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Assessment for Learning: A Social Experience

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With so many teachers focusing on Assessment for Learning opportunities, and so many learners focusing on Social Networking opportunities, how can we bring these two together for us all to learn and gain? Fiona Aubrey-Smith, Head of Educational Development at UniServity, shares some ideas.

The majority of schools across the UK have are in the early stages of exploring how a learning platform can support, extend and enhance learning for those within the school community. One of the most common questions over the last few months has been how this ties in with Assessment for Learning, and the key here is to consider your existing priorities within the Assessment for Learning strategy, and consider exactly what these priorities mean on a practical level. Are you focusing on the information sharing aspects of AfL, or on learners engagement in the learning process, or learners reflection on work carried out, or developing learners understanding of success criteria for example.

Sharing Learning Objectives and Goals

At its very simplest level, this is about conveying information to people, whether that information is "We Are Learning To... identify the stages of photosynthesis" or a longer term objective of "This Unit of Work addresses... the affects of gravity". We can use learning platform tools such as news or calendar feeds to enter this information centrally as a class or department and push out to the learners who are engaging with it. Consider the value added to this simple task if we send this information out to learners this way at the beginning of the year / topic / scheme and include links to resources that will be used during the classtime coverage, and also to activities which students may wish to engage with before, during and after the classtime coverage – neatly linking learning with both preparation and revision. Where these tools are being used in practice for this purpose, it has been noticeable that the students involved have reacted very positively when asked about the impact upon their learning during the lesson (see diagram below).

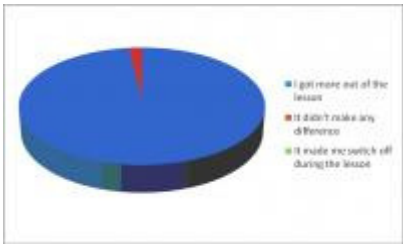

Figure 1: Students (Years 4-9) % responses when able to access Learning Objects with linked resources for a term.

Building on previous Knowledge and Understanding

At the beginning of lessons, units, topics or schemes it is common for teachers to seek clarification of existing knowledge, skills and understanding held by the learners in the class. Many schools are now providing this opportunity using a learning platform forum tool where learners share their existing understanding. Significant value has been noted where learners are then able to revisit this forum in order to also identify what knowledge, skills and understanding they would like to gain, and later adding to the forum again as they gain this. This provides a "before, during and after" snapshot of student's development in specific areas of learning both individually (as forum posts are usually name-stamped), and collectively (if a forum is used per class/set). This kind of learning platform use both boosts students engagement with the learning process itself and anecdotally has generated significant impact upon students involvement and consequent attainment, but also provides a very neat audit trail for progression and value-added data for moderation and inspection purposes. One such example of this can be seen in the screenshot below.

The co-constructive nature of learning platform wikis also provides this kind of opportunity where students can use wiki pages to branch off and thus build upon their personalised learning pathway within a given topic, subject, lesson or unit. Again there have been measurable results seen about the engaging and empowering nature of providing these opportunities for students. For example, St. Stephen's Primary School in Bolton used Wikis in this way for a group of boys who had lower than expected literacy levels (60% Level 2 at the end of Year 4 in reading and/or writing) and who engaged and progressed in such a way that the same group showed 80% working at Level 3 by the end of the autumn term in Year 5 in reading and 70% in writing2. This is a profound increase in literacy standards within such a short space of time and a huge credit to the teacher who was working with these children.

Figure 2: Polehampton Infant School Question Wall1 Children's names have been removed.

Sharing Expectations and Providing Feedback

Typically, when we set activities to the learners in our classes we provide a series of expectations; about behaviour, focus, content, effort, structure or a whole range of other possibilities. These expectations, we hope, will be at the forefront of the learners mind whilst they are completing their work. When the learner has completed their work, there is typically a conversation between teacher and student about the results of these same expectations and the provision of feedback. Increasingly, schools are using their learning platform to streamline this process. Task Tools provide an easy way of doing this – pushing an activity out to a multiple students, and then receiving the consequent work in one central place (with the student still being able to view their work through their eportfolio). This in turn enables the teacher to mark the work, track progression and attainment and provide both formative and summative assessment for the student.

In many cases the feedback provided can be a mixture of assessment levels or grades, comments, targets, annotations or a sound recorded brief about the work produced and consequent action required by the student. The example below shows one such instance where the teacher has been able to access the work submitted by a class centrally, and then feedback through sound. Equally, many teachers have begun to explore the use of screen capture (for example, free Jing www.jingproject.com) which enables quick and easy screen and voice recording. By using this to talk though, highlight and annotate work online, teachers have been able to then send the screen capture embedded within the feedback comments provided, so that students can see exactly what their teacher is referring to as well as hear the commentary that goes with it.

Figure 3: Greenacre School in Medway, using the embedded sound recorder in their learning platform to provide feedback for student's assignments.

Self Assessment & Peer Assessment

One of the most frequently seen uses of a learning platform for Assessment for Learning recently has been the use of learning journals through blogging tools. Clearly, these are powerful tools because of the ability of the learner to record their reflections on learning through a range of text, sound, image and film depending on the preferences and ability of the child. However, where the impact upon learning has been most profoundly seen it is where the learning journal blog created and maintained by the child has then been viewed and commented upon by a range of people who are supporting that child's learning – for example teachers, parents, peers, learning mentors. When the focus of the content of the learning journal blog is upon learning (as opposed to listing daily activities that have been participated in), this provides a learner-friendly mechanism for identifying where learning experiences are going well, where there are gaps in understanding and who best can help support the learners to develop to the next stages.

There have also been instances where these learning journal blogs, when used regularly by learner, home and school, have been able to supplement and in some cases replace traditional termly school reports because there is an ongoing deeper level of understanding already in place. The termly school reports therefore are unnecessary as they are being 'outclassed' by the learning journal blog shared between student, home and school.

Figure 4: Using a Blog as a Learning Journal at Grappenhall Heys Primary School, Warrington3. Child's name has been removed.

Thinking Outside of the Box Class

Every assessment activity that we are already engaged with is for an audience, whether as teacher we are providing formative or summative assessment back to the student, or whether as teacher we are providing assessment data for moderation or reporting purposes within or beyond our school. Assessment for Learning is therefore by its very nature a social experience, and increasingly teachers are enabling students to become more skilled at using the social nature of assessment for learning activities.

In most classrooms forms of peer assessment are seen in every lesson – whether through students discussing their work with each other, or through peer marking. We frequently ask students to work together in small groups collaborating on assessable projects which again by their very nature mean that student's success and outcomes are dependent on their peers. Interestingly, running parallel to all of these school activities, students are online outside of school hours, working with their friends to explore common interests and feeding back to each other about their experiences of doing so, using online spaces (often social networking sites) to do so.

The example below is taken from Facebook, and is one of countless similar examples available over a range of different sites. The screen below can be accessed by anyone with a Facebook account and does not lie behind the safety of a protected learning platform environment. However, because learners are leading their own experiences and are encouraged to create social conversations, examples such as those below follow.

