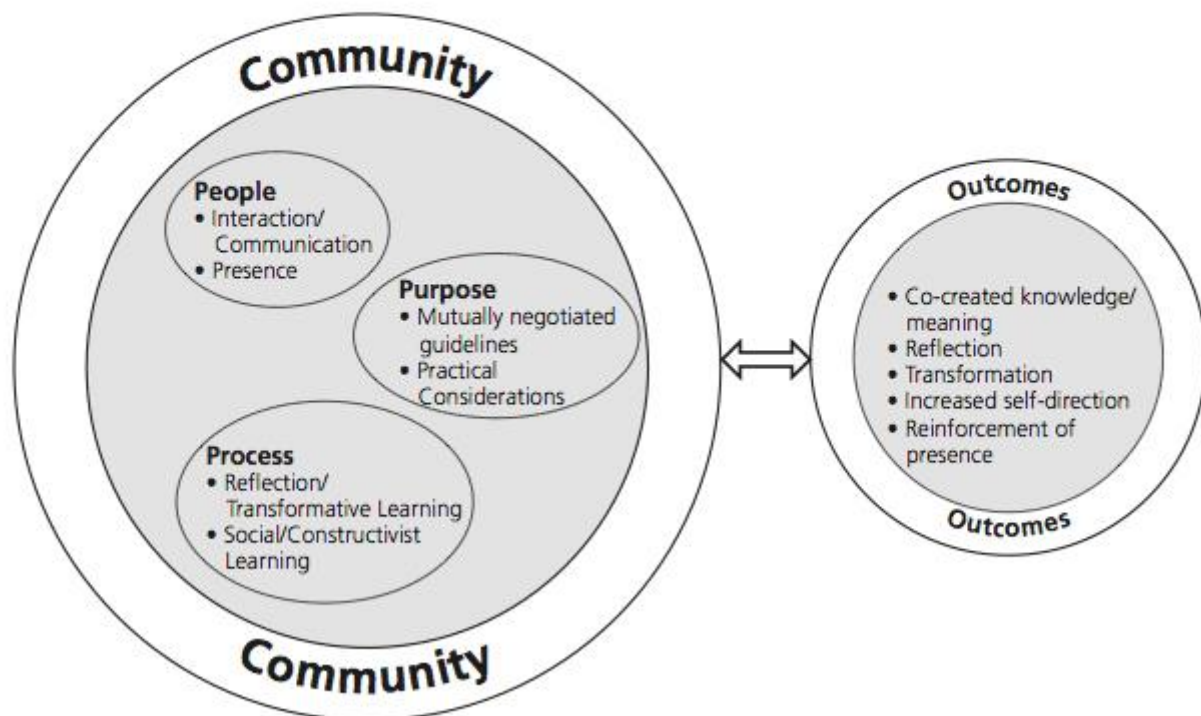
They assert that not only are tutors developing progressive learning activities, they are also responsible for framing content into ways that give opportunities to develop individually and as a collaborative cohort of shared experience and learning. But not every educator may be willing or able to do this. This is reflected in the later findings of the OLTF's report that identified training of staff as one of the key factors in success of any roll out of a LP.

"Just as all instructors are not successful in the classroom setting, not all will be successful online. It takes a unique individual with a unique set of talents to be successful in the traditional classroom; the same is true for the online classroom. The ability to do both is a valuable asset in today's academic institutions."
Palloff and Pratt 2007 (p9).

Palloff and Pratt bring together many of the concepts from across a range of papers into the model "Elements of Community Based Learning" identifying that *"interaction and collaboration are critical to community development, without them, there clearly would be no community"* Palloff and Pratt, 2007 (p18).

Exhibit 1.2.
Elements of Community-Based Online Learning.

Community

People
- Interaction/ Communication
- Presence

Purpose
- Mutually negotiated guidelines
- Practical Considerations

Process
- Reflection/ Transformative Learning
- Social/Constructivist Learning

Outcomes
- Co-created knowledge/ meaning
- Reflection
- Transformation
- Increased self-direction
- Reinforcement of presence

Outcomes

Community

It is this social-constructivist learning model that underpins their entire thesis, identifying that for any process of online activity to be considered successful *"the group works together to actively create knowledge and meaning"* (p18).

As they continue to note, it is not just the learners that have a responsibility to facilitate communities and sharing, but those of educators, in the development of the course, to create opportunities and activities that foster these social aspects as well and that an over restrictive, isolating series of curriculum activities can be as damaging to learners and potential communities as providing too little structure and process in the learning model and
"through the development of the course itself, use of collaborative assignments, facilitation of active discussion, and promotion of the development of critical thinking and research skills. The outcome is an environment rich in the potential for collaborative learning and the social construction of meaning, as well as transformative learning and reflective practice"
Palloff and Pratt (2007) p19.

While many establishments choose to adopt e-learning models with the best of intentions, to allow any time access for students and educators to discussions, content, materials and experience, the failure of such adoptions can be just as harmful to users as the successes can be a springboard to learning.

Academics and researchers such as McPherson et al (2002) recognise the values of e-learning but specify the need for frameworks and evaluation models such as Al Rawas (2001) as a critical element of success. However they are careful to note that an understanding of the concepts and frameworks alone is insufficient to support a fully sustainable and self-sufficient model for success.

McPherson and Nunes workshop *"A Framework to Support eLearning Management"* at the ICEE[5] and subsequent paper from that session identifies five Critical Success Factors (CSF) that identify the processes required to facilitate a successful e-learning implementation.

The five factors (Organisational Context, Enabling Technology, Curriculum Development, Instructional Design and Delivery) provide a clearly defined baseline and focus against which centres can develop a structured and measurable model for evaluation of an e-learning implementation.

My Experiences and Reflections: Learning while Learning

Nipper (1989) described the successful learner in an online environment as a *"noisy learner"*, one who is active and creative in the learning process. Palloff and Pratt 2007 (p8-9)

As someone working full time, the ability to take out time to gain any post-graduate certification would have involved a sabbatical or a series of night classes. The decision to engage in a course as a "distance learning" option significantly altered my ability to engage with the course, tailoring it to my own schedule and commitments changing the potential learning and contribution to the course.

The use of combined synchronous (through Adobe Connect) and asynchronous (through Blackboard) elements of the module, to deliver, support and enhance learning, allowed me to choose when to access my studies at any time and from a variety of locations (including offices, internet cafés, hotel lobbies and train platforms using desktop, laptop and mobile iOs devices) and connecting using both broadband and mobile connections. It was during this module that I engaged with the term "anytime-anywhere learning" and appreciated the ability to do so to engage and interact with my cohorts.

The mobility of access was considerably empowering and allowed me to engage much more than I anticipated, I found it increasingly hard to commit to the "scheduled" sessions and the expectations of work done and posted through the message boards.

While the remote aspects of Adobe Connect had issues (see later commentary) the lack of strategic decision by the institution to not upgrade Blackboard servers to allow the Blackboard App for IOS to access the data, did make accessing the asynchronous content and activities much more problematic and restricted to only those mobile devices with a large and clear screen such as iPad rather than smartphone.

Even though the content of any e-learning module are the key Enabling Technologies, how learners were able to engage, contribute and develop with the learning and community were critical in the success of its implementation.

As noted, the lack of connectivity between the University Servers and the Blackboard app limited me in how I could connect to the asynchronous content, the Adobe Connect app was significant in allowing me to continue to be part of the learning even outside of my usual environment (and in two cases, country).

While there were significant benefits in developing the community and my own learning, there were conversely significant issues with the app, which limited some of my own functionality as well as ability to fully participate in ways in which I would through the desktop interface.

During all of the modules over the last two years, general practice involved smaller sub groups discussing a wider issue and then feeding back to the whole. In the desktop interface, this was achieved through breakout rooms. However in the app, this action caused the app to either crash, or for me to be left in a room on my own while everyone else was in sub-rooms.

Whilst the tutor was quickly able to change the way sub-groups moved (keeping one in the main room) this was the sort of unintended learning and changes to procedure that emerging technology on a converged device was causing without planning for it.

Even though the interface in the app was familiar, and offered much of the desktop functionality that was key to our experiences and activities, certain tasks were made more difficult because of the limitations of the app version; in particular the ability to multitask.

As a group, we were usually expected to take roles of group leader or note taker on a regular basis. Because of the lack of multitask features (having to move from one screen to the next to note take and watch the conversation thread) and an interface that requires 3 clicks to post a comment, both these roles were incredibly hard to undertake with any efficiency. On many occasions, I found myself in an area missing important conversation happening in another or focussing on conversation and missing the overall notes and linking structure. I found myself limited to the role of passive observer, watching conversations happen and unable to fully participate and engage in any meaningful way, not because I didn't want to, but because the technologies were disenfranchising.

While this sounds like a negative experience with the tools, the benefits of being able to connect with the group and my on-going learning through a mobile device outweighed the technical issues. Indeed, without such mobile options allowing me to engage with the discussions, I would have found myself far more disengaged, both with the group and with my learning. Consequently, the issues gave me another perspective on the challenges of mobile technologies and e-learning pedagogy.

