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SIMPLY THE BEST

The Technology & Innovation Awards results are in at last – find the full list of winners, inside

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Welcome...

...to the first issue of a brand new publication from Teach Secondary, dedicated to celebrating the latest and best developments in technology and innovation for education, and how schools and teachers are using them to enhance learning for young people across the curriculum.

Whether you're a total gadget freak, or still having to ask your eight-year-old niece for help every time you download an app to your smartphone, you'll be aware that it's becoming increasingly difficult to avoid technology as a teacher. Not so long ago, 'ICT' was an entirely discrete subject, taught and studied in dedicated computer suites by those with a niche interest and/or aptitude for such things; now, it's inextricably woven in with every strand of education, just as it is part of the fabric of wider society. Technology is something we learn *with*, as well as *about*. And at its best, it can help individuals and groups achieve extraordinary things.

It's easy to get carried away, however. There is no magic bullet when it comes to education, and technology that's introduced into schools for its own sake, rather than as a response to a genuine need or as part of a clear vision for progress is unlikely to prove a wise investment, no matter how innovative it may be.

With that in mind, within these pages we've gathered together some of the most interesting, powerful and potentially transformative products, services and resources available to schools today – and delved beneath the sales pitches to find out exactly what they have to offer. We also have pedagogical advice and opinions from experts in the fields of both technology and education, and plenty of examples of superb practice from real classrooms.

No one is better placed to know what is most likely to work in your school than you are; I hope you find something to interest, engage and inspire you here.

Helen Mulley, editor
@Teachsecondary

MEET THE EXPERTS

Dr René Tristan Lydiksen is the Managing Director of LEGO® Education Europe

Keiron Sparrowhawk is the Founder of MyCognition, which develops video games to assess and train cognitive health.

James Dyson is the founder of Dyson and the James Dyson Foundation.

Ruth Nicholls is head of partnerships at Young Rewired State.

Sal McKeown is a freelance special needs journalist and author of Brilliant Ideas for Using ICT in the Inclusive Classroom (Routledge).

Jennifer D Begg is a social media trainer and coach.

Lorna Taylor is a paediatric physiotherapist with over 12 years' experience.

Glen Gilchrist is head of science in a secondary school in Wales.

Tom Starkey is a teacher in a FE college in the north of England.

David Morgan @lessonhacker) is a teacher and author who excels at pedagogy and everything digital.

Roger Broadie is a member of the Board of Management of Naace.

Allison Allen is Director of Outstream Consulting (outstream.co.uk), Trustee of the Board of Management of Naace and a MirandaNet Fellow.

Caroline Wright is director of the British Educational Suppliers Association (BESA).

Safe. Mobile. Collaborative.
Lightspeed Systems

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They come in orange, lime green, purple and blue as well as grey. But it's not just the range of colours that makes LapCabby storage trolleys stand out. We know good design matters, and we've aimed high to create innovative ICT storage that does everything you'd expect and more.

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Q&A
ICT storage solutions

UK LapCabby

Marvin Douglas, UK LapCabby Sales Manager, runs through a few security issues schools need to consider when moving to a 1:1 device policy...

VISIT: WWW.LAPCABBY.COM CALL: 0115 982 1771 EMAIL: ASKUS@LAPCABBY.COM

T&I: Why is ICT storage something that schools need to be considering?
MD: The primary reason is to keep tablets, laptops and e-readers charged and synced – they need to be powered-up and ready to go at the start of every lesson. So a trolley with built-in cables and automatic software syncing saves time, and we all know teachers need more of that.
And since tablets and laptops are high-value items that schools can't afford to have broken or stolen, keeping them safe and secure is really important. All our tech trolleys have a dual-point locking system, with the key located on top so it doesn't get damaged while you're wheeling the trolley around.

Are there any special features of LapCabby products you'd like to bring to the attention of T&I readers?
LapCabby is the only laptop trolley brand designed specifically for schools. We've taken the time to research how schools use technology, what teachers are looking for, and what safety features are needed to protect the kids. For example, the power points on our trolleys can only be accessed from separate electrical compartments hidden behind a concealed door release, which ensures children can't reach the power compartment.

The corners of our trolleys are fitted with rounded, shock-absorbing bumpers that won't cause damage when you're moving the trolley through doorways or down corridors. The wheels are heavy-duty and lockable to make mobility and storage easier. And the ventilation is really excellent – it's important to keep tablets and laptops cool while they're charging, so we added air vents and a steel mesh base to help the innovative ventilation system circulate cool air.

LapCabby units also come with built-in cable management, and sliding shelves and trays that give you easy access to devices. You can store a multitude of different devices in one trolley – so you can put Kindles alongside iPads and Android tablets – whether they've got cases on or not. They're very versatile units, which makes them a really practical choice for schools.

How can your trolleys contribute to improved energy efficiency?
We build a Power7 timer into every one of our cabinets. It's a clever gadget that lets you program your trolley to charge devices when it's most convenient for you. For instance, if you're on the Economy 7 plan, you can schedule charging to happen overnight, when it's cheaper.
You can set up to 7 different charging schedules – one for every day of the week. That means you can arrange charging around your classes, so you never start a lesson with a flat battery.

You can even set charging to stop after a certain amount of time, to protect battery life – over-charged batteries need replacing sooner, and we'd rather schools didn't have to pay for that sooner than necessary.
We've also built in sequential switches that make sure the circuit breakers don't overload, even with a full trolley of laptops or tablets on charge.

What do schools that have invested in LapCabby products tell you about how they have helped make life easier?
Schools love them. We're really lucky in that our customers often give us feedback about what they particularly liked – and in the past we've made changes and brought in new features based on what they've told us. For instance, schools told us they liked how fun the trolleys look in the classroom, so we added more colour options.