In this instance, there are 3,299 secondary students who have joined a group called "I can't wait to burn my anthology" where they have instigated discussion around a poetry anthology that they are using for a particular lesson at school. Three things are striking about this experience. Firstly, the students have autonomously created an opportunity to share their school learning experiences. Second, that 3,299 (and rising) students have found this opportunity and joined it – reaching far beyond their own schools and local communities reflecting a more 21st century global classroom. Third, that on the very first page, students are already outlining their learning intentions (see the Description – Study Groups), and provided further learning resources through the links available on the overview page.

Figure 5: A Facebook Group setup and run by secondary school students to discuss their English poetry anthology

The area becomes more interesting when viewing some of the discussion links within the area. One such discussion thread can be seen below, with names removed, although all of this is publicly available to anyone with a Facebook account, and it is very useful to see these areas in context to gain a better understanding of the ways in which this is being used.

Here, the students begin with a social exchange about a particular poem that other students have been critical of. This quickly stimulates students to ask questions about aspects that they do not understand, and to support each other's development and understanding through suggestions and opinion exchange. Towards the end of this dialogue students can be seen making recommendations about how to tackle related exam questions.

This kind of dialogue is taking place without any support or intervention of a teacher. Imagine how this could be built upon within a safe learning platform environment, where students are empowered to have these kind of conversations with peers in their school and beyond, supported by teaching teams who link students to related activities and resources within the learning platform to further enhance this experience.

Figure 6: This Discussion board is available to view without needing to Join the Group "I can't wait to burn my anthology". Individuals have their names and photographs attached to their posts, but have been hidden in this example.

So how can a learning platform enable AfL to become safely social in practice?

As a consequence of the changing trends of both assessment for leaning inside school, and an increased engagement in online interaction outside of school, there appears an opportunity to use these two experiences for mutually beneficial purposes. However, while some teachers are happy to make this leap, most of us feel more comfortable moving gradually in this direction at a somewhat steadier pace. Perhaps the following 6 points could be stepping stones to move from existing practice towards these kinds of ideas. The ideas in blue provide some suggestions of how learning platform tools can enable these stepping stones to be achieved in practice.

1. Learners become ***aware*** of the success criteria of their learning experience and realise that their work will be assessed against this, therefore being more informed by their teacher;
Learners could access learning objectives through NEWS or CALENDAR tools for both the lesson, day and term/year ahead.

2. Learners ***digest*** the success criteria given to them and identify the relationship/correlation with their own work achievements themselves through self-assessment once work is completed;
Learners could use a learning journal BLOG to identify where their work has met the success criteria, and to what extent - they can link these observations to evidence through photos, sound recordings, film and work samples as well as linking directly to work completed within the learning platform / their eportfolio (see figure 3).

3. Learners ***immerse*** themselves in the given success criteria in order to focus their efforts during the process of participating in a particular learning activity;
Learners could use a WIKI to structure their outcomes in such a way that clearly identifies how they have met the success criteria - for example branching off showing references or further sub-sections in more detail, tracking versions of a wiki page to show self-improvement and vocabulary extension, wiki commenting to show extended or critical thinking. There are some superb examples of this stemming from Radstock Primary School[4].

4. Learners consider the success criteria of ***larger scale*** learning experiences in relation to the activities being addressed and use this to extend the aspects in which they excel and build upon aspects that are found more challenging (for example, how an individual piece of work affects the grading for a module, and therefore seeking help to boost weaker pieces of work, and extend more successful pieces);
Learners could self-evidence their strengths and areas for development against specific tasks and targets through TASK SETTING - for example students providing work samples to evidence writing standards improvement, or photographs of a DT project at different stages of development showing the progression taking place. There are some superb examples of this in practice within the Early Years Foundation Stage (see www.graysschool.co.uk for a film about this which recently won a Becta Excellence Award).

5. Learners *relate* coverage aims to success criteria in order to map out a learning journey with several stages and development points, and work alongside other learners to achieve this.
Learners could use their EPORTFOLIO to map out their intended learning journey, using this PERSONALISED

LEARNING SPACE to link off to people, places, communities and opportunities where they are able to turn these plans into practice before, during and after. This exact same process can be carried out collectively using class areas with TOPIC/MODULE MAPS linking to the related people and places (activities and resources). Collaborative Projects such as these are showing measurable impact upon attainment standards[5].

6. Learners *identify* learning needs, and decide upon the most appropriate approach, including who is able to help them, carry out their actions, review outcomes and highlight learning consequences (Action Research). *Learners could create SPACES where they shape a learning journey which is going to best address the targets and objectives that they are working on. Learners then invite other learners into their COMMUNITY in order to COLLABORATE through a range of activities such as WIKIS and FORUMS in order to CO-CONSTRUCT knowledge and understanding, and to evidence this process. They are then able to quantify this EVIDENCE for more formal assessment or examination both qualitatively through their learning journal BLOG and quantifiably through self, peer and teacher assessed MARKSHEETs with suggested next step targets for future learning.*

What does all this mean to each of us?

Ultimately all of these ideas and examples are based around the fact that learning is all about human interaction. The social nature of learning means that it is just not possible to learn in complete isolation - even purportedly isolated activities such as reading a book require someone to write the book first so at the very least there are 2 people involved in the learning experience. The recent Digizen Report (www.digizen.org) shows yet more compelling evidence that there are already benefits being seen in the ways that social learning tools and spaces are supporting personalised formal and informal learning.

With technology engaging more and more people through spaces and communities, and all schools currently exploring ways in which this technology can be used purposefully to enhance and extend learning – particularly learning platforms, it is perhaps our role to use these opportunities both for our students and for ourselves to engage in more social forms of learning experience both within. We each all belong to existing communities of learners – our class, our year group or department, our key stage, or school, our cluster, our LA, our country, our professional network. How can we use these online spaces to increase the engagement of those within our communities, particularly those who have not yet discovered the benefits of this kind of use of technology? Consider this quote from Boyd & Ellison6 about the nature of spaces which enable learners to learn socially together – including social networking sites;

> *"What makes social network sites unique is not that they allow individuals to meet strangers, but rather that they enable users to articulate and make visible their social networks".*

The point to note is that it is the visibility that is important to the learner. Once we are within the safe space of a learning platform, the visibility that we can provide for our learners (both our students, and those colleagues who have not yet discovered the benefits of this style of learning) has some profound opportunities. Opportunities to link to learning partners, learning mentors, experts, home, school and beyond, people who all share one thing in common – that they all are seeking to learn with and from each other.

So perhaps the question that we might want to start our day with tomorrow is not what we are learning/assessing today, but who we are going to be learning/assessing it with.

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1 Fig 2 With kind thanks to Marianne Wilberforce, Polehampton Infant School, Wokingham

2 Fig 3 With kind thanks to Katie Hague, St Stephen's Primary School, Bolton.

3 Fig 4 With kind thanks to Matt Boot, Grappenhall Heys Primary School, Warrington

4 Article in Sharing Good Practice by Philip Griffin, Year 6 teacher at Radstock Primary School, Wokingham: http://www.ictopus.org.uk/downloads/sgp/SGP30.pdf

5 Child Education, September 2008: Teddy Bear Technology

6 Boyd, D.M., & Ellison, N.B., (2007) Social Network Sites: Definition, History and Scholarship. Journal of Computer Mediated Communication 13 (1).