The combination of the VLE tools in a desktop model afforded us a learning community a wide range of tools and opportunities to communicate and share in real time and in a more measured and thoughtful approach through the message boards. As a Mac user, I found no significant difference between the Mac and PC interfaces and was able to connect using any range of devices as long as I was able to recall my web address and login details, again, benefitting the nomadic nature of the last 9 months.

With these experiences, and considering OFCOM's information and projections for digital take-up and mobile "smart" technology use, I am becoming more aware that the next few years has the potential to become a watershed period for the development of technologies and in particular the way in which "mobile" and "static" models will need to be less differentiated, taking models of tools such as Facebook and Twitter which offer similar mobile and desktop experiences as good practice.

Key to the success of any course and the engagement of any learners is "what" is being taught to them. This Curriculum Development Model taking the intertwined elements as a key factor for success can be identified using McPherson et als four key objectives.[6]

However the curriculum content cannot be evaluated and reviewed in isolation without reference to the delivery of those activities. For this reason, both Curriculum Development and Delivery with be referenced as interdependent criteria.

The use of the learning platform as opposed to more traditional methods such as textbooks and lectures, allowed me as a distance learner, to access my learning at any time. To drop in at appropriate moments to gather readings, forward plan the next seminar and to reflect back on earlier activities and make connections between sessions. This empowerment to control my own learning and understanding at my own pace and time was critical in matching my use of the platform to my own learning styles.

The structure of the materials through the Learning Platform used a range of tools such as video, text, practical activity and audio allowed for a combination of learning methodology to be implemented. Except it was the learner (me) making those choices rather than it being imposed by the tutor. This combination of methodology, both synchronous and asynchronous, while structured and modelled was flexible enough to fit with my own lifestyle and priorities, without setting a rigid imposition of expectation and criteria check-lists.
Even though there were distinct content differences between all four of the modules, the underlying variety of activities as part of the learning model showed little variation across them all.

While the Read, Review, Respond activities were useful in allowing us to share understanding and critical analysis, the number of times these were repeated with minimal feedback for some users, made them became a solo task rather than something that was a starting point for discussion. Key to this was a disparity where the lack of feedback for some users, while other got dozens of responses from the same community members caused me to find more purpose in the readings but not in the responding (which tended to be ignored).

What was interesting in this pattern, was that it tended to be the non-native speakers and those who were based at the University who tended to respond to each other almost exclusively. While I am sure this was unintentional, and more a matter of smaller sub-communities building, once noticed, it made people like myself, who were feeling already slightly disassociated from the group even more so when work was posted and rarely responded to.

This isolation was one of the challenges faced with the distance learning model and while the asynchronous activities allowed users to share thoughts, and the weekly seminars allowed us to discuss wider issues as a group, there were little opportunities (both planned or otherwise) to work collaboratively as a group on a single outcome.

During the previous module, we were offered this opportunity, to develop and present a group presentation during the final weeks of the course. However, this activity soon became fraught with issues, both logistically and technically and impacted the overall effectiveness of group learning and dynamics:

1. While much work was put into presentations by some students, the presentations themselves did not "count" towards the overall grade for the unit or for any value at all. Because of this, despite hard work being put into it, the final assignment was a higher priority.

2. The benefits of such a diverse group are well noted, however, the logistics of working together collaboratively on a single document with 4 different time zones involved was challenging. This led to 5 pieces being developed separately, within parameters and combined by a group leader.

3. Language and understanding was a key barrier to effective learning in our group, with native and non-native English speakers, some students were unable to understand the activity, others unwilling to add audio narration, or others simply not understanding what was required of them for the whole group. Because all of this was being done virtually, it added a new level of challenge to group leadership and moving the task forwards effectively.

4. Despite all these challenges, we were able to produce a suitable video clip to share, however the pedagogy of the presentation session had not considered the technological aspects. With such a diverse range of responses, the expectation to "show and tell" which would have worked in a "real world" seminar room where everyone was together, fell apart very quickly, with issues of sound, multiple narrators, incompatible video formats etc. all combined to cause the session to not provide the outcomes that were expected.

5. Interestingly, taking this experience, I did a similar activity with trainee teachers and asked them to share the videos in an way that users could go and watch at their own time and then respond and ask questions in the chat rooms later proved more effective and gave learners a chance to think about what they'd seen as well as how it was presented.

This activity, while not providing the expected learning outcomes, was valuable for me as an example of transferrable pedagogy, and considering how an effective activity in a classroom environment may not always translate into an excellent activity for a distance model. This is a challenge that I now am able to set for teachers as part of the transition to an e-learning model, considering how pedagogy may need to be changed and reinforced in different ways because of the model of delivery.

While the model of delivery can have its inherent difficulties, sometimes it offers a huge ability to engage and transform learning in unexpected ways. Message boards, forums and wikis were something that as a community we did not seek the full potential of as part of our learning toolkit, focussing on using them for pre-planned and structured activities. There was little evidence of them being used for "off topic" discussions or sharing of hints, tips and case studies, or even for developing collaborative outcomes or models of research.

Given the wide range of experience and learners in the group, we never found ourselves using these tools to share thoughts and discussions as we went along, a shared blog of our experiences could have challenged us and provided another outlet to bring us together as a community of learners.

"Furthermore, society, particularly in the form of industrial employers, are demanding that graduates should be provided with a very different skill set than was previously acceptable." McPherson 2002 (p8).

The blended model was a model that provided a range of opportunities for communication, collaboration and practical demonstration of the theories in which we were working. The content provided, as a spine for learning, was clear, concise and progressive, though had heavy reliance on paper-based reports and research. Though more practical pedagogy and implementation was supported by multimedia and real life exemplars of e-learning models which was useful in moving towards a more relevant series of examples that could be shared and experienced outside of the traditional model of curriculum planning.

Despite an interactive and electronic format for learning being provided, there continued to be a "traditional" approach to the assessment of each unit, focussing on a single referenced theory heavy essay produced after all of the learning is "delivered". Which does not fit the models of learning being studied or the on-going narrative of the learning that is being encouraged and is being reflected in Key stage 4 planning; significant numbers of schools are opting to deliver more practical based ICT Qualifications in Years 11 and 13 over the Traditional GCSE pathways[7] that assess through examination and essays. This learning style and expectation by students for a more "ongoing, active and reflective' learning and assessment method will impact HE and FE institutions as those pupils progress with their learning.

Alongside the curriculum development and delivery aspects of McPhersons model, she also identifies that Instructional Design which focuses on the learning needs and methodologies can also be key in the implementation of a Learning Platform. As a kinaesthetic learner, I found it much easier to learn and contextualise the knowledge, when I had practical examples to illustrate concepts. When practical experience was built into the activities, I found the learning engaging and challenging, but was able in much more clarity to see a direct implication in my work of the theoretical concepts.

Conclusions

Where Next? Putting Education into Practice...

While all of these factors suggested by McPherson support and guide the evaluation and reflection of a successful Learning Platform Implementation, it became apparent that a single thread ran throughout my entire reflective process.

These **Social Imperatives**, (also noted by Palloff and Pratt) are key to developing the concepts of collegiate working and community that will underpin any e-learning model.

I have already noted the differences between some groups in the way that they responded to each other through the RRR activities, there was a distinct and noticeable difference between those based at the University and gaining face to face regular meetings and those who have never met each other face to face. Within the online groups (which changed slightly between modules), while there was general camaraderie, I felt no bond as a group of learners that you would feel after 2 years in the same classroom. Indeed, after 2 years of learning, I know no-ones surname or any details about their lives outside the 1 hour seminar we shared. Whereas students who saw each other regularly around the campus seemed to have a more friendly and connected relationship with each other that was visible even through online conversations.

Could attempts have been made to force closer working? Perhaps. But as Tuckman (1965) identifies (and is referenced by Palloff and Pratt), a community does not just happen, but needs to go through stages of development known as "forming, norming, storming, performing and adjourning"

"First, people come together around a common purpose. This is the forming stage. Then they reach out to one another to figure out how to work toward common goals, developing norms of behaviour in the process. Not uncommonly, conflict may begin as members grapple with the negotiation of individual differences versus the collective purpose or objective (storming). However, in order to achieve group

cohesion and to perform tasks together, the group needs to work through the conflict. If attempts are made to avoid it, the group may disintegrate or simply go through the motions, never really achieving intimacy." Palloff and Pratt 2007 (p36).

As a group of disparate learners, spread over the globe just as widely as we were in our experiences and priorities, I saw no evidence of us getting past the conflict stage, sidestepping it and developing as a community of individuals rather than a cohesive collaborative whole.

Was this a failure of the course or the technology? Unlikely, but as a practitioner using e-learning to deliver my courses, it makes me realise just how fragile these groups can be and how valuable the social aspects of online learning are in building a successful learning community.

We can build any number of amazing, interactive environments, but unless they are populated and have purpose, they will just wither and die.

This is not just an educational "learning platform" issue, examples such as iTunes Ping, Google Plus, MySpace, Friends Reunited all showed technological improvements on what came before, but when the community shrinks or never arrives those sites have faded from the public consciousness and are relics of a technological societal change.