Here's a brilliant endorsement we got from Brian Romero Smith, technology specialist at the Harry Stone Montessori Academy: "These trolleys are like nothing I've seen before. They have so many clever features, and they let you store different makes and models of laptop or tablet together – even in cases. They charge your devices up, they sync them. They have a separate compartment for the power supply. And they actually come in a choice of colours. The kids love them, and I love them!"

What are the security advantages offered by LapCabby storage in schools?
For one thing, it's easy for expensive tablets and laptops to go missing if they're scattered about. Keeping them all in one place keeps them safe – and a LapCabby is very safe indeed.

With a dual-point locking system and fully-welded frame, our trolleys are pretty tough – and you can use one of our lockable wall brackets to anchor them to the classroom wall. A lot of schools also wheel them into the storage cupboard, lock the brakes, lock the LapCabby and lock the cupboard. And that's pretty secure, if you ask us.

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CONGRATULATIONS!

TECHNOLOGY + INNOVATION AWARDS

In association with LEGO education

The judging panel has made its decisions – and now it's time to reveal the winners of this year's Technology & Innovation Awards, says editor, **Helen Mulley**...

Being able to highlight, celebrate and reward excellence in schools is without a doubt both my favourite part of this job, and an enormous privilege. In June 2014, when – in association with LEGO® Education – we announced the launch of a new set of awards specifically focusing on classroom technology and innovation, we chose the categories for nominations very carefully. It was important, we felt, to give people the chance to recommend not just brilliantly designed products and resources, but also those individuals who have made an outstanding contribution to the development of 21st century teaching and learning over the past year... and as the entries started to roll in, it was clear that everyone was making the most of the opportunity.

Every nomination was carefully considered, and the final decisions made by a panel of education experts, working with clear lists of success criteria. I am thrilled to be able to present the winners here; and would like to take this opportunity to thank everyone who took the time to tell us about how some very special people and products have been transforming schools, and the experiences of those who work and learn in them, throughout the UK. I only wish we could have included every single one of them.

AND THE WINNERS ARE...

BEST AUTHOR

This award is given to the writer of a book that has been especially empowering for teachers and learners; either encouraging them to approach technology differently, or introducing them to new technologies in an accessible, inspiring (and jargon free!) way.

AWARDED TO:

Carrie Ann Philbin

author of Adventures in Raspberry Pi (John Wiley and Sons)

What did they say?

"As the curriculum changes next year to encourage more use of coding teachers are getting worried about how they will do this. This book makes teaching using Raspberry Pi not only easy for teachers, but makes them confident that they will teach fun and engaging lessons – everything from making music with code to using code to control Minecraft! Our 21st century technology natives are completely captivated and our 20th century technology tourists can achieve things they never thought possible!"

Carrie Anne Philbin is now working for the Raspberry Pi Foundation as Education Pioneer.

RUNNER UP

Sal McKeown, for *Brilliant Ideas for Using ICT in the Inclusive Classroom* (Routledge)

"Her innovative, accessible yet authoritative approach helps teachers from all background unlock the potential of ICT for children with special educational needs, but the ideas here are just as suitable for use with ANY child."

BEST TEACHER

His or her specialist subject may be maths, English, P.E, drama, D&T or even computer science... but one thing's for certain, this outstanding educator is totally up to date with technology, and uses it in imaginative and effective ways to deliver great lessons, every time.

AWARDED TO:

Chloe Davies

Head of Lower School Science, East London Science School; follow her on twitter @ELSS_Biology

What did they say?

Chloe was nominated by one of her colleagues, who describes her as "a fantastic teacher, who consistently uses technology in her lessons in genuinely useful ways. Rather than just using the latest fad for the sake of it, Chloe thinks carefully about how each piece of software or hardware she uses will enhance her lessons, and how she can use it to develop and integrate her own resources. For example, she has recently published an excellent set of revision tests for her year 7 pupils, covering the whole of the year 7 biology syllabus (which she developed). In four weeks, students took total of over 1000 30-60 minute tests, on their own initiative: averaging more than ten tests per pupil. The data produced as a result has allowed Chloe to demonstrate considerable progress among pupils of all abilities, and the benefit has been clearly visible in the recent end of year tests. Her original resources are of the highest quality, as is clearly demonstrated by the favourable comments on her downloadable lesson resources on TES, which have collectively been viewed more than 14000 times."

"All of the shortlisted teachers showed just how much potential the use of technology has in the hands of great teachers who understand that just using it doesn't automatically make lessons more interesting! The nominees all demonstrated that they use technology to innovate in a way that directly impacts, in a positive way, on the young people they serve - but also challenges other staff to do the same. Chloe willingly shares her work online for the benefit of other teachers and their young people. Just one look at her Twitter feed and blog is enough to see the quality of work being produced for the benefit of her students and how positively they respond to it."
Judge, Vic Goddard

"TECHNOLOGY IS FOREVER EVOLVING...

...and I believe that with a generation of such technologically literate students, it gives teachers the power to connect with students in a way that facilitates their learning. I enjoy the challenge of exploring new technologies and creatively incorporating them into my teaching practices to inspire and motivate students. Through sharing these ideas with other teachers we are able to exploit the use of technology to the benefit of all students. I want to thank East London Science School for giving me the freedom to be innovative in my approach to teaching and use of technology."

BEST BLOGGER

AWARDED TO:

Mark Anderson, for ictevangelist.com

What did they say?

"All the shortlisted blogs are very good, but ICT Evangelist felt to me the most polished, easy to navigate and comprehensive for a non expert, non tekkie and non-teacher governor like me. It gave me a clear overall sense of how IT could be used in schools, right down to the diary planning tool for senior leaders. I will definitely be going back to it; it looks to me as though it has something useful for everyone involved in education."
Judge, Fiona Millar

TECHNOLOGY & INNOVATION AMBASSADOR

AWARDED TO:

Terry Freedman

What does he say?