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UK Access Management Federation - Providing a framework for simplified sign-on

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Supported by Becta and JISC, and operated by JANET(UK), the UK Access Management Federation ('the UK federation') provides Schools, Further and Higher Education and Research sectors with a framework for accessing online learning resources. The UK federation is made up of 'identity providers' (IdP) such as Local Authorities, Regional Broadband Consortia, Universities and Colleges, and 'service providers' (SP) such as publishers of online resources.

Members of the UK federation agree to a set of policies for exchanging information about users enabling access to, and use of, online resources and services while protecting the privacy of the individuals. The UK federation recommends the use of software called Shibboleth, which is a framework for federated access management and is capable of granting individual learners with secure 'anytime, anywhere' access to educational resources.

Why Federated Access Management?

Harnessing Technology Grant: Guidance to Schools and Local Authorities publication states that schools and Local Authorities should:

> *"Provide access for learners and teachers to online learning resources through membership of the UK Access Management Federation and the use of simplified sign on."*

In addition to the 'anytime, anywhere' access model required to help realise the Government's e-strategy initiative for every student to have a Personal Learning Space; recent initiatives for Home Access and Online Reporting to Parents have highlighted the need for a method of authenticating users to gain access from outside the school boundaries. By aggregating the authentication service at the Local Authority or Regional Broadband Consortia level; education delivery partners can provide a joined-up approach for access to e-resources for the mobile learner.

Simplified Sign-On

The standards based technology deployed in federated access management allows for a simplified sign-on improving the user experience by providing fewer login credentials for them to remember, offering seamless transition between education delivery partners.
Becta's Harnessing Technology: Next Generation Learning strategy highlights the importance of simplified sign-on in supporting ongoing 14-19 reforms:

> *"As the new diplomas are introduced, more learners in the 14-19 age range will be studying in multiple settings: at school, in college and in the workplace, technology is essential in co-ordinating delivery across these settings, providing learners with the continuity they need through remote access to information, resources and support…"*

Corporate ICT can also benefit from the functionality of simplified sign-on when authenticating citizens. Many of those will be users of both local authority services and educational services whose user experience will be enhanced by using the same login credentials for all services.

How does it work?

Shibboleth separates the processes of authentication and authorisation. Authentication is managed by the user's identity provider, such as the Local Authority or Regional Broadband Consortium. Authorisation is managed by the service provider, based on user attributes that are released in a controlled manner by the

identity provider. The ability to grant access based on the role of a user (for example, Key Stage 3 pupil from Local Authority X) rather than personal attributes such as their age, mitigates the need to release personal information. This protects the privacy of users and makes it easier for identity providers to conform to data protection legislation and policies. Further information about the Shibboleth architecture can be found at: http://www.ukfederation.org.uk/content/Documents/HowItWorks

Identity Management

Not all the challenges facing organisations deploying federated access management via the UK federation are technical. The major work can come from aligning the different identities found within the organisation. There may be different login identities for each of the MIS, learning platform, email, and organisation portal. Identifying the individual and their entitlement to access services online can be far more of a challenge than installing the software.

South West Grid for Learning Trust implemented an IdP for their 2,400 schools last year. Ian White, Technical Consultant, says “There is a lot of identity matching to be handled; a user can be a teacher at one school, a governor at another, and possibly even a student at a third.”

East Midlands Broadband Consortium (EMBC) has also deployed an IdP and Ben Ellis from Synetrix has provided technical support to them throughout the project. Ben agrees that “Everything hinges on identity. A user just has to login once to get e-mail, a portal site, a personal web site and access to services provided by Shibboleth-enabled Content Providers. Having one central AD means that EMBC can ensure the right attributes are available through the IdP service. Through the EMBC SharePoint portal, schools can create logins for all their pupils, allocating them services and setting their filtering levels.” The full case studies for these organisations and other sectors can be viewed at: http://www.ukfederation.org.uk/content/Documents/CaseStudies

Participating in the UK federation

Take-up of the service in the schools sector is gaining momentum with 35% of Local Authorities within England where schools have access to an IdP service. Both Scotland and Northern Ireland have also deployed IdP’s to serve their schools. With the planned changes in the funding for Further Education services currently provided by the Learning & Skills Council, local authorities can utilise the flexibility of authentication via the UK federation to bridge the cross sector and cross border gap.

The UK federation currently has 71% of Further Education colleges and 90% of Higher Education institutions signed up to membership as well as some 140 resource and service providers.

Schools can join the UK federation through their Local Authority or Regional Broadband Consortium in England, Classroom 2000 in Northern Ireland, or Learning and Teaching Scotland.

Local Authorities should speak to their RBC to see what provision is planned for an IdP service in their area. Identity provision at this regional level will enable authentication across sectors and LA boundaries making access to online services for the delivery of 14-19 reforms easier and improve the user experience for transition between learning providers.

Find out more

The UK federation runs a number of events to help inform the community of developments and benefits of federated access management. Details of these events and the series of training courses provided for both identity and service providers can be found at: http://www.ukfederation.org.uk/content/Documents/EventList. Further information about the UK federation, including a list of current members, can be found on the UK federation website: http://www.ukfederation.org.uk/content/Documents/MemberList

To be kept up to date with UK Access Management Federation developments and discussions, please subscribe to the following UK federation mailing lists, through the support section of the UK federation website (see below).

- UK federation Announce
- UK federation Discuss

Links to these mailing lists can be found at: http://www.ukfederation.org.uk/content/Documents/FedSupport. For further information, please refer to the federation website: www.ukfederation.org.uk

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South West Grid for Learning Trust – Case Study http://www.ukfederation.org.uk/library/uploads/Documents/swgfl-study.pdf

East Midlands Broadband Consortium – Case Study http://www.ukfederation.org.uk/library/uploads/Documents/embc-study.pdf

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February Online: a flexible learning project.

Author: Jim Fanning, Assistant Headteacher,Tideway School

Tideway School used its learning platform to deliver a programme of online curricular activities for the whole school community over one week in February 2009. Students were not allowed on to the school site at that point as staff and resources were being re-located from their old buildings into new premises. February Online minimised learning loss and gave teachers, non-teaching staff, students and parents/carers the opportunity to explore and experience what flexible, anywhere-anytime learning might look like.

Students had the opportunity to study the curriculum wherever and whenever they had access to the Internet, with online support being available via telephone, email, forums and video conferencing. Internet provision was made available in local centres for those students who did not have access at home. For teachers this challenged a whole range of assumptions that they had about the nature of learning and comparisons between face-to-face and online teaching. For many students this was their first real opportunity to truly manage their own learning. A number of parents stated that the project allowed them to become involved in learning in a way not possible without the technology.

Background

Tideway School is an 11 to 16 comprehensive of 650 students that serves the coastal community of Newhaven in East Sussex. In 2004 about 80% of the school infrastructure was destroyed as the result of an arson attack. In the four years since then a new school has arisen on the site of the old one. This was opened in February 2009. During the move into new premises students would be given an extended end of term two week break. The school used this opportunity to provide an extensive online curriculum package to students through the school learning platform.