As educators, we must focus on the learning and development of our students to fulfil the obligations of our syllabi; it is the social aspects that will bond our learners into a collaborative and sharing community of learners.

Much of my experience and reflection has focussed on things that did not work but it is key to note that despite redundancy, finding and starting new work and other major upheavals in the last 6 months, my ability to continue to engage with the learning through the online tools has continued. In a real world scenario, this would have been impossible and my learning path, despite best intentions would have ended prematurely.

My experience over this course has shifted the way in which I approach the rollout of Learning Platforms and New Technologies in schools. Rather than solely focussing on the training and technology it is the pedagogy that has been our priority. But it is through reflections here that I realise a focus must also be on the development of community and social constructions that will ensure that users return to the environment over the years.

We are told in popular fiction, that "if you build it, they will come"[8] but our focus must not just be on building these tools but in sustaining the communities that come to use them. To give opportunities to share and experience in less formal settings and for the users to define the way in which the tools are used, fostering a change of culture to value "social networking" and the concepts that make sites such as Facebook, BBM and Twitter so valuable and vital to the non-school lives of our pupils.

School leaders need to be supported in working WITH pupils, not just on their behalf, to challenge the very notions of what successful online learning looks like, taking value from the tools that in many schools we restrict or remove.

Otherwise we are challenged with using tools and ideas out of touch with students who are already confident and competent digital citizens, engaged in an exciting and challenging virtual world or learning experiences outside our school gates over which we have no control or knowledge.

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Endnotes

1 Online Learning Task force
2 (1) Technology needs to enhance student choice and meet or exceed learners' expectations
(2) Investment is needed to facilitate the development and building of consortia to achieve scale and brand in online learning
(3) More and better market intelligence about international demand and competition is required
(4) Institutions need to take a strategic approach to realign structures and processes in order to embed online learning
(5) Training and development should be realigned to enable the academic community to play a leading role in online learning
(6)Investment is needed for the development and exploitation of open educational resources to enhance efficiency and quality

3 United States National Research Council

4 http://media.ofcom.org.uk/2011/08/04/a-nation-addicted-to-smartphones/

5 International Conference on Computers in Education

6 Appropriate Learning Objectives, Useful Learning Experiences, Organizing learning experiences to have a maximum cumulative effect, Evaluating the curriculum and revising those aspects that did not prove to be effective

7 Eskills UK report that GCSE ICT take-up has dropped 52% 2004-2011

8 Field of Dreams, Kevin Costner, 1988

The Twittersphere – the new VLE?

Cited in:

- Advancing Education Spring 2013

This paper evaluates the key benefits of using Twitter as part of a PLE for trainee teachers on placement in order to provide the ability to exchange information, resources and links. By consciously creating their own personal learning environment, learners' knowledge was not restricted to their own intrapersonal processes, but became distributive, 'consisting of a network of connections formed from experience and interactions with a knowing community' (Downes 2006).

Introduction and background

Technology is changing the nature of the relationship between learners and the spaces in which they learn (Al-Mahmood 2008, Fenwick, Edwards and Sawchuk 2011). The many opportunities to learn in virtual as well as physical spaces, in both informal and formal situations are also changing the nature of the relationship between teachers and learners. The role of the education system in this new environment will also need to change to produce competent, independent learners who can create their own personal learning environments to bridge the gap between their informal and formal learning.

The dominant learning system within formal education in the UK is face-to-face teaching, in a specific, dedicated physical context such as a school classroom or university lecture hall. The assumption has been that most learning, at least that which is valued by the current assessment regime, is likely to occur in this situation. The concept of dominant design (Wilson, Liber et al 2009) argues that once a particular system or design has gained prevalence in a particular area, it is difficult to deviate from that design and thinking tends to become confined by it. Ironically, just as schools and universities have begun to deviate from the face-to-face model and embrace the concept of online learning, (most commonly in the form of institutional virtual learning environments/VLEs such as Blackboard and Moodle), new spaces and designs for learning are beginning to emerge.

Space is no longer considered to be the equivalent of 'place' (Fenwick, Edwards and Sawchuk 2011, Meyrowitz 1986), consequently the boundaries separating traditional academic places from the work place, home and the myriad of online 'spaces' on the Internet, will have to be 'dismantled', 'renegotiated' and 'recreated' (Massey 2005:179). Learners will need to find ways to navigate 'in, through and in-between' these spaces, to inhabit **liminal spaces**[1] in which they can be transformed 'by acquiring new knowledge, new status and a new identity in the community' (Cuthell, Cych et al. 2011). They will need to learn how 'to project positive social digital identities to become network community learners' (Tu et al, 2012:17).

A possible framework which may help learners to navigate such spaces is that of the personal learning environment (PLE). Definitions range from 'a collection of tools brought together under the conceptual notion of openness, interoperability and learner control' (Siemens, 20071) to an environment where people, tools, communities and resources interact in a loose kind of way (Wilson et al 2009). Whilst the tools available for learners to create such an environment are not new, they have become more ubiquitous and accessible. Rather than the institutional VLE, which is teacher-led and designed, the PLE allows learners to co-ordinate connections between people, tools and materials. The PLE, unlike the VLE, is not a technological platform but a practice or process devised by the learner.

My research investigates the role which the social media platform Twitter might play in the personal learning environments of a group of trainee teachers on placement. Could Twitter provide a **space** or **framework**, within which a group of trainee teachers on placement might re-negotiate the boundaries between university, placement and home and create a productive personal learning environment?

In the case of trainee teachers, it can be challenging to apply and integrate knowledge learnt in the training institution, with the practical, situated learning taking place in the busy, fast-moving environment of the primary school classroom. Moreover, there is little encouragement and no framework provided for learners in any phase of the formal education system to bring together and make use of the skills and knowledge they acquire from a myriad of sources such as the Internet, home and informal activities such as sport, part-time work and youth organisations.

Teacher trainees, in particular, are often physically and mentally isolated from peers, tutors and place of study (Irwin and Hramiak 2010) at the very time when support, expert knowledge and the opportunity to reflect and discuss new learning is needed. What is required is 'just-in-time' communication (Dunlap and Lowenthal 2009) or interactions which provide a range of emotional, practical and cognitive support.

Can spaces such as Twitter be negotiated and shaped by learners to create a common learning zone which bridges different activities in systems ranging from training institutions, work placements, home environments to the Internet?

What is Twitter?

Twitter is a micro-blogging environment which allows participants to post short messages (140 characters, known as 'tweets') either asynchronously or synchronously. It is open to all (unless tweets are made private) with messages accessible either from a computer or smartphone. Value or social capital is gained from making connections and creating and being part of different 'networks' (Recuero, Araujo et al. 2011). Al Mahmood argues that

'…spaces and places are emergent and not predetermined or preformed. They come into being in their enactments.' (2008:12)

Enactment in Twitter occurs through a constant stream of dialogue, in which participants often behave as if they are in closed, bounded communities, despite the transparently permeable boundaries between public and private, personal and organisational.

As Siemens (2005:64) notes "The intentions of a space determines the types of tools required". Dorsey's[2] original intentions for Twitter were to enable 'a short burst of inconsequential information' (Sarno 2009) in a broadcast, uni-directional format signalled by the use of 'followers' and 'following' to describe the actions of subscribers. However, as an 'emergent space' Twitter's practices are being formed by the users' intentions and have moved far beyond these original intentions. McLuhan (2001) believed that technology determines behaviour, and might have argued that the inherent characteristics of Twitter encourages users to invent alternative behaviours within the Twitter environment.

An early example of user appropriation of the Twitter medium (or environment) was the use of the @reply to send direct messages to specific users enabling 'conversations' to take place, even though the chronological presentation of tweets initially made these conversations somewhat disjointed (Honeycutt and Herring 2009).

The hash tag has become one of Twitter's basic functions. It allows participants to insert a key word or phrase in a tweet, preceded by the # sign. This ensures that the tweet appears alongside other tweets with the same hash tag. Potts and Jones (2011) mention the communities which emerge around these hash tags because they allow communication between participants with similar interests by making tweets visible to them. They go further, describing functions such as @replies and retweets as 'actors that foster the movement of information throughout the various connections' (Potts & Jones, 2011:342). In McLuhan's (2001) terms, it would be the affordances of the tool which influences a new form of behaviour in participants along with the ability to arrange the content generated in ways which benefited the participants.

Research questions

Specifically, my research asked:

1. Can Twitter provide a space or framework within which a group of trainee teachers on placement to re-negotiate the boundaries between university, placement and home?
2. Does Twitter possess the affordances to create a successful learning environment?

This account of the practices of trainee teachers as learners in Twitter could provide useful information for understanding and making more effective the personal learning environments of not only teachers, but of a range of lifelong learners.

The theories of connectivism (Siemens, 2005) and activity theory (Engstrom, 1987) appeared an ideal framework for exploring new technology-mediated learning spaces such as Twitter. According to these theories, learning in such spaces happens in networks, where connections can be made between

different concepts, opinions and ideas accessed from multiple sources. Online learning communities are seen as activity systems which enable us to look at individuals in context and thereby analyse the social structures of these environments. Both theories allow for flexibility in roles and relationships in these systems. In activity theory, the diversity of perspectives in such networked systems is seen as a source of contradiction which leads to transformation or learning.