"I've been involved in educational technology in several roles since I did my teachers' training course in 1974. Since then, the technology has changed quite a bit: but what has not changed in my opinion is the power of technology for bringing education alive and putting you in control. However, whether as a teacher, ICT advisor, Principal Officer at QCA, Ofsted inspector, independent consultant or writer, my view has always been that just because you *can* do something, it doesn't mean you *should*. I suppose I would describe myself as a cautious innovator, not one of the 'gung ho' variety!

The most important aspect of education technology is the 'education' part: if it isn't helping someone to learn, or if it is far less efficient than alternative, perhaps older, technology, then why use it?

There are so many innovations in this field these days, it is a really exciting time to be involved."

AND FINALLY...

TECHNOLOGICAL INNOVATION OF THE YEAR

This category was the most difficult to narrow down; we were looking for "a product, service or resource that has made a genuinely unique and significant contribution to improving standards of teaching and learning at Key Stages 3 and 4 during the 2013/14 academic year" – and both the range and the quality of nominations were seriously impressive. Eventually, however, our judges were presented with a shortlist, and set to work assessing the entries. Every finalist has something special and exciting to offer; you may already be using one or more of them in your classroom – but if you're not, and you're looking for new ways to engage and inspire your students, this collection of clever innovations would definitely be a great place to start the search...

OVERALL WINNER

GCSEPod gcsepod.com

It's such a simple idea. Take the content that students need to learn, and package it in a way that enables them to access it at any time, and anywhere, using the mobile technology they have in their own pockets – so teaching time can be used for questioning, exploration and testing understanding. That's where GCSEPod started – with carefully scripted and presented revision podcasts that proved instantly to be both popular and successful. Schools started reporting impressive uptake, and even more eye-catching improvements in attainment. The great thing about this company, though, is that it is never satisfied. Revised and improved, GCSEPod 2.0 now boasts over 400 hours of curriculum-relevant learning and revision material, designed to suit the latest mobile and wireless technology. It gives teachers and learners what they want and need, in a way that suits how they choose to live; it's technology and innovation for education at its best. "The team at GCSEPod are thrilled to have won the inaugural Teach Secondary Technology and Innovation Award," says co-founder and director Anthony Coxon. "GCSEPod has been growing from strength to strength since its debut at BETT in 2010 and that is all thanks to our dedicated team and their commitment to GCSEPod Innovation and Excellence. To be recognised by such a prestigious and popular publication is indeed praise."

"GCSEPOD DOES WHAT ALL THE BEST PRODUCTS DO:

...it makes you ask, 'why didn't I think of that?' Providing excellent quality content in an easily accessible audio file means that students can study a topic simply by popping in their headphones. It's so simple! Genius."
Panelist, David Morgan

MEET THE JUDGES

+ Lydia Beaton is global head of the James Dyson Foundation

+ Gareth Boldsworth is European sales and marketing director for LEGO(R) Education Europe

+ Oly Bray is a member of the Board of Management at Naace

+ Debbie Forster is UK managing director of Apps for Good CDI

+ David Morgan (@lessonhacker) author of Stop Getting I.T. Wrong!

=2nd RUNNER UP

MAPS

This e-portfolio based assessment solution from TAG Assessment supports AfL, student reflection and professional development for schools and colleges, universities and professional accreditation.

"We have seen MAPS used with great success at Writhlington School. The students were designing, building and testing parachutes to deliver aid in remote locations. As part of this, they used MAPs to create a project diary in which they documented the various iterations of their design. It also allowed them to photograph and record the testing process. These diaries were easily shared with the rest of the class. What particularly excites us about this product is its potential for project based subjects. If the exam boards could endorse the use of software like this, it could change the way GCSEs or A Level submissions are accepted. It would aid the assessment of the iterative design process."

Panelist, Lydia Beaton (James Dyson Foundation)

=2nd RUNNER UP

Hue Animation Studio

A complete top motion animation solution, designed for education and with the potential to bring learning to life right across the curriculum, it combines the Hue HD webcam with user-friendly animation software.

"Anything that allows children to get hands-on and creative will always get a big thumbs up from me. Expression and communication are so important in children's development and Hue Animation supports these key areas. It will no doubt inspire children to follow creative career paths but also bring fun into their learning. It is also extremely affordable and great value for money. A job well done!"

Panelist, Gareth Boldsworth, LEGO (R) Education Europe

4th RUNNER UP

Learnpad

While there are a number of consumer-based tablet computers currently available, LearnPad is the only one that's been designed exclusively for educational use. Every aspect of it was designed to meet the extensive needs of students and school networks, including supervision, differentiation, and content.

"Learnpad begins to offer a more level playing field in the growing tablet market. Its low price and one stop shop approach combined with its use of the Android platform opens lots of doors for students, schools and developers in the edtech market. Also the Android environmen allows teachers and students an easier opportunity to become not just users but creators of apps over time."

Panelist, Debbie Forster, Apps for Good

5th RUNNER UP

EyeTeach

An innovative new classroom solution incorporating megapixel cameras and high-definition audio recording that can be used to review teacher and student performance, as well as for class presentations, one-to-one student reviews and as a website resource. The use of PINs to link each teacher with specific recordings is a masterstroke of safeguarding design.

"EyeTeach has clearly been designed with the input of schools and teachers, which in return allows students access to the latest video and audio technology. I was impressed at how it can be used across multiple subject areas, and also as a tool to help teachers to review and improve their own teaching methods. The one-off cost also means total cost of ownership is clear from the outset. A great asset for any school."

Panelist, Gareth Boldsworth, LEGO (R) Education Europe

SPECIAL MENTION....