The Project

Tideway has been using its current learning platform since July 2008. This platform is called UniServity. The aim of the February Online project was to make as much of the curriculum as possible available online to students. Students could also collect a paper based workbook and some lessons, such as PE, were arranged off-site in local community sports facilities.

The online project was based on the assumptions that: most students would choose to work online; most would choose to work flexibly, at a time and a place that best suited them; the quantity of work produced and the completion rate would be greater than in face to face lessons; the quality of work would be higher.

The project aimed to explore the following areas: How could the school make provision for those who had no computer hardware or Internet access at home (digital exclusion)? What did online learning look like and who had the necessary skills in school to design appropriate learning opportunities? Six months after the introduction of the learning platform what skills had students developed in its use and what skills gaps still existed? What skills had teachers developed in their use of the learning platform and what skills were still required? What were the implications for current school structures of anytime-anywhere flexible learning?

Timescale

The project was introduced at middle leader meetings and promoted to staff from September 2008. Heads of Subject were required to produce lesson plans and lesson resources by December 2008. Parent and student

awareness of the project was raised through articles in the school newsletter. A full school survey relating to student out of school access to technology was held. The results of the survey revealed that approximately 7% of the student population lacked home access to PC hardware and the Internet. From December the project was promoted in school assemblies. Every student was issued with a business style card that provided a reminder of login details for the school website and learning platform. An ICT bulletin was published for parents. The assistant head teacher and network assistant responsible for designing the project attended a two days at a technology workshop designing content for the site. Draft versions of the Key Stage areas where made available online to staff before the end of December. A survey of local community provision took place. In January 2009 regular e-mails and news bulletins updated students and staff. Bookings were made at the local Children and Families Centre and library for student access to the Internet during the break. Staff were recruited to supervise student use of technology in these centre's. 35% of students expressed an interest in working from workbooks as opposed to online. Workbooks were collated and printed during the last week of January. Design of the online lesson areas was ongoing. During the last two weeks of term students were introduced to the online lesson areas in lessons.

Ensuring that students remembered their login details was obviously critical to the project. The practice access sessions prior to the break revealed up to 10% of students failing to remember or record username or password details. Technical issues with the site were identified in ICT lesson time when students were allowed to explore the online lessons. A pre-launch test of the site by students was essential. The single biggest issue facing the designers of the site was the range of learning materials supplied by staff. Some provided copyrighted materials that could not be used online. Many did not utilise the full potential of the platform in relation to video and audio material. Little or no differentiated material was supplied. Few suggested the incorporation of the platform collaborative learning tools into lessons e.g. discussion forums or message boards. There was an underlying assumption that a resource, be it a word processed document or a presentation that was used in class, could simply be uploaded to the site for students to successfully use. Above all this revealed a need for ongoing staff training in relation to the potential uses of the platform.

The time involved in designing online content far exceeded what had been planned for. As far as possible lesson files were made available in a range of formats. Those students who did not have access to Microsoft Office were encouraged to download OpenOffice. The site designers were also aware of their lack of skills in relation to designing for learning. They recognised their limited understanding of the ways in which students best learned online.

The following guiding principles were applied to final lesson design: as far as possible lessons should have a collaborative aspect (i.e. a message forum where students could post lesson discussions). Forums would be moderated by the project leader and subject staff were asked to check them regularly for student input. (Students had little training or no experience of forum use in school and it was expected that participation might not be high, but that at least their inclusion in lesson design would raise their profile). Colour should be used to highlight keywords on a page. Where pages appeared too wordy a sound file would be included so that pupils could listen to a reading of the page. Sound files were broken down into small 'chunks'. Each lesson should have a link to video resources although it was recognised that Internet connection speeds might be unsuitable for accessing larger files.

It was accepted that good web design should involve as little scrolling as possible but in practice this was not always feasible. Information, resources and files should never be more than two mouse clicks away. Common graphics for standard actions and tools were used across lessons e.g. forums, wiki's, file downloads. In some lesson areas text was dispensed with totally in favour of graphic representations of tasks that had to be completed. This was done with the aim of exploring which designs most improved access for learners. Ariel font was used on the advice of the learning support department. The department also advised that the colour

beige should be used as a background as this improved access to web pages for those with reading difficulties. In practice this advice could not always be followed and students were encouraged to set their own background colours on their own home PCs.

'Going Live'

During the break there were over 5000 student 'hits' on the website. It would have been useful to analyse in greater depth 'who' was accessing 'what' and 'when', but, partly due to the limitations of data that is available from the system and partly due to a lack of expertise in school, this has not taken place yet. Ten students used email support. The impact of 'anytime' access on teacher workload needs further investigation. Eight students made use of MSN chat or video conferencing support. Live conferencing was provided at specific times in the week, although some students requested support at other times. Video conferencing support was an interesting experience. Parents and carers very often either 'hovered' in the background or actively participated in a discussion about the lesson. Discussions about learning became a mix of academic and social chat.

It might be useful to consider February Online as an example of a Personalised Learning Environment (PLE) rather than sole use of a VLE. Student support consisted of using the learning platform with a range of other applications to provide a more holistic learning experience.

Most subject areas had a forum presence. As predicted these were little used by students with the exception of Year 9 History, where there were some good examples of threaded discussions. Students had to 'write a letter from the trenches' and post it into the lesson forum for comment by other students. Forum use may lend itself to most appropriate use in some subject areas than others.

A small number of subject areas did not use the pre-break opportunity to check content and induct students. As a result some errors were only discovered as students tried to access materials over the break. A small number of students had some difficulties accessing files in the formats that had been provided. Issues tended to relate to student skills rather than the formats themselves.

Aftermath

On the return to school after the break some staff commented on the sheer bulk of student work that was produced and time issues relating to effectively assessing it. Some parents raised a concern that student work may not have been assessed in what they considered a timely way. A range of comments were made in student interviews. *"Why did some subject areas scan pages from textbooks and put them on the platform? They were difficult to read on the screen when they were downloaded and it's a pretty pointless exercise when they could have simply given us the books." "We would have preferred a central area where we could have uploaded work. It was confusing having a choice of uploading, emailing or bringing it in on a memory stick for a teacher."*

Comments from outside advisors highlighted the lack of differentiation in certain subject areas. e.g. *"subject x provided the same work for Year 7 and Year 8 classes; subject y did the same for Year 8 and Year 9 classes. There was little obvious evidence of differentiation between the work that was set and the learning objectives for the different age groups"*

Staff were asked to identify work that was of a high standard and 85 student certificates were awarded. During March a whole school questionnaire was completed by students. Questionnaires were mainly completed in tutor time allowing staff and students to discuss their experience of remote working.

Analysis of this data is still taking place but some interesting information is beginning to emerge. The February Online questionnaire was completed by 550 students out of a school role of 648 (85% completion rate). The questionnaire was voluntary and anonymous.

Questionnaire

I have a computer that I can use at home. YES / NO.