I examined and evaluated different definitions of context and space in terms of their value for a learning community such as that of the trainee teachers in my study (Dunnett 2012). The term 'learning ecology', from connectivism, with its conceptualisation of learning across a set of virtual and physical contexts, appeared to offer the best description of what might be happening in the Twitter environment.

Researchers seem to agree that learners operate best within communities, (Garrison and Anderson 1996, Lave and Wenger 1991, Hill 2002, Bickford & Wright 2006) where individual learners create personal learning environments which enable them to cross boundaries between different contexts and communities. (Tu et al 2012, Siemens 2007).

Relationships and roles in such communities are altered by the 'distance' and nature of interactions (Moore 1993), particularly the role of tutor and the relationship between tutor and student. The nature of knowledge construction online can be usefully examined through the lens of situated learning, exploring interactions and notions of participation through manifestations of social presence such as discourse and other affective features such as the sense of a shared and safe space (Hill 2002).

Methodology

Sample

The group selected for my research was the tutor and 26 trainee teachers enrolled on the flexible3 route of the postgraduate certificate in education (PGCE) course at a University college in the Midlands.

With ethnographic action research as the guiding methodology, the data generation methods were largely qualitative, and collected through participant observation, survey and interview. The principal method, **participant observation** of the weekly #bgpgt Twitter feed, took place over seven months from May 2011 – November 2011.

The initial core activity of #bgpgt was a Twitter chat running over the course of a week, in which the discussion topic was pre-determined by the tutor at the end of each week. The Twitter chat was not formally moderated although it was informally moderated by the researcher in the first few weeks. The only criteria for taking part in the chat was to be a member of the flexi-course PGCE at the particular University College in question, which did not explicitly frame the interaction as a 'community of practice', although some of the tasks set were an attempt to do this.

#bgpgt tweets were not protected and new participants were encouraged. There were no specific protocols in place beyond the injunction to use Twitter for 'professional talk'4. The open nature of the chats meant that there was the potential for other people such as fellow PGCE students, teachers in placement schools etc. to join in. In practice this didn't happen.
The study followed the ethical guidelines set out by the University of Edinburgh (School of Education) and the Association of Internet Researchers.

Data analysis

Combining activity theory and discourse analysis seems to be somewhat problematic. Activity theory is criticised for focussing on the **activity** for which the language is being used in order to figure out what is going on, whilst discourse analysis focuses on the **language** being used, with activity merely being the context of its use (Engstrom 1999). As this study is ethnographic action research, it does not distinguish between the data itself and the context. Both the activity in which participants are engaged but also the language they are using to achieve their object is important. I analysed everything I observed, since one objective was to ascertain whether the context established certain expectations of the kind of talk which is appropriate (Wetherell 2001).

An 'interactional sociolinguistic approach', was combined with 'corpus[3] methods' (Wetherell 2001). The availability of archiving software for Twitter meant that a large corpus could be collected, meaning that general features of language use in this medium could be explored. The archiving facility collected both 'naturally occurring' data and data from the transcript of an interview. The 'naturally occurring' Twitter dialogue was analysed for patterns of language use which might indicate participants' membership of discourse communities such as that of practising teacher and student of education. Both qualitative and quantitative analysis was performed to provide a complete picture of the activity occurring in the Twitter environment (Hines 2000).

The final method of analysis was social network analysis which looks at the patterns of relations amongst people (Garton et al 1997). Ethnographic action research refers to such networks as **communication ecology** (Tacchi et al 2003, Hine 2000). Collecting information and analysing it in this way allows us to understand the communication patterns and processes of a group and how these might be improved. It can also examine how involvement in such a network or community affects the behaviour and attitudes of network members.

A whole network analysis (Garton 1997, Kadushin 2004) usually uses a specific criterion to set a population boundary – in this case it was membership of the flexible PGCE course at a particular institution.

Findings

Some of the key findings of my research were that participants began to recognise that expertise and knowledge was not the sole preserve of the tutor in the educational establishment. Students became more aware of these other sources, even amongst their own cohort.

Could anyone give me a link for the Simple View of Reading please? I can't seem to find it :(#bgpg #TESNewTeachers

18-Nov-11 16:

@SuperSue29 #bgpgt It's in the Rose Review isn't it Sue?

18-Nov-11 2

This recognition chaged the nature of the relationship between tutor and students. Participants saw themselves on an equal footing with the tutor and were as likely to accept information from fellow students as from the tutor.

A supportive community was formed which offered support and information but, more importantly, more active individuals modelled how to develop a professional network and gave others in the community access to that network.

Trainee teachers used their community as a readily accessible, constantly available source of information, which could be called upon at any time, from any location. They began to construct their own personal learning environment made up from the expertise of peers, tutor, researcher, professional bodies, websites and library. They gained the opportunity to rehearse the teacher role through use of professional discourse and making links with fellow professionals. The learning which took place was situated in nature – trainees learnt through participation in the discourse and activities of the community.

Boundaries between the different activity systems of university, home and placement were re-negotiated in three ways:

- Through language – Twitter enabled learners to experience and take part in a range of different discourse types – professional, social, educational resulting in a re-negotiation of their perception of self-identity and role.
- Through exposure to a range of resources and expertise to solve real life problems regarding assignments and classroom practice, rather than reliance on the educational institution and tutor. The role of the tutor was re-negotiated but not satisfactorily resolved.
- Through the provision of a 'space' in which learners can form and co-ordinate their personal learning environment and re-negotiate their role in their own learning.

The key characteristics of Twitter which allowed these re-negotiations to occur were as follows:

- The #bgpgt **hash tag** created a sense of community by acting as a filter through which individuals could bond with fellow trainee teachers. It acted as a permeable boundary but also gave a sense of identity to those using it. However, the illusion of a bounded community has drawbacks as not all participants are sufficiently aware of privacy issues or surveillance by others.
- The **140 character** restriction meant that learning occurred in micro-chunks or fragments, largely through the ability to

> - exchange shortened links to further reading
> - exchange information about location of resources
> - access multiple perspectives on an issue

- The public, constantly flowing conversation on #bgpgt enabled constant **access** to peer support, from mobile devices as well as PCs. However the public nature of the exchanges meant that the community

sometimes felt intruded upon. There was a level of awareness about possible surveillance by the tutor, parents, and other professionals.

- The lack of defining characteristics or 'rules' in Twitter allowed participants to define their own 'context' through dialogue, as demonstrated by the redundant nature of much of the communication and the rapid switches in discourse and register. Access to professional discourse offered an opportunity to rehearse the teacher role.
- The ability to acquire and follow a range of people, re-tweet and exchange useful links meant that students became more aware of other sources of 'expertise' and recognised that expertise was not the sole preserve of the tutor in the educational establishment. However, with the tutor role rendered ambiguous, a re-negotiation between learners and institution will be necessary in the future.

A core group in the #bgpgt community took responsibility for reinforcing 'norms' and practices such as offering and requesting support and information. Key individuals played a crucial role in the exchange of information and the exercise of influence. There was also a role for the tutor, albeit a less authoritative and traditional one. Although there appeared to be some correlation between the number of tweets and number of followers, this is not an accurate measure of influence. One participant in the study tweeted only 15 times, had a modest number of followers and contacts, but was reported as a contact by a large number of people in the #bgpgt community. Her 'centrality' within the network enabled her to provide 'bridges' to other learners and their networks.

Twitter has the potential to provide learners with the tools to construct personal learning environments. Although only a minority of the trainee teachers surveyed (36%) had begun this process, one commented

"It [Twitter] has played a huge role in my learning on the PGCE. I have found many useful people/groups to follow in the world of education and have accessed many of their resources in order to improve my own teaching practice."

In summary, the key benefits of using Twitter as part of a PLE are the ability to exchange information, resources and links; to gain reassurance from sharing experiences and expressing solidarity with others and to have self-esteem bolstered through positive feedback. The challenge for both learners and tutor is to recognise that they are making meaning by forming connections and creating knowledge through the conscious use of information exchanges between their different communities, whether online or face-to-face. By consciously creating their own personal learning environment, learners' knowledge was not restricted to their own intrapersonal processes, but became distributive, 'consisting of a network of connections formed from experience and interactions with a knowing community' (Downes 2006). In order to become truly effective network learners, learners also need to recognise the importance of projecting 'positive social digital identities (Tu et al, 2012:17), another key area in networked learning, which was not covered in this study.