Healthy Working MOVE is a free e-learning course that helps schools to protect students from musculoskeletal disorders; as discussed on pages 74 and 75 of this issue, back pain is on the increase amongst young people – not least due to the way they interact with technology – so a no-cost, engaging, interactive resource to help teachers address this is a hugely welcome development.

HIGHLY COMMENDED

+ LUCID EXACT

A time efficient and reliable tool for assessment, screening and for assessment for exam access arrangements, Lucid Exact provides comprehensive assessment of literacy from age 11 to 24.
www.lucid-research.com

READ&WRITE GOLD

A user-friendly, flexible toolbar from Texthelp containing clever and comprehensive support features to make reading, writing and research easier, especially for learners with dyslexia, or EAL.
www.texthelp.com

+ DISPLAYNOTE NEC EDITION

Collaborative software provides the essential link in enabling any connected device to share their screen with a presenter or with any other connected device.
www.education-nec.com

+ VOCAB EXPRESS

With Vocab Express, learning vocabulary can finally be done effectively at home, with student progress tracked by the teacher and attainment levels differentiated using various metrics.
www.vocabexpress.com

+ GROUPCALL EMERGE

A mobile app where the school's MIS data is available to view instantly and securely in both online/offline modes, Groupcall Emerge increases efficiency, and can help improve safety and emergency procedures.
www.groupcall.com

+ PC WERTH, FRONTROW JUNO

This 3rd generation classroom audio system, designed to enhance learning environments, is definitely worth considering. Lesson capture without the camera is a bonus.
www.gofrontrow.com

+ FUZE

The FUZE powered by Raspberry Pi® is a programmable computer and electronics workstation designed to introduce and develop text based programming skills across all stages of the new National Curriculum.
www.fuze.co.uk

Where there's a WILL

What do one of the world's most successful musicians and the heir to the British throne have in common? Both are currently helping young people engage with STEM subjects, of course, says Sian Deakin...

ABOUT THE AUTHOR

Sian Deakin is digital development manager at the Prince's Trust.

"I am so proud that my work with The Prince's Trust is giving young people from vulnerable backgrounds the chance to join the digital revolution and make a valuable contribution to modern society." **will.i.am**

In Britain around one in five young people aged 16 to 24 are currently struggling to find a job. Are they too lazy to find work? Perhaps they'd prefer to hang around with their friends in the local park? Or quite simply, maybe they are too disillusioned with the jobs market and don't know where to turn?

Everyone has an opinion on the reasons behind youth employment, but I think many people will be shocked to realise some of the realities that unemployed young people face each day. For example, did you know that 40 per cent of jobless young people have faced symptoms of mental illness as a direct result of unemployment?

Surprisingly, technology is also holding young people back. One in six unemployed young people believe they would be in work today if they had better computer skills. A quarter of unemployed young people "dread" filling in online job applications while one in 10 admit they avoid using computers altogether.

At The Prince's Trust, we know that young people have the determination and willingness to find jobs, but thousands lack the skills, confidence and opportunities to do so. Many have struggled at school or grown up without a role model, thinking no-one cares. Often, these young people end up on a downward spiral towards long-term unemployment, drug and alcohol addictions and poverty, struggling to see anything positive in their lives. Sadly, these are the barriers that prevent many young people from finding a job.

In addition to this tragedy, it is becoming obvious that businesses are struggling to fill vacancies. This should not be happening when we have hundreds of thousands of unemployed young people literally desperate for a job.

The Prince's Trust wants to work with more employers to avoid future skills shortages. We are already working with a number of leading organisations within the science, technology and engineering sector – including Sony Computer Entertainment and PayPal – to up-skill the workforce of the future and get unemployed young people into jobs, but

more needs to be done. Only by re-engaging young people, can we tap into this lost potential and hope for continued economic recovery. The Prince's Trust is doing just that every single day.

Two years ago musician and philanthropist will.i.am personally donated £500,000 to The Trust via his i.am.angel Foundation, which was launched by will.i.am in 2009 to transform lives through education, inspiration and opportunity.

will.i.am's donation has been a catalyst for The Prince's Trust, creating a momentum that has brought technology to the forefront of our work with young people. With his generous donation we have been able to introduce specialised science, technology, engineering and maths programmes to offer to unemployed young people across the UK.

The partnership has supported more than 800 disadvantaged young people through Prince's Trust programmes and has supported a further 3,600 through short inspirational STEM sessions, run in partnership with the Science Museum. The aspiration is to equip tens of thousands of young people with the digital skills to help them find work and embed digital training across all of our courses.

will.i.am recently met with young people supported directly by his donation. The week-long course, Get Started with Product Design, delivered in partnership with Makerversity, was designed to introduce unemployed young people to creative technologies and digital product design, building their skills, confidence and creativity, helping them find a job in the future.

One of the young people met by will.i.am, and supported by the i.am.angel Foundation, is Alex Morrison, 23, from London. After finishing school with a few GCSEs, Alex enrolled on a college course – but a few months later, he had to leave education so he could find a job to help support his family. It wasn't long before he fell in with a bad crowd, and found himself involved with drink, drugs and getting into trouble with the law.

After taking on the odd labour job, work dried up, and Alex felt his hopes of finding employment diminish. He felt that no-one wanted to give him a chance. He was applying for ten jobs a week but never heard anything back and started to wonder where his life was headed. Alex spent eight months out of work.

He came across The Prince's Trust and jumped at the chance to take part on the programme. Throughout the week-long course Alex learnt about all aspects of product design and learnt new skills in coding, programming and 3D printing. Alex is now in full-time employment.

We are proud to be helping the next generation, including Alex, move into science, technology and engineering sectors. We are equipping them with the skills they need to make a successful career for themselves while at the same time providing an escape route from the frustration and misery of unemployment.

With more help, we can do more. To find out how you can support The Prince's Trust visit princes-trust.org.uk.