39 students (7%) did not have access to a PC at home. This was in line with the figures gathered in a whole school survey of home access to technology in
September 2008. It suggests that, in terms of 'digital exclusion', this figure may represent that hard core of families who will never have access to home based technology unless supported by an outside agency (e.g. school). There was no obvious pattern amongst the different key stages surveyed. Student interviews suggested one further aspect to the issue of digital exclusion which this question did not tackle: *"I took a workbook even though we have a PC at home. There are four of us at home and I could not guarantee that I would be able to use the computer when I wanted it."* It is 'unsafe' to assume that because a student has a home PC they will be able to access it for learning. Pressure to use the PC may come from other members of the family.

I can use the Internet at home. YES/NO

A further 20 students did not have access to the Internet at home (i.e. 59 students in total could not access lessons online – 11%). During February Online, Internet access was made available to students through the local library and Children & Families Centre. Students were informed of these arrangements and required to book a PC in advance through the school. Teacher support was provided during Monday to Thursday mornings. On average, 10 students per day visited the library for the purposes of the project. Most had independently booked a PC. 50% of students attended the library with a parent. A high percentage of students were those who would normally access learning support in school. Most, despite the fact that they were completing work online, had also taken paper based workbooks from school. On average students took longer to complete online work than they would work based in school. "Student x requires a lot of individual support when he is in school and has difficulty remaining in a 1 hour lesson. He worked for about 2 hour's day in the library with support from his mother." (Teacher observation).

My Internet at home is BROADBAND. YES/NO/DON'T KNOW.

394 (72%) students said yes; 26 (4%) said no; 130 (24%) students did not know if their home Internet access was broadband. Increasingly broadband access is required to make effective use of the resources on the school platform.

During the holiday I used February Online. YES/NO

321 (58%) accessed learning online. 229 (42%) students did not access learning online during the project and completed work using the workbooks they had requested. Workbooks were printed according to individual needs. A range of reasons were given by students for requests for paper based workbooks included:

- I prefer writing and handing it in, not sending everything through email.
- It's easier to design a poster by hand. I know paper is not going to crash.
- On paper I could work anywhere.
- I enjoy writing and I'm not very good with computers.
- I get distracted online.
- I'm not very good at typing on the computer.
- I preferred working on paper just in case my Internet was playing up.
- I will not lose it and I won't get distracted by playing games.
- Improves writing and spelling skills.
- Because I work harder with a booklet.
- Because I rarely go to my dad's where he has Internet.
- When I'd go on the computer I'd get distracted by things like msn, Bebo.
- I didn't like the way that February Online was set out.

- Because the online would not work all the time.

The most popular reasons for using a Workbook as opposed to accessing learning online were: on paper students could work anywhere (40%) (e.g. one student attended work with his mother and could only complete work on paper whilst there). Working online would lead to distractions (email, Facebook, Bebo, YouTube) (30%). Lack off access to a PC because other members of the family used it or 'the Internet was round my dad's house' (10%). Design issues with the site / students did not understand how to access materials (6%). The platform was not accessible at times (2%).

I spent between 1-4 hours 5-9 hours 10 or more hours working (online). 213 students replied to this part of the questionnaire. 1-4 hours: 42 students (20%). 5-9 hours: 115 students (54%). 10 hours or more: 56 students (26%).

I did some of my work with my parents: YES / NO. Yes: 138 (38%). No: 183 (62%).

I did some of my work with my friends: YES / NO. Yes: 61 (19%). No: 260 (81%).

I did more work online than I would working in class: YES / NO. Yes: 185 (58%). No: 136 (42%).

It would be good to study some lessons online away from the classroom: YES / NO. 321 No: 77 (24%). Yes: 244 (76%).

The project has transformed learning in a number of ways. For flexible learning to become embedded in school culture we need to ensure that out-of-school access to technology is available to students. Tideway is now piloting a Digital Access Project, giving KS3 students who do not have the hardware at home, a laptop and Internet access. The challenge of building anytime-anywhere learning into the formal curriculum (where the school day and timetable are not flexible) has been taken up by our Digital Learning Department where Year 11 students are being given the opportunity to study in a blended way (some face-to face teaching, some online work out of school or at place and time where students feel they learn best, all through negotiation with their teacher). Flexible learning is a high priority in the consultations taking place over the whole school Five Year Development Plan, with a KS4 timetable and curriculum that is very different to what is in place at the moment.

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Naace

Case study: Model school turns a new page with innovative technologies

The 21st century sees many schools embracing new technologies and learning and teaching initiatives to further students' achievements and whole school academic success. Godmanchester Community Primary School has done just that and in doing so has achieved a beaming Ofsted report and Model School status.

Background

Located in rural Cambridgeshire, Godmanchester Community Primary School educates 420 pupils aged between four and 11 years. With 17 teachers and 14 assistants, the school makes every effort to meet the individual needs of each student.

With less than eight per cent of its pupils having Free School Meals (FSM), Special Educational Needs (SEN), and English as a Foreign Language (EfL), Godmanchester currently stands in the top quartile of schools.

Challenge

Lesley Fisher, literacy co-ordinator at Godmanchester Community Primary School explained: “We previously found our pupils were distinctly lacking motivation to read and write. Many of our boys especially found the skill of reading and writing a difficult task. It was often apparent that the children had numerous ideas in their heads but just could not write quick enough to put these thoughts on paper. They were frequently anxious about writing messily and creating grammatical errors.”

To nurture the student’s passion for literacy, a solution was urgently needed. Staff wanted to explore new technologies and teaching strategies in order for the students to develop a love for reading and writing.

Lesley continued: “As a school that places great importance on providing stimulating and interesting activities to inform and challenge its pupils, we were looking for a solution that gave a truly personalised approach to learning whilst also providing teaching staff with feedback that could help them tailor their pedagogical delivery. Group work is a daily occurrence at Godmanchester therefore we were also looking for technologies that allowed for each student to work individually.”

Solution

Godmanchester, looking to address the school’s literacy standards rolled out innovative reading software that allowed the children to read books set at their own literacy level and then complete engaging quizzes to test their knowledge. Lesley revealed: “Through this highly engaging reading programme, teachers can create a customised reading scheme to suit the needs of each individual student. We can select books that are challenging and specific to the requirements of each student so that frustration and boredom do not arise. Vocabulary growth, literacy skill development and reading skills can be effectively monitored.”

As a small community primary school, Godmanchester was keen to optimise the school’s resources and ICT availability for the pupils. It was also keen to address the too frequent worries of handwriting abilities within its student population. Addressing every child’s needs was high on the agenda at Godmanchester. The school therefore purchased a number of portable writing tools to place on each child’s desk.

Computer access in the classroom was previously limited and this often affected completion times of the students’ work. To be able to use ICT on a daily basis and not have to wait for the classroom’s computers, allows each child a distinctly personalised approach to learning.

The pupils now participate in a number of writing tasks, be they group or individually based. They can move the portable writing tools around the classroom with ease, to work in groups if they so wish. This has allowed for some very productive lessons and the children have been eager to express their creativity. No longer do the teachers hear moans in the classrooms; students are not scared to try and type their essays or answers amongst their peers, something they were anxious of when completing a pen and paper writing exercise.