Noreen Dunnett, E-learning Consultant, Civica UK. Twitter accounts: @comcultgirl and @civicalearning. Short version of article on http://civicalearningblog.com

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Endnotes

[1] Liminal space - a rite of passage, in which a person moves from one state of being to another (Cuthell et al, 2011)

[2] Jack Dorsey, one of the original founders of Twitter

[3] A collection of linguistic data seen as representative of a certain type of text, interaction or discourse (Wetherell, 2001:103)

Developing Trainee Teachers As Practitioner Researchers

Cited in:

- Advancing Education Spring 2013

Background

This paper reports key findings from a Teaching Agency funded project investigating whether new technologies can help to develop literacy skills for SEN learners (Crook, 2008) and engage disaffected learners through using Web 2.0 technologies* to encourage pupils to be explorers, communicators and producers of knowledge. The project, led by Nottingham Trent University (NTU), involved NTU trainee teachers specialising in teaching Information Communication Technology: six trainee teachers on a one-year full-time Post-graduate Certificate in Education (PGCE) course; and one trainee teacher from the Graduate Teacher Programme (GTP). These trainee teachers were paired with expert teachers in core subjects (English, maths and science) from five secondary schools across the East Midlands who were invited to take part in the project. The project took place January 2012 to January 2013 with the classroom focussed aspect of the project taking place during April and May 2012.

The project was intended to enhance trainee teachers' experience of successful technology-based practice within core subjects while exposing them to excellent teaching with technologies, and encourage reflective and collaborative practice. The project provided opportunity for expert teachers

to develop practice in using Web 2.0 technologies* in core subjects to identify, through collaborative research with the trainee teachers, whether this increased engagement and raised literacy levels.

There is an increasing focus on teachers becoming engaged with research. This project provided an opportunity for trainee teachers and qualified teachers to work together as participants in active practioner-based action research. The timetable for the project was as follows:

- January 2012: potential schools identified; trainees identified and linked with schools; 'expert teachers' identified in core subjects;
- February 2012: project planning;
- March 2012: briefing of teachers and trainees which included a workshop on various Web 2.0 technologies* and discussion time to identify appropriate classes to be involved in the project; the teachers working with their trainee(s) all chose to run the project in Key Stage 3 English and science lessons.
- April-May 2012: project in action in classrooms and data gathering;
- May 2012: initial data analysed – trainees involved;
- June 2012: trainees presented projects supported by teachers
- Sept–Dec 2012: final stages – final analysis; case study produced; materials produced; dissemination.

This paper focuses on the trainee teachers' experiences of being involved with the project, their changing role from trainee to researcher and their learning and developing pedagogy. It will also examine how the teacher trainees were able to develop leadership skills, plan for the effective use of technology in core subjects and work collaboratively with expert teachers to engage disaffected pupils and secure pupil progression in literacy. Thus impacting on trainee teacher experiences and evolving the professional identities of the trainee teachers into researchers.

Methods

The research represents a small scale case study (Bogdan & Biklen, 1998) using a mixed methods approach (Gorard and Taylor, 2004). The research followed the pattern of a small-scale evaluative case study (Bassey, 1999) with a view to improving practice. The approach was both interpretivist and evaluative. Having taken this approach, the research included data derived from a number of sources to add rigour to the work through methodological triangulation (Cohen, Manion, & Morrison, 2007).

The schools involved in the project were identified from those involved in Partnership with NTU. The head teacher from each school selected to work collaboratively with NTU as part of the project was asked to name an appropriate teacher from one of their core subjects to be involved in the project. Trainees involved were identified from those placed in each of the schools taking part in the project for their school experience, who were taking the Information Technology strand of the PGCE/GTP course.

This range of data collection methods included:

- Interviews with trainee teachers using both open and closed questions.
- Interviews with expert teachers involved in the project at each of the 5 schools.

- Observations of the project in progress in each school.
- Focus group interviews with pupils taking part in the project at each school.
- Analysis of data on literacy levels for the pupils who were part of the project.

Findings

While the focus of this paper is on the developing role of trainee teachers the overall results of the project indicate that new technologies used appropriately to support learning and teaching in the classroom can raise the levels of literacy and can result in engaging pupils who are identified as 'disaffected learners' by the school.

Analysis of the data in terms of the developing role of trainee teachers indicates that the trainee teachers benefited in a number of ways through engagement with this project. The main aspect that emerged from the data was the benefits to the trainee teachers of working collaboratively with an expert teacher. While this process has been part of teacher training for many years the additional benefit to the trainees from involvement in this project centred around working with teachers outside their own discipline, ie trainee teachers who are ICT specialists working within a core subject discipline (in this project science and English).

The trainees identified a range of benefits including:

- developing their research skills and gaining a working knowledge of how action research can inform professional practice and identifying how to measure the impact on pupils thus developing a sense of 'practitioner researcher';
- active involvement in a research project including data gathering, analysis of data and presentation of data to inform the overall project findings;
- professional discourse with expert core subject teachers around lesson planning, identifying and using appropriate technologies within a core subject area, and reflecting on practice;
- involvement in decision making around which group of pupils would benefit most from involvement in the project and why;
- observed benefits to the pupils in terms of greater confidence in using technologies, increased engagement in lessons, and higher achievement of literacy levels through the use of new technologies;
- development of leadership skills – in this project the trainee teacher was able to lead the expert subject teacher in how to use the technology, set up the required resources (for example set up the wiki, etherpad, etc) and support the lesson from a technical perspective;
- working closely with Teaching Assistants due to the nature of the pupils in the project in each school, ie low ability groups generally with high levels of pupils who had English as a second language and who were identified as 'disaffected' learners;
- trainees were invited to co-present the project at the Association of Information Technology in Teacher Education's annual conference at Oxford University (July 2012);
- evaluating the progress of pupils in literacy and engagement which had not previously been a key focus for the trainee teachers.

A number of unexpected consequences of the project were also identified:

- expert core subject teachers reported more confidence in their own use of Web 2.0 technologies in their classroom;
- in one of the schools Teaching Assistants (TA) reported that a pupil with physical disabilities was able to work on their own without the support of the TA through the use of appropriate Web 2.0 technologies;
- teachers and pupils reported that lessons where collaborative Web 2.0 technologies were used to support group work were 'quieter' and more 'pupil focussed';
- increased motivation, particularly from girls;
- improved pace in lessons;
- increased use of Web 2.0 technologies by those teachers involved in the project following completion of the project.

It should be noted that the planned use of Web 2.0 technologies in this project produced positive results, but as stated above this reports a small case study; further longitudinal research along with embedded use of technologies within schools is required.

Conclusions

Conclusions from this research in terms of changing student experiences of higher education and evolving identities of students include the increased confidence of the trainee teachers as researcher, the impact the project has had on their developing professional identity, the development of their leadership skills, their increased confidence in using new technologies in the classroom and their confidence in raising ambition with learners in their own classrooms, drawing on expert knowledge and enthusiasm.

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Acknowledgements:

Further information: as a result of this project CPD materials for schools in using new technologies in the classroom and for Initial Teacher Education providers for use in training teachers in using new technologies in the classroom will be available from the ITTE web site (www.itte.org.uk) from 1 February 2013.

* A range of Web 2.0 technologies were identified and used in this project: Piratepad (http://piratepad.net), Etherpad (http://openetherpad.org/), Twitter, wikis (www.pbworks.co.uk), Corkboard.It (www.corkboard.it) and mind-mapping (http://bubbl.us).

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Let's knIT

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This will have you in stitches...

"My name's Steve and I'm a knitter." I said this to a group of teachers, who then looked at me strangely. "Really?" they questioned. "Yes," I said, "and I think there's a link between knitting and computer programming." So, how did this all start? Let me spin you a yarn...

A year ago, my Great Uncle Norman came to visit. He had worked for the Inland Revenue in Scotland back in the 1950s, but while he went around the isles, he learnt Gaelic, songs, stories and traditional crafts; this experience was then going to take him all over the world. He taught me about knitting, how

important it was for the communities. Also, how men and women all knitted out of necessity, rather than as a hobby. He told me of the fisherman's Ganseys - thick sweaters worn by the fishermen on the boats. Each village had a different pattern, so in the sad event of a man-overboard, the body could be identified.

Talking with my Great Uncle, I realised how teaching knitting would be great in schools, for example, the physical benefits finger strength, co-ordination and dexterity. Developing language skills like instructional writing, speaking and listening. Social skills of collaboration and communication. Links with the school communities too, as the children could interview their relatives about their knitting experiences. So, in Summer 2011, I cast on!

Much ado about knitting

Knitting isn't easy. At first, I tried using knitting books. Even though the pictures were clear with detailed written instructions, I couldn't understand properly. Further help was found online. YouTube is an amazing resource, not just were there hundreds of knitting enthusiasts keen to share, but also yarn companies, helping beginners to learn, for example, Lion Brand YouTube. What an opportunity for our children? They could not only learn from videos, but create their own to teach others!

Looking for other supporters, Craft Club is a national campaign to develop craft in schools, a great initiative from the Crafts Council with other partners. They support schools to find volunteers to share their expertise. Hand knitting, enables the children to begin to learn sequences of instructions, without the complication of needles and progress is easily seen progress is easily seen. You'll find an example in the supplement (or click here).

Keep calm and carry yarn

Some school knitting clubs were already established. Many children have encountered knitting in school, but few could remember how to do it. Those children who were able to knit were generally taught by a grandparent. It seemed they had an emotional bond, but their instructor had taught them on a one-to-one level and persevered with them to help them. Solving problems and learning together had made a lasting impression.

That's an order!

How are children currently learning to program in primary schools?