SKILLS IN SCHOOL

For those young people who are still in education, but at risk of underachievement or exclusion, The Prince's Trust runs xl clubs with teachers to help reengage them, integrating them back into mainstream education and getting them ready for the word of work through small group activities. STEM and digital skills are an important part of the programme. More than 60,000 young people have been helped through xl clubs so far, with 92% going into further education, training or employment after the programme. Find out more at princes-trust.org.uk/xl

EV3 DOES IT

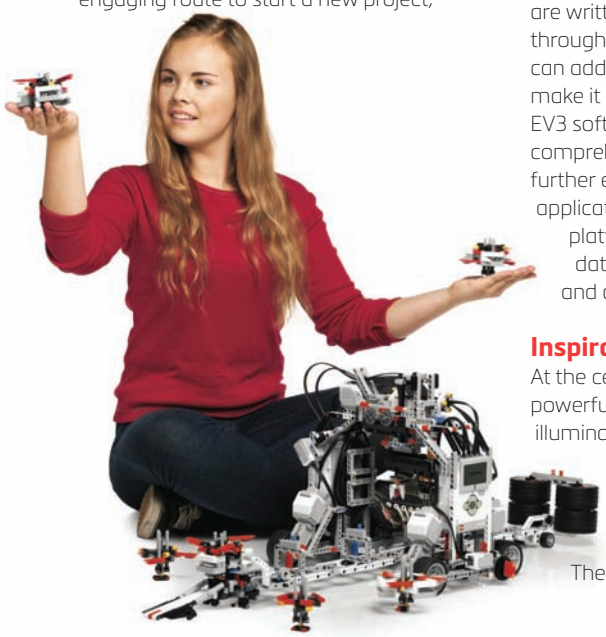
What better way to introduce learners to the exciting potential of robotics technology, than through the latest innovation from LEGO® Education?

LEGO® MINDSTORMS® Education EV3 is the third generation of LEGO Education robotics technology designed specifically for classroom use. EV3 development started in 2007, with the core requirement of meeting teacher needs by providing a resource that delivered a hands-on approach while integrating to the digital world, resulting in a relevant resource for teaching Computing, Science, Design & Technology, Engineering and Mathematics.

Intuitive software

The EV3 software is based on LabVIEW™, the industry leading graphical programming language used by engineers worldwide, preparing today's students for the tomorrow's workplace. Programming is done through dragging and dropping icons in order to form commands. The graphical interface lets students build simple programs and then easily build on their own skills until they are developing complex algorithms, making it an ideal solution for the new Computing curriculum from late Key Stage 2 through to Key Stage 4 and beyond, while also integrating other STEM subjects. Full digital curriculum integration through the software lobby provides the entry point, giving instant access to content, programming, data logging, digital workbooks and a comprehensive user guide. It contains everything required to meet teaching goals, and gives students an engaging route to start a new project,

access previously saved work, or follow one of the 48 tutorials located within the Robot Educator learning tool. The Robot Educator allows both teachers and the students to follow learning pathways through software introductions, hardware introductions, programming basics, advanced programming, graphing and tools, all of which provide approximately 32 hours of classroom lessons. Each activity follows the same structure, designed to maximise the learning outcome by fully engaging the student in real life application while also developing their problem solving and team working skills. All content within the EV3 software is fully editable. As a teacher the dynamic content tool makes it easy to edit built-in content to make it specific to their class. They can adapt it, customise it, or simply create their own by changing or adding text, images, videos, sound, deleting or adding pages. As a student, assignments are written directly into the EV3 software through the student workbooks. They too can add text, images, sound, and video to make it their own personal project. The EV3 software also includes a comprehensive data logging feature, further extending the cross curricular application. The data logging provides a platform to predict, collect and analyse data, log data and view live graphs, and complete analysis.



Inspirational hardware

At the centre of the EV3 hardware is the powerful intelligent brick. It features an illuminated interface to indicate the brick's active state, a high-resolution black and white display, speaker, USB port, mini SD card reader, four input and four output ports. The brick supports USB, Bluetooth and Wi-Fi and has an interface that enables programming and data logging directly onto the brick. It is compatible with mobile devices and comes with a lithium rechargeable battery to eliminate ongoing running costs. The intelligent brick comes in the EV3 Core Set. The extensive set of LEGO elements, three motors, ultrasonic sensor, colour sensor, gyro sensor to measure angles and two touch sensors promote creativity and open ended learning experiences. Students are encouraged to develop solutions through a process of selecting, building, testing and evaluating. All the hardware comes in a sturdy plastic storage box with sorting tray for easy classroom management.

A long lasting teaching solution

EV3 can be used year after year across multiple subjects and all year groups from Key Stages 2 to 4. The low entry barriers, extensive learning directions and high ceiling make it a fully inclusive resource catered to individual needs. Couple this with the well known, exceptionally high quality delivered by LEGO; EV3 is a resource to make a long term learning impact .

EV3 resources can be catered to every need. A two-student getting started set is just £359.99, provides a single user software licence and one core set. Starting investment can also be then scaled according to the number of students using the resource, and this is all built around the purchase of a software site licence for £299.99 which allows installation on every computer on one site.

+ 8 student pack (4 core sets, 4 battery chargers and a software site licence) – £1,449.99
+ 16 student pack (8 core sets, 8 battery chargers and a software site licence) – £2,599.99
+ 30 student pack (16 core sets, 16 battery chargers and a software site licence) – £4,599.99

MORE INFO

LEGO education

www.LEGOeducation.com/mindstorms

FOR YOUR... CLASSROOM

Introducing a treasure-trove of bright, new ideas for 21st century teaching and learning

Pi a la mode

So your Raspberry Pi has finally arrived – but what's the best way to get your classroom buzzing with this clever little computer? **Michael Horne** has four suggestions...