Benefits

Modern technologies have transformed the school's approach to reading. Lesley explained: "Teaming our reading and writing strategies with new technologies has resulted in fantastic achievements. The ability to transfer their thoughts onto the portable word processors has really inspired and motivated our boys to read and write. The students can complete independent tasks such as writing a poem or they can work collaboratively with their peers through the Infrared link on the writing devices. Teaching has become increasingly efficient and student-focused."

With new found confidence, students eagerly report their views on the school's reading and writing strategies. A nine year old student told Lesley: "We used to have to queue up to take reading quizzes on the computer, now we can do them at our own desks on our NEOs which minimizes time wasting so we have more time to do what matters, such as reading or typing."

Through the implementation of the word processors the students' touch typing skills have advanced dramatically. At the start of the day all students complete a five minute typing task. Weekly typing challenges encourage the children to work hard at their typing skills. Lesley said: "We now have 11 children in Year 6 who type 85 words per minute. With the average touch typing speed at 35 to 40 words per minute, this is a great talent in my eyes."

Another student at the school said: "Learning to type quickly has really helped me with my class work. Sometimes we are asked to write long pieces of writing, so being able to type speedily means that I can complete it in no time at all."

Children are allowed to use the writing and reading programmes at lunch if they so wish. The hand held word processors, being so lightweight, allow the children to sit outside in the playground or on the field while they create their essays or poems, for example. Children no longer have to worry about losing their paper based work, all their work can be typed safely and saved on the writing devices.

The cross curricular writing strategies embraced by Godmanchester have also benefited the teaching staff as Lesley confirmed: "Feedback is instant. Our reading software automatically prints out a report showing how well the pupils have performed. The word processors also allow for wireless printing therefore the children can print their writing tasks at the click of a button to either hand in to their teacher or take home to show their parents. This is great for us as teachers because we can monitor class progress but it also proves to be highly rewarding for our students."

The literacy progress reports also benefit the parents of Godmanchester. Through Home Connect, parents can log in from the comforts of their own homes to see their child's reading progress at school. Parents can opt for an email report to be sent instantly when the child completes a reading quiz. The report provides parents with an overview of their child's interest in reading, for example, the types of books read and the authors' names. Lesley added: "These email reports have a knock on effect to our parent's evenings; parents are better informed of their child's progress and so discussions are thorough and very helpful for all involved."

Parents also comment on their child's abilities to type. "I am absolutely amazed by the transformation in my son's approach to his school work. He used to be so nervous about his writing tasks, often becoming very frustrated and upset. His typing skills really have come on leaps and bounds and now he can't wait to complete his creative writing work. It is a pleasure to watch him enjoy his school work," explained a parent

at Godmanchester.

A notable achievement at the school is its recent Ofsted report. The inspectors were very impressed by pupils' knowledge and passion for reading and writing. They were highly complimentary of the new technologies at the school and the whole school reading ethos; something they had not seen before. Ofsted rewarded the school with the following comment: "A great strength of the school is its readiness to embrace new initiatives and nowhere is this more evident than in the curriculum. The innovative uses of cross curricular writing strategies, on-line testing monitoring and home access are just some of the examples that have made a significant impact to pupils' achievement."

The school has also been rewarded with ICT Mark, a national accreditation scheme which gives schools recognition for their achievements in using technology to deliver excellent learning.

Further recognition of the school's dedication to advancing literacy standards amongst its pupils arrived in March 2009. Godmanchester, awarded Model School status by its reading programme provider, is the first of 2,500 schools in the UK using the reading software to be recognised for its longstanding efforts and outstanding achievements. Lesley explained: "We are thrilled by this recognition of our hard work. The whole school, be they pupils, teachers or assistants, have worked avidly to create a passion for reading and writing and this status, partnered with our recent Ofsted report, is the icing on the cake."

Looking forward

Godmanchester Primary Community School will continue its commitment to advancing literacy standards as it is highly aware of the strong correlation that exists between reading practice and academic success. Not only is the whole school reading culture important for Godmanchester students from an academic perspective, but it is proving that daily literacy and typing practice shapes more confident students with heightened self-esteem and enhanced behaviour and attitude.

Keen to further exploit new technologies, Godmanchester looks forward to the use of Google Docs on its portable writing tools. This will aid completion of work at school and then students can access their work from the comforts of their own homes. Learning will no longer be confined to the classroom.

Links with international schools also makes for an exciting near future at Godmanchester. Suggested by a Year 6 student, the school is at present establishing links with a partner school in New York City to exchange ideas about literacy practice and use of innovative technologies. Working collaboratively with their peers across the world opens up numerous learning opportunities for the students and is a further testament of the school's commitment to offering a thriving education to all.

Godmanchester Community Primary School uses Accelerated Reader™ from Renaissance Learning and NEO 2 from AlphaSmart, a division of Renaissance Learning.

For more information visit www.renlearn.co.uk

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Naace

Case Study: St James School transforms education at Tsunami struck school

Having raised thousands of pounds through various fundraising events, St James School, specialist in mathematics and computing, has installed and currently supports a state-of-the-art IT suite at St Joseph's college, Sri Lanka. The Sri Lankan college, devastated by the 2004 Tsunami, now boasts a partnership with a leading ICT school in England and outstanding computing facilities for both the staff and students. Through St James's remote desktop link and learning platform, Frog, the head of ICT can take complete control of the ICT suite at St. Joseph's across the globe. Instant communication and collaborative work can now take place between the two school populations.

Background

St James School, based in Exeter, is a comprehensive community school catering for 653 girls and boys aged between the ages of 11-16 years. As a specialist school in the subjects of mathematics and computing, the school embraces new technologies and innovative teaching.

Transforming the lives of Sri Lanka's school children

One of the school's main objectives is to make a positive contribution to the community – both local and global. For this reason, St James leapt at the chance to build links with international schools, especially with those less fortunate across the globe in Sri Lanka.

The Sri Lanka tsunami of 26 December 2004 resulted in widespread devastation. Tens of thousands were killed and displaced as a result of the endless miles of coastal, inland and infrastructure damage. Schools were destroyed, wrecking the lives of many children and young adults.

Leading ICT School, St James, was keen to provide aid and eagerly teamed with Rotary Club to raise funds for St. Joseph's College, just one of the Tsunami-struck schools in Negombo, Sri Lanka. In just twelve months the school raised in the region of £4500-5000 for St Joseph's. The schoolchildren, with pleasure, took part in non-uniform days and also arranged copious charity days to raise as much money as possible for their peers at St Joseph's.

A teacher's trip of a lifetime

In July 2008, Keith Price, director of specialist status (mathematics and computing) and head of ICT, and Duncan Goodland, network manager of St James School, travelled to Negombo. Their task was to install 26 desktop computers and offer expert training to the staff at St Joseph's on basic packages such as Microsoft Word. Previously owning only two computers, St Joseph's School was immensely excited about this implementation and partnership with a leading specialist school in England. A mere one per cent of schools in Sri Lanka are fortunate enough to have access to an ICT suite, so St Joseph's was overwhelmed by this offering of facilities that they could once only dream of.

Keith Price remembers: "The teachers were in utter awe of the technology. It was a pleasure working with the staff and students of the school. They are all so eager to learn and explore the possibilities."