The 'BeeBot' is popular for inputting instructions to move the brightly-coloured robot around the floor. Recently released are two BeeBot apps for the iPhone and iPad, which encourage the children to instruct a virtual BeeBot through many fun games).

The Crystal Channel from Planet Sherston, has many high-quality resources to teach sequencing instructions. These include 'The Crystal Rainforest', 'Flobot' and 'Mission Control 2'. The children I

observed loved following the stories while developing their instructional skills, for example, programming a drinks machine to deliver the perfect drink.

LEGO WeDo provides the children with a simple interface to control familiar LEGO models. The supporting videos help them to build and program a variety of interesting projects.

'Scratch'teaches programming by using blocks of instructions to create the programs. The children are encouraged to share their creations back on the community website. A new web version, Scratch 2.0 is currently available to try at http://beta.scratch.mit.edu/. It involves exciting new features, such as using video camera sensing.

Tying up loose ends

So, what is the analogy of knitting and programming? Stitching all together, let's consider three ideas.

'User experience' - people knit for a purpose, with a person and their requirements in mind, such as size, colours, patterns and materials. This is the same as programming, where a program needs to meet the requirements of the user.

Knitting follows a sequence of instructions - most people will say 'knit one, purl one' if you mention knitting. These are the instructions following a syntax (vocabulary), including variables, loops and decisions (If...then...else). For example, if you need to knit fifty rows, you will knit one row at a time until you reach row fifty. Therefore, the program could be 'If row is fifty then stop, else keep knitting.'

Finally, when you make a mistake you need to fix it - this is debugging the program. As I've learned to knit, I've made many mistakes. Each time, the stitches have to be undone and replaced. Debugging programs is not only necessary, but also difficult. Both knitting and programming require perseverance and struggling with problems.

To infin-knity and beyarned!

When this all started, I thought knitting could help social skills, technology could help capture disappearing skills and enable learners to learn to knit. In seeing similarities between knitting and programming, future programmers need to start young.

So, what next? Children love the idea of becoming hackers - mischievous programmers and the knitting analogy continues there too! Try searching online for 'Yarn bombers' or 'Guerrilla knitting' - they've got it covered!

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Supplementary links

Lion Brand YouTube

http://www.youtube.com/user/lionbrandyarn

Craft Club

http://www.craftclub.org.uk

Craft Club Hand knitting example

http://www.craftclub.org.uk/video/featured/finger_knitting_instructional_video

BeeBot app

http://www.tts-group.co.uk/shops/tts/content/view.aspx?cref=PSGEN2293277

Crystal Channel from Planet Sherston

http://sherston.com/crystal/

LEGO WeDo

http://education.lego.com/

Scratch

http://scratch.mit.edu . The new version of Scratch (beta) can be found at
http://beta.scratch.mit.edu/

Scratch suggested curriculum

http://scratched.media.mit.edu/resources/scratch-curriculum-guide-draft

Scratch and LEGO WeDo

http://info.scratch.mit.edu/WeDo

Reflections on the Victorian classroom

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- ## Advancing Education Spring 2013

The idea that the model of state education has changed little since Victorian times has been around in education technology circles for some years. Mark Baker considers whether it remains true today.

The idea that the model of state education has changed little since Victorian times has been around in education technology circles for some years. When I first heard it I found it a provocative and challenging idea - with all the computers, interactive whiteboards, radio stations, video cameras and similar that are found in schools, could this possibly be true?

Ideas that cause us to step back and question things that lie at the heart of our professional values and beliefs are very valuable as they can help to prevent complacency and may lead on towards further creativity and progress. From a personal perspective, I found this particular challenge to be very useful.

When Victorian education was mentioned in Mr Gove's speech at the opening of BETT 2012, I felt it was time for a re-examination. In his speech he also suggested that little had changed between then and now.

"The fundamental model of school education is still a teacher talking to a group of pupils. It has barely changed over the centuries, even since Plato established the earliest "akademia" in a shady olive grove in ancient Athens. A Victorian schoolteacher could enter a 21st century classroom and feel completely at home. Whiteboards may have eliminated chalk dust, chairs may have migrated from rows to groups, but a teacher still stands in front of the class, talking, testing and questioning."

My first response was to consider the parallel with the evolution of the shark or the crocodile. These beasts have evolved little, if at all, over thousands, perhaps millions of years. They are outstanding predators, ideally suited to their habitats and have not needed therefore to evolve any further. If we are still using a model of education that can be traced back at least as far as Plato, that suggests that it has some pretty compelling strengths. Not least of which
is the power of the relationship between a teacher and their learners. Even older learners, who are more capable of learning independently, often prefer face-to-face contact with a teacher/lecturer/mentor/trainer when acquiring new skills and knowledge. Although there are some

variations, this model is widely used throughout education in state schools, private schools, colleges and universities.

My second response was to consider the change in classroom culture. Having worked on various types of school improvement or school development initiatives I know how difficult it can be to change classroom practice, especially in the short term. However, when you consider the way education has developed over the last 20-30 years, there have been some seismic shifts, in areas like inclusion and SEN, investigative learning and assessment for learning. Perhaps the classroom has changed a great deal more than Mr Gove gives the profession credit for.

It is true that a Victorian teacher would recognise the "single teacher to a class" model and feel very comfortable with that. But I think that any feeling of comfort would end there. The same could be said of other professions. I am sure that a Victorian doctor would recognise a modern operating theatre for what it is and lawyers would understand how a modern court room is laid out as well as the basics of administering justice. However, the education and training needed to work in all these areas, together with the relative complexity of the tools that now have to be applied with skill, mean that these professions have changed hugely.

In moving on from comparisons with Victorian classrooms, we should be mindful that modern technology does offer us opportunities to try both adaptations and radical changes to the tried and tested model of classroom education, that are simply not possible without ICT. I also believe that whilst technology moves on at incredible speed, humans learn how to exploit it at a much slower pace. This suggests that there is a great deal of unrealised potential available to be tapped and might explain why some people (including Steve Jobs and Bill Gates, according to a recent TES article) feel that technology has not delivered the improvements in outcomes that have been hoped for.

Perhaps technology needs to get smarter. Reliability of equipment, the ability of different components to work together seamlessly, together with high quality design leading to much greater ease of use could, taken together, make ICT tools much more attractive to teachers, who spend their working lives under all sorts of short-term pressures. These sorts of qualities can be found in medical equipment, but it comes at a price. Hospitals are "high stakes" environments with equipment budgets to match.

When money is spent on educational technology there is a sharp divide between buying "stuff" and providing training and support. At best the latter gets squeezed, at worst it is left out all together. Sparkling new hardware is tangible, it can be counted and shown to people. It is clear evidence of intent. It can appear in plans where targets can be set, measured with ease and ticked off. Training and support is generally invisible, difficult to evaluate and not always successful.

Surgeons will train extensively before using new equipment, possibly starting with an expensive simulator. Teachers may be expected to teach themselves in their own time or if they are lucky, be sent on a one day training course. So perhaps we need to get much smarter in understanding the different ways that people acquire new skills and embed changes in their practice, so that we can better support staff when attempting to integrate new technologies into schools. Perhaps we could learn from other professions where new technologies are embedded faster, by looking at how they handle training and development.

We might be standing on the threshold of a brave, new world of education, although my instinct tells me that if I were to go into a classroom in fifty years time, I would not feel out of place. Which is not to say that things won't have changed, of course.

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Words and pictures: using new technologies makes learning more absorbing

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Such is the power of the new technologies that you can easily turn words into pictures; use stunning illustrations to make you think about more imaginative and inspired words and get moving representations of yourself (avatars) to actually turn your thoughts into spoken words. The link with creativity is what makes learning so absorbing and lessons fun for pupils and teachers alike.

Words into pictures

Tagxedo turns words into visually appealing word clouds and shapes which can be used for all ages. To see the potential look at the Tagxedo gallery and presentation of '52 ways to use Tagxedo in the classroom' produced by Eden school Vermont. Examples included: assess confidence or concerns, topic patterns, mathematical vocabulary. Shapes offered are apples, doves, hearts and stars. For younger students you can use Wordle. Students can tweak their clouds with different fonts, layouts, and colour schemes. Wordle is used at Four Oaks Primary School, Sutton Coldfield where Deputy headteacher Mark Benton, produces part of the School Handbook using this technology. A blog entitled 'Rhondda's Reflections describe their use of Wordle. She is a teacher librarian in a Melbourne boy's secondary school. With greater prominence given to words that are used more frequently, it allows for a piece of text to be analysed in a visual way. E.g. If letters, discussion piece or an essay is put into the Wordle text box the software it instantly reveals the central points or overused words. The text can then be analysed, revisited and/or improved. Wordles are being made from many forms of text, song lyrics, poems or words relating to specific topics and then used as
competitions, to get discussions started or focusing minds on a topic/issue.

A Wordle of this article.