1. Minecraft

There is a special, free, version of this popular game just for the Pi which allows children to program in a language called Python and build things through code that would take them ages to do manually. There are examples online for creating a giant floating clock, a cannon which shoots exploding blocks and a visual 'equaliser' for music, among many others. You can find out how to download and install Minecraft: Pi Edition by visiting **tinyurl.com/tandipi** and examples can be found at: **tinyurl.com/tandipi2** and **tinyurl.com/tanipi3**

2. Sonic Pi

Sonic Pi gets you to create music through simple computer code using sample loops, individual notes and, in the newest version, you can even 'live code' and tinker with your music while it's playing. It has been adapted into a scheme of work for KS3. Find out more at http://sonic-pi.net.

3. Seven Segments of Pi

Seven Segments of Pi is the world's simplest games console. It features a seven-segment display and a single button and costs around £20. Using the device, which plugs into the pins on top of the Pi, you can create simple things such as an electronic dice before moving onto full projects such as a reaction-timing game. It comes as a kit which must be soldered together and is controlled using Python. Find out more at sevensegmentsofpi.com

4. CamJam EduKit

An electronics project kit for beginners – for £5 you get everything necessary to create your first circuits using the Pi and there are step-by-step worksheets to print off. It all comes in a nice project tin so you won't lose any of the bits. You can read more about it and see the worksheets at **http://camjam.me/edukit**

83%

of pupils say they wouldn't be able to fulfil their potential or dreams without good teachers

(source: Celsian Education)

CLASSROOM SNAPSHOT

Chris Waugh of the London Nautical School has transformed his English department by making every pupil's exercise book into a class blog called 'Edutronic'. Eveything the pupils do is recorded here. According to Chris, "There is a blog for each English class with a lesson stream that tracks and compiles the daily traffic of the classroom." Year plans, samples of excellent pupil work, moderated exemplars, lesson sequences, videos of pupils speaking, and teaching practice also appear. As all of the evidence is online, the blog makes it clear how much progress has been made over time. Pupils post their work, Waugh gives them feedback and the pupils improve and refine their efforts. With learning and progress so visible, fantastic opportunities open up for pupils to develop – with technology being used to achieve this.

Extracted from Perfect ICT Every Lesson, by Mark Anderson (Independent Thinking Press, £9.99)

FILLING THE GAP

Britain is currently suffering from huge skills shortages in IT and engineering, says Joanne Harper, Principal of UTC Reading - but University Technical Colleges could be the answer...

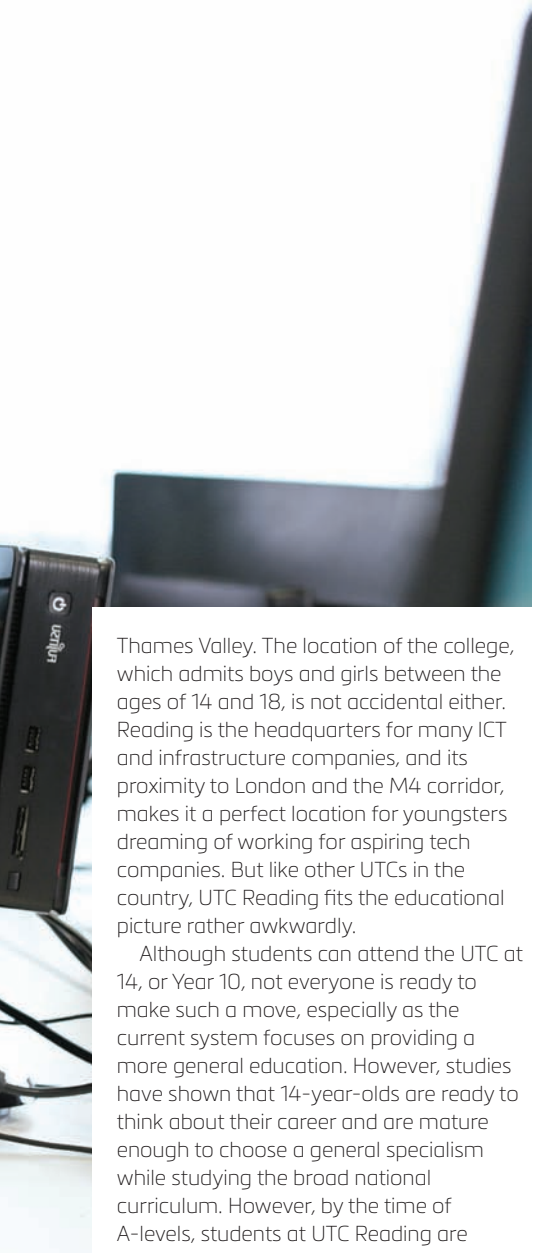
Breaking into the world of work can be a daunting experience for many young people. With the rise in university fees, and youth-unemployment at all-time high, graduates are no longer the only ones losing sleep over worries about the future – it is becoming an issue for school-leavers too. Employers are focusing on technical qualifications and job experience, something not many youngsters are able to demonstrate. Unfortunately, the educational system does not help in this regard – there is currently little emphasis on technical or engineering skills, and the current curriculum does not encourage young people to think about a specialism until they reach university. However, there are initiatives that aim to address these problems and bring balance back to UK's employment market.

One such initiative is the growing number of University Technical Colleges (UTCs), supported by the Baker Dearing Trust. These schools play an important role within the state education system. Specialising in science, technology, engineering and mathematics (STEM) subjects, they aim to train the next generation of engineers, technicians and industry innovators and are pivotal to filling the gap on the market and putting an end to skills shortages. However, despite a growing number of UTCs across the country, they remain a novelty in Britain and have to fight for their place within the educational system. They face several challenges, from fitting the state curriculum within their technical focus, to addressing the shortage of girls studying technical subjects; goals that are not easy to achieve. One such school is the University Technical College (UTC) Reading, which opened its doors last September.