Keith Price and Duncan Goodland, now back on UK soil, are able to communicate instantly with St. Joseph's School and respond to any ICT problems or enquiries.

Keith Price explains: "Through our remote desktop link and state-of-the-art learning platform, Frog, I can take complete control of the St. Joseph's ICT suite. If there are any ICT problems that the staff at St Joseph's are unable to fathom, Duncan and I can rectify them from our office in the UK. We also have an online blog whereby we can speak with Chrisantha Fernando, English teacher and ICT technician at St. Joseph's.

"We have day-to-day communication with Chrisantha about ICT related enquiries. To be able to share our wealth of ICT knowledge and make a difference to a troubled school across the globe is a great feeling."

The year ahead

Thanks to the Department for International Development (DFID), in the summer of 2009 Keith Price is once again travelling to visit St Joseph's College. His task is to provide further training on the computers. He will also focus heavily on the learning platform and the range of academic possibilities with digital learning and Web 2.0 technologies. Keith hopes to install a webcam in the computer suite so that the two schools can benefit from a visual connection via the learning platform. Through this global video link the school aims to take part in collaborative school projects. Learning and teaching resources will be shared in an attempt for education in Sri Lanka to flourish.

Exciting advances will arrive in September 2009 for the new academic year. The students will be given access to a global communication pathway through the Frog learning platform. Here they will be able to use their email accounts and the webcam facility. It is hoped that the students will establish 'pen friend' relationships and learn from each other's cultures and academic experiences.

Keith Price comments: "There is so much to be learnt by both the students and teachers through this global connection. Our two schools are physically worlds apart but also in terms of academic offering. The facilities at St Joseph's are so very limited and here at St James we are privileged to have access to a large number of state-of-the-art facilities on our campus. We want to share our services and make a difference to school children across the globe.

"Through the webcam facility we hope that our students will learn about the day to day life of Sri Lankan school children, while the video link serves to provide hope and aspiration for the children in Negombo. The teachers at St Joseph's will be encouraged to utilise our online lesson plans and teaching resources, while the students will be able to make use of all of our online learning resources such as PowerPoint presentations, fact sheets and quizzes. To dramatically transform education at St Joseph's would be a dream come true."

For more information visit www.frogtrade.com

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Naace

A Message from Ages Past

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

Author: Paul Heinrich

A month or so back teacher Martyn Wilson sent me a copy of an exam paper. Noting exciting in that you might think, but this exam paper, like the crocodile is a survivor from the Jurassic period,1989 to be exact, which is pretty well Jurassic in ICT terms. The paper in question is not GCSE or Functional Skills, its a 1st Year (or Year 7 as we now know them) exam. So how does it compare with current expectations?

Y7 Exam Paper 1989 (pdf) (29.2k bytes)

Y7 Exam Paper 1989 (Word) (80.9k bytes)

Twenty years is a long time in ICT. Those were the days when the Acorn A320 was new and exciting and much computing was done on the BBC Master and RM Nimbus machines. (Younger readers should resort to Wikipedia at this point - the rest of us can wallow in nostalgia!). Those were the days before multimedia, high quality graphics and the Internet, which appeared almost five years later. Children creating digital images and video, let alone publishing these to others anywhere in the world was, literally, the stuff of science fiction.

The software available in 1989 was, by modern terms, spectacularly limited. Who now would want to create long documents in word processors such as WRITE or databases in QUEST. Yet we did and knew and understood their potential, not just in the subject that evolved into ICT but as cross-curricular tools. Even by then the software had developed from the early days of the BBC B and similar that many of us started with in our classrooms.

To some extent the tools reflected the ways in which IT was used in the workplace in those not so distant days - data handling and text-based information (usually printed). But we also taught "ICT in Society" as part of that early National Curriculum, and that too is reflected in the paper, which was designed for a grammar school class.

So, where is this leading? Look at the paper and compare its content with e.g. the Functional Skills papers currently being trialled. Do you notice anything? How would modern students respond to this paper, especially those in Year 7, let alone the Year 10s and above testing Functional Skills. They may not have to produce a PowerPoint or edit a page on a social networking site but I suspect that some (many?) may be challenged by the depth of understanding required, even if the questions are updated to reflect more familiar software tools.

Try it! A Word copy is provided above for just that purpose. An if (when) you do please tell us you findings using the comment wiki functions at the bottom of this article. The debate over standards, relevance and preparation for work is just as important now as ever, perhaps more so with an election pending and significant differences of opinion between the main parties.

This is an opportunity for us to begin a debate that could potentially run and run and if there is suffient reponse may be included in a future Naace event.

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Naace

Is it Credit Crunch Time for Schools?

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

Author: Phil Neal, Managing Director of SIMS for Capita Children's Services

In August last year, the economic fortunes of the UK changed dramatically. We are now on more uncertain ground than we have been for many years. As the recession deepens, tax revenues will reduce and it seems likely that all public services will feel the pinch in some way. But should schools be worried? And what can they do to make themselves recession-proof?

Few would doubt that education is better funded now than it has been for years. And Gordon Brown has insisted that spending in the public sector must continue to provide support for the economy, which is reassuring. However it may be prudent (to use a Gordon term) for schools to make a few small changes today which could make a big difference in the future, should belt tightening be required.

But where should schools start to make savings? Probably the most logical place is with their financial management systems.

Tightening the belt

Better financial management will mean governors and school leaders know exactly where school money is going and what the impact of any additional spending is. Switching to eProcurement will also help schools save money. "As the credit crunch continues to squeeze every sector it is increasingly important for schools to make the most of their funding," says Ian Taylor, commercial director at the Department for Children, Schools and Families.

In some local authorities, schools are using the DCSF's OPEN portal which allows them to shop online and compare prices easily from different suppliers. They can purchase and pay for goods automatically from their financial management system. It means better prices, a better audit trail and less administration time spent on this task.

"The money and time schools save using OPEN can be ploughed back into improving education - benefiting everyone and allowing schools to make the most of their resources," says Taylor.

The schools I have spoken to piloting the scheme in the Sandwell area seem to agree. "It is far simpler to compare prices than sifting through hard copies of catalogues as it is all done for you. We purchased a small item; some tabs for children to make calendars before Christmas, and found a supplier that was £1 per item cheaper than the rest, so we saved £250 on this one purchase," says Karen Lowe, finance officer at St Martin's Primary School. "It is about making sure every penny counts."

A rather simple change – the payment of invoices by BACs instead of cheques – can reduce the amount of time taken to authorise and sign cheques. For an average secondary school this results in a saving amounting to £3.5k per year, according to our calculations. Most schools I know could find a good home for that sort of money.

Working differently

Another way of saving money in the long term is to switch to communicating online rather than by paper. Ray Tarleton, principal at South Dartmoor Community College, is an advocate of this approach, "The future may be leaner and meaner but it is also greener with technology empowering schools to work differently. The use of online communication instead of the printed word can allow schools to save thousands of pounds.

"One large photocopied pack for twenty governors sent by post used to cost in the region of £300 to produce.