Another idea is to use surveys to make graphs and diagrams. One of the most widely and currently popular mathematical online tools is Survey Monkey which can be used to design a quiz, a questionnaire or a survey and then collect the responses and analyse the results. In practice, teachers are using Survey Monkey for an extremely varied number of reasons. Examples of current practice in schools can be found at Lode Heath Secondary School, Solihull which uses Survey Monkey to produce student voice surveys and at Shinfield St. Mary's C.E. Junior School in Berkshire where a travel survey was undertaken. The Teaching and Assessment Group in Miller Academy primary School in Caithness, Scotland undertook a review of the Profile and Report format for the main report to parents in all primary schools. The Parents and Staff Association at Holmesdale School in Surrey used it to decide whether a school newspaper should be produced and Mount St Michaels School, Randalstown, conducted surveys on school life.

Yacapaca is a similar example. According to Yacapaca approximately 20% of secondary school teachers in the UK are actively using this technique. In Sept 2012, it had more than 130,000 questions accessible and 2,397 teachers successfully writing and sharing quizzes, providing data for a range of analysis tools that will produce charts, histograms and graphs.

Pictures to stimulate words

Galaxy Zoo is a site that asks the public to help with the classification of galaxies. Hubble uses gorgeous imagery of hundreds of thousands of galaxies drawn from NASA's Hubble Space Telescope archive. Your students may even be the first person in history to see each of the galaxies they are asked to classify. This is a wonderful opportunity to be a 'real scientist'. Some schools are using these pictures to stimulate writing about the awe and wonder of the universe.

Part of Galaxy Zoo homepage.

Another fascinating example is QR codes. QR code (abbreviated from Quick Response Code) is the trademark for a two-dimensional bar code. Recently, the QR Code system has become popular due to its fast readability and greater storage capacity. The code consists of black modules (square dots) arranged in a square grid on a white background. Look at '50 Interesting Ways to Use QR Codes' on Googledocs. The work is licensed under a Creative Commons Attribution Non commercial Share Alike 3.0 License. Teachers around the world have added their ideas, tips and email addresses. It couldn't be easier to use. Examples include: use QR codes to vote using twittertools; QR Codes to enhance/extend information in books & printed material; Put a QR code in your classroom window so people can see inside; you can even colour code QRs to link to different subjects; make displays interactive; bring the web into the non-ICT classroom; link directly into Google Maps; create a kinaesthetic reading adventure; geocached QR Codes for revision/tests and Create a Virtual Museum - Past and Present. Half an hour with this resource will keep you busy for a month.

QR code for Naace website - try it out!

Recent research has shown that use of visual image – e.g. video/DVD/still image has shown an improvement in writing and attitude to writing by boys. Increased quantity of writing, increased quality of writing; wider use of vocabulary; greater use of imagery; increased fluency; more adventurous writing; improved attitude to writing; greater engagement with writing; greater commitment to writing; improved motivation, self-esteem and enthusiasm. Use Photostory and presentation software, such as PowerPoint or Prezi, to get pupils much more engaged in the drafting and editing process, assessing their own writing, keeping a sense of purpose and audience at the forefront of their work.

Enabling pictures to talk

A Voki is a talking voice character (or avatar), a computer-generated version of oneself. Teachers are discovering some of the unique roles these speaking avatars can play in education particularly in the online classroom.

Voki screenshot

For teachers these speaking avatars can add a more "human" element to the online class website or blog. It is especially useful for those of us who may not be all that great with videoing. It motivates students to participate; introduces technology in a fun way and is an effective language tool as there is text-to-speech in over 25 languages. Voki is also a great way to get shy students involved or to share comments with students in other countries. Rutherford Elementary school, North Carolina is one of a dozen schools involved on a voki project. Clydebank school Scotland uses Vokis as a revision tool. St Mary's Folkestone used it on an international project.

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Useful websites

Galaxy Zoo http://www.galaxyzoo.org/
Survey Monkey www.surveymonkey.com
Tagxedo http://www.tagxedo.com/
Voki http://www.voki.com/
Wordle http://www.wordle.net/
Yaccapacca http://yacapaca.com/
50 interesting ways to use QR codes in the classroom
https://docs.google.com/present/edit?id=0AclS3lrlFkCIZGhuMnZjdjVfNzY1aHNkdzV4Y3I

Copy right!

Cited in:

- Advancing Education Spring 2013

July 2012 saw the official launch of copyrightandschools.org, created by the Copyright and Schools working group. This group is made up of representatives from the 12 licensing bodies which between them oversee 14 different licences.

The launch was addressed by the CEO of the Copyright Licensing Agency, Kevin Fitzgerald, Richard Hooper CBE of the Intellectual Property Office (IPO, trading name of the Patent Office) and Baroness Wilcox, Parliamentary Undersecretary of State at the Department for Business, Innovation and Skills.

The copyrightandschools.org website follows on from the report "Rights and Wrongs - Is copyright licensing fit for purpose for the digital age?" published in March 2012 by the IPO. Education was one area chosen for particular attention because of the complexity faced by schools trying to keep within the law.

The website provides an excellent first stop for schools that have a question about copyright, covering when and why you need a licence and where you can go to get it. The landing page has a graphic of a teacher beside an interactive whiteboard, saying "In my school, I want to…" and once you have clicked the start button, you are presented with 8 options, for example "Make copies of digital resources" and "Watch all or part of a film".

Depending on your choice, you are presented with a brief information summary along with links to the appropriate licence provider(s). There are various blanket licensing schemes that hugely simplify matters by removing the need to request permission every time a copyright work is used. For example, regarding collective worship in schools the site points you towards the Collective Worship Music Reproduction Licence (CWMRL)".

The site clearly flags up where special concessions exist for education, such as "The free Newspapers for Schools Licence gives you the right to copy Cuttings from newspaper websites for teaching purposes and send or receive links to Cuttings by email."

Screening a film as part of the curriculum is covered by an educational exemption that means that a copyright licence is not required. However, schools should be aware that this does not covers things such as extra-curricular use, eg film clubs.

When I first entered the teaching profession in the 1980s, I do not remember much heed being paid to copyright, especially in the newly emerging area of computer studies/IT. There were any number of justifications, not least of which being the complexity surrounding getting hold of permission or an appropriate licence. The final trump card was that we were not making any money from copying material and it was all in the interests of our learners' education.

I had a completely different perspective after I wrote some education software which I managed to sell in small volumes, initially as shareware and later via the internet. I lost count of how much I spent acquiring the skills, hardware and software needed to write these programs. Then there were the many hundreds of hours invested, not forgetting all the marketing effort required. It did not seem unreasonable for those benefiting from these tools to pay a few pounds for the privilege!

The digital age has thrown up many challenges as content is so easy to copy, amend and republish and there is so much that we might choose to use it for. One clear benefit of taking a responsible line is that it gives us another lever to try and encourage learners away from being relatively passive consumers of digital media and towards creating more of their own content – when they become the copyright holders and can use the material as they wish.

Baroness Wilcox clearly felt that the new website was a valuable first step, but there is more work to be done to develop a system truly fit for the digital age. Part of the current vision is a digital copyright exchange, a single online site where different licences can be acquired quickly and easily, as needs arise. This will be an area worth keeping an eye on over the next few years.

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RiskIt Goes International

Cited in:

- Advancing Education Spring 2013

Bangkok Patana School
The British International School in Thailand
Established 1957

PATANA

Nick Goligher reports on RiskIT at Bangkok Patana School, a British International School in Thailand.

The 2,200 students and their teachers at Bangkok Patana School have access to many pieces of cutting edge technology such as class sets of iPads, a fully loaded iMac lab and the school's new Sandbox (a large touch sensitive screen built into a table). If you were to walk through the school on any particular day you would see this equipment being put to use to support and develop student's learning.

In November 2012 the Primary academic team took part in the school's first 'RiskIT' campaign, taking its lead from the UK's national campaign of the same name held the month prior.

The idea of 'RiskIT' was for staff within the Primary School to showcase, celebrate and share with their colleagues the innovative and creative ways in which they use technology with their international students. Another aim was for academic staff to think about other ways they could possibly incorporate technology into their teaching to further develop learning activities for the students, who come from 65 different nationalities.

"As part of our topic 'How what and why we eat?' the children used the iPads to collect images from Google of food that they would eat in their home country and then save them to Dropbox. The collected pictures will be used to make a labelled poster.

The teachers threw themselves into the challenge of 'RiskIT' with learning sessions taking place from Nursery through to Year 6. These included K1 children using iPads to make movies of their 'Journey to the Moon'; augmented reality in K2; a QR Maths challenge in Year 1; Year 2s students calling family and friends around the world on Skype to research their eating habits; Year 4s tackling time problems on the Sandbox and the PE department using the video function on the iPad to record and then analyse tackling and running techniques on the rugby pitch.

Over 40 teachers took part in the initiative with them all those 'Risking IT' being entered into a prize draw at the end of the week to win an iPad mini, donated by Apple Thailand. Their learning activities were photographed and featured on the 'RiskIt' minisite so all members of the school community could see the 21st Century learning that was taking place.

During the 'RiskIt' week teachers were encouraged to celebrate the use of ICT within their classroom. As well as showcasing what they may perceive to be the everyday, mundane ways they use ICT (other people may however think this mundane idea is incredibly innovative), they were encouraged to use this week as an opportunity to 'RiskIt' and try to use technology in a completely new way with the added support of technological support from the IS/IT Team.