Mapping the space

UTC Reading is not your usual school. While it shares the same ambition as most state institutions, to provide first-class education and secure the best possible future for its students, it has a very special vision. It works tirelessly with a host of industry partners to bring excellence in computer science and engineering to the

> "Studies show that 14-year-olds are ready to think about their career and are mature enough to choose a general specialism..."



Thames Valley. The location of the college, which admits boys and girls between the ages of 14 and 18, is not accidental either. Reading is the headquarters for many ICT and infrastructure companies, and its proximity to London and the M4 corridor, makes it a perfect location for youngsters dreaming of working for aspiring tech companies. But like other UTCs in the country, UTC Reading fits the educational picture rather awkwardly.

Although students can attend the UTC at 14, or Year 10, not everyone is ready to make such a move, especially as the current system focuses on providing a more general education. However, studies have shown that 14-year-olds are ready to think about their career and are mature enough to choose a general specialism while studying the broad national curriculum. However, by the time of A-levels, students at UTC Reading are limited to the subjects that fit the school's specialism – and they love it – with students coming from far and wide, simply because they cannot find such options anywhere else.

Taking an innovative approach

Another challenge is the need to combine standard state education with technical qualifications. Rather than solely focusing on one or the other, the school provides qualifications on three levels, working from 8.30am to 5pm, in order to accommodate the additional time needed. Each student is required to complete the traditional academic qualification, expected of most secondary schools. On top of that, the school offers a choice between a BTEC in engineering or IT, as well as a number of professional qualifications from industry partners including Autodesk, and Cisco, and a range of industry specific awards – equipping youngsters with the skills they need to break into the world of work, whether they choose to go to University or not.

The UTC's vision and curriculum are not the only things that make it stand out – UTC Reading also puts great effort into creating an environment that replicates the business environment. Students use technology that is widely used in a workplace, such as Outlook instead of paper timetables. They are also required to wear business attire rather than school uniforms – helping to alter their mind-set and making them feel that they are in a professional environment. In addition, UTC Reading encourages independent learning, which means youngsters have to learn to manage their deadlines and workload much as they would in a future workspace.

All these skills are constantly put into practice, as students work on projects set by the UTC's industry partners. These types of activities focus on developing practical skills, regularly used in the workplace – skills that standard secondary schools often overlook.

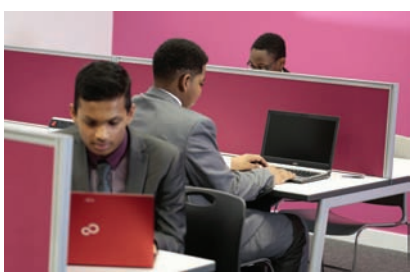
Balancing the ratio

One of the main concerns for UTC Reading is finding the right balance between male and female students. The lack of females undertaking STEM training continues to be a big problem for the industry and contributes to the country's overall skills shortage. Some industries, such as engineering or aviation are almost completely male-dominated and UTC Reading itself suffers from a low female to male ratio. Last year girls formed only 13 percent of all students. However, UTC Reading is working closely with industry partners, such as ICT company Fujitsu, to address the problem and encourage more girls to undertake STEM subjects. In fact, the UTC is one of key partners of Fujitsu's new education programme that promotes dialogue and draws attention to the issues within technical education in the UK. Apart from spreading awareness UTC Reading tries to appeal to girls' interests early – as early as primary schools, before they are exposed to the stereotypes about the types of subject they should learn. That is why it runs open days for primary schools and support initiatives like International Girls in ICT Day, which are attended by a number of female role models from across the industry – from civil engineers to IT professionals and science professors, reassuring girls they can excel in scientific subjects and encouraging them to make the decision to apply for a place at a UTC. So far, the initiatives seem to be working and the school is expecting to admit from 20 to 25 percent of girls this year, but the need to educate and promote STEM agenda among all youngsters, not just girls, remains high.

It is not all bad news though; the right moves have been made to address these problems – with computer science becoming part of the English Baccalaureate eighteen months ago. And while the country still lacks trained teachers that could develop and deliver the subject across the curriculum, it is reassuring to see so many new UTCs being set up across the country. It will take time for the schools to find their space within the current system and become a natural part of the British educational picture, but UTCs will no doubt play an important role in moving the UK economy forward and addressing the current employment issues.

DIFFERENT FOR GIRLS?

Sophie Wooldridge is one of the top students at UTC Reading. During an industry day organised by the school, Sophie took a particular liking to Fujitsu UK & Ireland – an ICT company and one of UTC Reading's industry partners. Her enthusiasm and hunger for knowledge secured her a spot at Fujitsu World Tour – a one-day showcase of the latest trends in datacentre technology, mobility and big data, which took place at the beginning of July. The event is usually reserved for customers and industry professionals only and offers a great opportunity to network and make connections with people in the industry.



THE PLAY'S THE THING

LEGO® Education's Dr René Tristan Lydiksen makes the case for combining technology with playfulness throughout young people's learning journey...

There has been a lot of discussion about learning through play over the past few years. Some teachers are already total advocates and practice learning through play in the classroom every day. Others are less convinced and dismiss play, saying it has no place in the classroom at all – especially beyond KS2.

Learning itself is very well researched. We know a lot about what is going on in the mind of the teacher and in the mind of the learner. But learning through play is an entirely different thing. Play is not very well researched and we don't know much about playing. Some societies even look at play as a waste of time.

One of the challenges we face is that many teachers still don't like the word 'play'. After all, 'play' doesn't fit with Ofsted or any of the other textbooks we traditionally use to teach.

We need to change this attitude.

Play is key to learning. We are all born with the natural instinct to play. We're good at it and we like it.