Now we email everything and use on-screen facilities to project the papers at meetings. When we carried out an anti-bullying survey recently the questionnaires were completed online – a saving of around £1,000."

There are instant text messaging and email facilities to send messages to parents rather than using letters, and Learning Gateway technology which can offer a good alternative to paper-based pupil reporting. Parents are presented with much more detailed information on their child's behaviour, attendance and progress at school online and the surveys that Tarleton describes are easy to set up.

"Think of the forests saved when all schools communicate in this way," says Tarleton. "And the amount of resources, printing time and labour. There will be less cash to spare so let's make the technology work for us, provide more effective communication and even help save the planet at the same time."

Look at what you have got

In difficult times people are often asked to do more with the same amount of money and one way to achieve this is by using current resources more effectively. I have just come back from a large educational technology exhibition and I saw a number of people looking for pupil tracking systems or software to help with the self-evaluation process or monitoring behaviour. In fact, most schools have already bought and paid for these resources in their management information system or other technology purchased over the years. They do not necessarily need to spend money to work more effectively.

Brighter futures

As the wise financial guru, Warren Buffet put it; "Someone's sitting in the shade today because someone planted a tree a long time ago." Perhaps it is time for schools to start planting some trees of their own so they can cope with potential leaner times to come. Preparation is after all the key to success.

Phil Neal is Managing Director of SIMS for Capita Children's Services

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Information Technology Examination

1 hour

You should answer all questions, in the spaces provided on this question paper.

At the end of the examination, please hand in the complete paper with your answers written on it, and your name and form written in the spaces below.

Name.....**Form** .....

1. Write T (for true) or F (for false) after each of these statements:

All computers have memories.	....
The best solution to a problem is always to use a computer.	....
Computers are machines for processing data.	....
Microcomputers are usually more expensive than mainframe computers.	....
Computers are good at thinking for themselves.	....
A bug is a kind of microchip.	....
Kimball tags are mainly used to tell the customer what she is buying.	....
COBOL is a computer programming language.	....
CAD can be used to make a computer decide if the design for a new car looks nice.	....
Computer simulation is sometimes used because it would be too dangerous to do something 'for real'.	....

2. Describe briefly a use of computers where the speed of processing is very important.

.....

.....

.....

3. What information do you need to process in order to solve this problem:

What is the average amount of pocket money in our class?

.....

.....

4. Suggest *two* problems that could be solved by processing the information in your form's timetable;

one that involves calculating:

.....

.....

and one that involves searching through the information:

.....

.....

5. The Police National Computer (PNC) has a file of data about all the vehicles registered in the U.K.

Explain why a police officer might want to see some of the data in the Vehicle File.

.....

.....

Describe one of the other files that the police have access to through the PNC.

.....

.....

6. When computers are used, some human jobs disappear, some jobs change, and some new jobs are created. Suggest one job that has disappeared because of the use of computers:

.....

one job that has changed: .....

and one new job: .....

7. This question is about an Electronic Mail system that covers the whole country.

Give one advantage of using Electronic Mail instead of sending a letter:

.....

Give one advantage of using Electronic Mail instead of a telephone:

.....

Some Post Office workers are worried about the increasing use of Electronic Mail. Suggest one reason why:

.....

Give an example of an item that could not be sent by Electronic Mail:

.....

What is a modem used for?

.....

8. Some supermarkets have barcodes on the goods that they sell, which are read by a laser scanner at the checkout (POS terminal).

What does POS stand for?

.....

Give one advantage of having bar codes on the goods that are sold:

.....

.....

Here is part of a receipt printed by a POS terminal:

Code	Description	Quantity	Price Each	Total Price
123	Baked Beans	6	0.19	1.14
227	Toilet Roll	4	0.70	2.80
			Final Total	3.94
			Amount Paid	5.00
			Change Given	1.06

Next to each item below write:

B if it is read from the barcode

T if it is typed by the checkout operator

C if it is calculated by the computer

M if it is found from the computer's memory

Code number	....	Final Total	....
Description	....	Change Given	....
Amount Paid	....	Total Price	....
Price Each	....		

Give two examples of the sort of information that the manager could get from this kind of system, to help her to run the shop more efficiently:

i) .....

.....

ii) .....

.....

9. In a Word Processing system explain briefly what each of the following is used for:

Keyboard: .....

VDU: .....

Disc storage: .....

Printer: .....

What is meant by:

justifying a piece of text? .....

.....

changing the case of a letter? .....

.....

word-wrap? .....

.....

hard copy? .....

.....

What did <u>you</u> find to be the biggest advantage of using WRITE instead of writing with a pen on paper?

.....

.....

10. Which one of these could best be described as a <u>program?</u>

Underline the correct answer:

Bus timetable	Dictionary
Knitting pattern	Telephone directory

11. Next to each of the following write:

I if it is used for input

O if it is used for output

B if it is used for backing storage

Open-reel tape	....	Barcode reader 'pen'	....
Loudspeaker	....	Robot	....
Mouse	....	Floppy disc	....

12. In which one of these is there never a microprocessor?

Underline the correct answer:

Car	Digital Watch
Washing machine	Electric Light Bulb

13. For which of these jobs might it be appropriate to use a robot? Underline the correct answers:

Cleaning a school	Cutting coal in a mine
Welding a car body	Test-flying a new aircraft
Making a flower arrangement	Screwing tops on bottles
Packing a suitcase	Collecting rock-samples from the seabed

14. Computers are now used a lot in hospitals: medical records are stored in computer files, and computers are used to monitor (keep watch over) the patients' physical conditions.

A patient's blood pressure can be measured by a pressure sensor and monitored by a computer. Suggest one other physical response that could be monitored by a computer:

.....

Suggest a reason why computers are used in this way:

.....

.....

Describe a task for which human medical staff are more suitable than a computer:

.....

.....

Suggest an advantage of having the medical records stored in a computer file instead of on record cards in a filing cabinet:

.....

.....

Write down two ways of making sure that the wrong people cannot use the terminals to look at personal data stored in the computer system:

i) .....

.....

ii) .....

.....

Do you think that a patient should be able to see the data in her own medical record? Explain your answer.

.....

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15. Some estate agents store details about houses for sale in a computer file, and then retrieve the information that they want by using an information retrieval program similar to QUEST.

Fill in the missing word at the end of this sentence:

In the file, each record will contain the details of one .....

Three of the fields in each record are likely to be:

Fieldname	Explanation	Example data
ADDRESS	Address of the house for sale	12, High St.
PRICE	Price of the house, in pounds	50000
DGLAZING	Has it got double-glazing? (Y/N)	N

Add three more suitable fields to the table, filling in all three columns for each one. Include one more numeric field, one more yes/no field, and one more alphabetic field.

Describe the houses which will match the enquiry:

QUERY DGLAZING SUB "Y" AND PRICE LT 60000

.....

.....

What enquiry would the estate agent make to see the details of all the houses that cost over £40000 but have not got double glazing?

QUERY .....

.....

Make up a QUERY using one or more of the new fields that you added to the table, and describe the houses that would match your enquiry:

QUERY .....

.....

The houses that match this QUERY will be all the ones that .....

.....

.....

Now go back and check your answers.