Bangkok Patana School looks forward to taking part in 'RiskIT' again next year!

Nick Goligher can be contacted at nigo@patana.ac.th

Having fun learning through technology Assessing the use of DisplayNote in a primary school in Munich

Cited in:

- Advancing Education Spring 2013

A report on the use of the NEC DisplayNote in a Munich primary school.

In the classroom of a Munich primary school, children learn with Tablets and projectors. Working together as a group, what keeps the wheels rolling in business and society, is often unusual in schools. Modern teaching approaches and the latest technology help teachers to promote social training for pupils. The LMU Munich is carrying out research as to what they should pay attention to there.

In the primary school in the Haimhauserstraße in Munich, learning is fun. Here children do not have to struggle with chalk on the blackboard, but can instead immerse themselves with their iPads in all sorts of topics and present their findings to their friends on a large projector, which can even be controlled using a pen. In this venerable school the most modern classroom in the city has been set up by the LMU Munich. Dr Kirch, Senior Lecturer at the Department of Education, is investigating here how technology can be better integrated into the classroom.

"The basic principles of cooperative learning are well researched," Dr Kirch reports. The Canadian educator Norm Green could for example prove in practice that the basic principle of cooperative learning produces extremely good results with the three phases Think, Pair and Share.

The Challenge

The children are given a question to answer or a task to perform and first of all occupy themselves, Thinking it through on their own. In the Pair phase, the students share their findings with individual classmates. In this way they can refine their thinking and exchange information on the issue discussed. In the Share phase, small groups finally present their findings to the group as a whole. The others here have the opportunity to reconsider their own solution or alternatively offer their own solutions to everyone. "The results of this method are very good and in many ways superior to chalk and talk techniques," Dr Kirch reports.

The first result of his investigation is that Tablets can be integrated in a very positive fashion in this process. No wonder that the manufacturers of teaching materials recognised this trend and rely ever more upon digital content. Even primary school children can operate the devices intuitively and cope very well with them. Whenever Dr Kirch tells a story to the pupils of the primary school in the Haimhauserstraße and asks them to note down the most important words in it, he has their full attention. One of the children may dictate this later into the device. Speech recognition converts the language remarkably accurately into writing. Another pupil checks the work. The latter may correct any typing errors.

But considerably more complex units of instruction can be usefully supported with a Tablet. Functions for easy writing, drawing and painting are what make the devices with Android or iOS operating systems ideal tools even for the youngest age group.

What has been missing until now was a cross-platform solution with which content created by the pupils can be easily shared and presented. Along with NEC Display Solutions Dr Kirch is carrying out research into the potential of a newly developed solution, with which this is possible. Unlike with most similar products this runs on all major operating systems and equally with Android and iOS devices.

The Solution

Tablets, as well as PCs, laptops and smartphones can be networked via a WLAN router to the teacher's PC. The same software runs using a uniform user interface for all these devices. This whiteboard software is therefore also available to each pupil. They can use this to receive, link to and save the teacher's instructions on the Tablet according to their own liking with their own comments. All marking and labelling elements offered by traditional whiteboards or PDF editing programs can be found here too. As these tools only appear as a virtual slide of the material presented, it does not matter in which format this output appears. Teachers therefore have the freedom to choose whether they should rely on their own PowerPoint files or on special learning software. Accordingly they do not have to completely rework their digital instruction materials from scratch. With the assistance of this solution the learners can also become the presenters themselves. One click on the sharing option of the teacher is enough for their own work to appear on the screen of an interactive projector. In addition the projector can also be controlled completely using the software. The teacher has thus full control and can, for example, freeze the image or change the input, even with the loss of remote control.

The projector is also suitable for 3D projects. Such complex processes as the cell structure of a plant or the individual elements of the human ear can therefore be represented using optimal dimensional techniques. Thus, they are vastly superior to their 2D counterparts - be it the classic book or a projection. The producers of teaching materials have recognised the trend and

offer ever more and more topics with relevant content from all subject areas. This may also be presented by the teacher or executed by the pupils themselves.

The Result

"Of course the Share phase plays a large role", Dr Kirch explains. The content developed here is controlled for all, presented, compared, and expanded upon by the teacher. "Despite the many advantages of a Tablet, the children here like the larger representation on the projector. Eventually many topics can only be presented really well using this type of representation".

"As a technology provider, we cannot simply reduce our research to electronics and technical specifications. As an innovative company we have to dovetail closely with our research, when it comes to further developing such scenarios for future use" explains Ulf Greiner, Product Manager / Business Projectors Marketing, Product & Solution Management at NEC Display Solutions. *"In schools, universities and other training facilities technological requirements are extremely high. From there, we get valuable feedback that flows directly into the development of our products"*. Important in the development of the total solution for NEC was primarily a system with the same functions crossing system boundaries. This includes, for example, the possibility that touch capabilities of the iPad screen can also be mapped onto the interactive projector and that the user there enjoys the same user experience as on the Tablet.

For further information please see http://www.nec-display-solutions.com/p/uk/en/home.xhtml or email Megan Swweting, Marketing Executive at Megan.Sweeting@EMEA.NEC.COM

Capita Support and Consultancy: The Alsop High School, Liverpool

Cited in:

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"The Capita Consultant has assisted us in a variety of ways to enable us to take full advantage of the ICT facilities, and this process is continually developing and evolving. For example, he's currently investigating alternative solutions for the development of our VLE and I've asked him to support us in developing our ICT strategy. He's also working in conjunction with some Heads of Department to ensure they're aware of the software and hardware that may be used for their specific needs."

Terry Laing, Senior Leader (Data and ICT management)
Headteacher: Phil Jamieson/Joe Manga

The Project

Start Date: Jan 2010

Term: Ongoing

Services: Education consultancy, ICT implementation support and ongoing consultancy

Sector: Public Sector: Secondary Education

Key Objectives:

- Provide expert consultancy so the school can derive full benefit from its new building and ICT solution
- Enable the staff and students to take advantage of the latest technologies
- Improve teaching and learning outcomes through effective use of ICT

Key Outcomes:

- Increased staff confidence in using a range of technology, particularly for presentation
- Greater use of technology to boost student motivation, concentration and ICT skills
- Increased access to current ICT resources across the school and from home
- The Web-based curriculum offers value for money
- Improved maths GCSE results

The Client

The Alsop High School is a large secondary school catering for 1786 students from a range of socio-economic environments. Around 46 per cent of the students receive free school meals.

The Contract

As part of Liverpool's BSF programme, The Alsop High School moved into a new building in 2010, with a technology solution and managed service implemented by Liverpool Direct Limited. Capita's role within the contract is to provide support and consultancy throughout the transition to working with the new technology and through that, to ensure the educational aims of the school are met.

Benefits

Capita has been providing support and consultancy throughout the implementation, recognising the particular needs of the school's students and the particular support that ICT can provide. Liaising with Liverpool Direct Ltd (the IT provider) and the city council over the last three years has provided the school with invaluable support, and training has been integrated into the school's development plan from the start.

After the go live process and the initial opening of the new school, Capita's on-going training helped to ensure all staff were comfortable with the new IT environment. The Consultant was determined to avoid the pitfall of isolated training events that teachers couldn't apply in the classroom, so he also used 'floor walking' to find out where more support was needed. This, together with consultation with the school's Senior Management Team, identified that the Maths department required in-depth support to make the most of their new SMART interactive whiteboards. All staff were initially trained together in using whiteboards and then further support was given both by Capita Consultants and the school IT leads, often on a 1:1 basis.

It also became clear that the Maths department's library of software was dated, and some was no longer compatible with the new equipment. This included an old version of SuccessMaker which the department relied on as its main software. The school was anxious to avoid 'packaging costs' for deployment of resources, so the Capita Consultant suggested web-based software. This avoids the need for software updates to be installed and can be accessed by students off site – whether they're unwell at home, in placements elsewhere, or in need of support for revision skills and homework. The consultant spent an extensive period of time working with the Advanced Skills Teacher and other members of staff, researching appropriate software for them to use, including a guided tour of the BETT show so members of the maths department could see and speak to a range of key suppliers of products. The school chose My Maths, SAM learning and Manga High and the Consultant brought in an external expert to help train staff on their use.

Another strand of support has focused on the potential of visualisers, as they enable staff to review students' work 'on the fly'. They also enable staff and students to view objects – sometimes very small! – in a way that avoids disruption and loss of concentration, and can be particularly useful in science and D&T. Close collaboration between the Consultant and teaching staff has been key, and Terry Laing (Senior Leader, Data and ICT management) stresses the importance of consultants not only offering expertise, but also being keen and approachable.

Certainly, the hard work of the Consultant and staff has paid off: the Maths Department registered a 20 per cent increase in maths GCSE results, which the SMT put down in part to the support given by the new ICT resources.

Planning is well under way for 2013 and beyond. This will include the extension of activities from last year and further software enhancements to support the curriculum. Playing a major part will be development of a new generation of web-based learning, to take the virtual learning environment to a new level. Whatever the future holds, technology will be helping staff and students at Alsop High School to meet the challenge.

Further information can be obtained from its@capita.co.uk or from www.capita-its.co.uk/education.