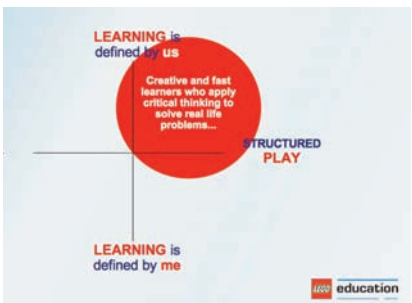
The genius of play is that it's symbolic. It draws upon symbols from the real world which is a source of learning. Play is also meaningful, episodic and rule-governed. If you think about how young people play, it's actually very structured. There are always roles. Children are either giving out roles or taking them. From a very young age you hear "Pretend you're ..." or "I'll be ..." in the playground, and as students get older they take on more real-world roles like a space traveller on the way to Mars. Without thinking about it, children are using language and collaboration skills every single time they play.

One of the powers of play is that it is voluntary and driven by curiosity – it is simply intrinsically motivated, which spurs fast leaning. Play is active – it is a noun and a verb; children don't just think play – they do it. It is hands and minds on.

So how do we take this natural enthusiasm for play and use it to transform the way learning takes place in the classroom?

You can look at learning in two ways.

Learning can be either 'defined by us' – the teacher – using a structured approach to learning within a framework where you have a particular role. Or it's 'defined by me' – the student – where the learner instigates learning by sitting and reading a book or choosing an activity. They both sit at opposite ends of the spectrum but are equally important.



A learning experience delivered via the 'four Cs' framework

1 Connect

The most important starting point for learning is establishing a connection. If students are not connected with what we're trying to teach them from the outset, the learning is slow and unfocused. Be that hands-on learning or digital, if they're not connected to their world of experience, learning is unnecessarily hard.

2 Construct

Once a connection is established and the student is fully engaged, then we can move on to the construction phase. All LEGO Education philosophies have some sort of construction element with the help of the brick. That's what makes learning real. It might be physical construction using the brick or digital, using online resources.

3 Contemplate

The student is engaged, they've created something they're proud of, now we have to get them to talk about it. Let them explain to each other and the teacher what they've done, how they've done it and why. This is where assessment comes in. You can use this phase to assess their understanding and share it with their peers, the headteacher or even the parents.

4 Continue

Just because the classroom activity is complete doesn't mean the learning stops. Students will take what they've learnt and

discuss it with their friends at break time or if they've been really engaged, take it home and tell their parents what they've achieved. This is when the power of technology comes into play. You can establish a two-way interaction with the parents, getting them involved in the creative learning journey.

All four phases of this framework use technology. But none of these phases would stand alone without the inspiration of the construction phase – taking a thought or an idea and using creativity to bring it to life. And that is all inspired by play.

Enabling the teacher

It's a well-researched fact that the single most important factor in the classroom for a child's development is the teacher. So how we can we enable the teacher to combine play and technology in an efficient way?

There is a big gap in CPD for teachers. They are not, as a rulet, taught how to problem solve or be a creative thinker. But that is what industry is looking for; employees with the ability to create – not necessarily just do maths or coding.

We need to move away from seeing young people as consumers of technology. That's our generation. The majority of us don't necessarily get how technology works; we just pick up our iPhones and use them. Our children need to get it. They do get it.

And that challenges the role of the teacher.

Teachers are currently looked upon to be 'subject experts', but industry wants to see students leaving education as experts in certain disciplines, not subjects, so how do we achieve that?

In the UK, 1 in 5 students go on to take STEM related subjects. In China, it's 1 in 2.

Industry in the UK has gone; we need to get it back and we need to start early. Children are born to be creative but somehow we lose that once we get to secondary level and that must change.

In order to achieve that, we need to change the perception of a teacher as an 'expert' to that of a 'facilitator'. That is a very difficult challenge.

In a pilot we did last year, we identified that teachers should be given better support and resource to enable them to lead and facilitate progressive STEM lessons. There is currently no incentive to make a drastic change in learning. It's not measured on an Ofsted scale. We are working with teachers and local leaders to bring about this change for good. A more playful, creative, hands-on approach to learning is more likely to excite and inspire students to choose STEM subjects and to develop skills that are more relevant for the future.

It's time to make learning fun

There is no reason why we can't make learning fun. One of the brain's favorite activities is having fun. You have fun when you're playing and you learn something.

We also cannot get away from the fact that the way young people play and have fun today is changing. They are being brought up with some amazing technology that is becoming so easily accessible and they love it. Our job, and the job of all educationalists, is to harness this passion and blend it with more traditional teaching methods to ensure students of all ages feel excited about learning and look forward to getting into the classroom.

If we can take this enthusiasm for play and all the fantastic technology available and combine it with a systematic approach to playful learning through great 'teachership', then we will start to get the best out of the child and create the best learning experience possible.

ENABLING STUDENTS TO SUCEED

1. Create great 'teachership' by helping teachers to become facilitators not subject experts
2. Change the way our children are educated from subject-led to discipline-led
3. Teachers must identify 'digital heroes' in the classroom – not just 'sporting heroes' on the sports field

MIND games

Keiron Sparrowhawk is keen to cause some disruption in the world of education – and he'd like your help...

Our company develops video games to assess and train cognition in children and adults; to improve cognitive health. One of our objectives is to manipulate the minds of children. This may sound somewhat scary, but we believe the technology is benefiting education and we have the evidence to support this.

I recently attended a panel discussion at the Sunday Times Festival of Education (festivalofeducation.com) at Wellington College. A questioner asked how we could we reverse the trend of technology and go back to the old ways. He was given short shrift by one of the panellists, who said that going into reverse isn't an option, that technology is here for good, it will increase its presence, and those in education have to learn how best to use it.

I had sympathy for the questioner as I am often sceptical of the lofty educational claims made for every new development in hardware and software. However, those who wear rose-tinted glasses when looking to the past, and believe that all new technology is bad, are putting themselves in a similar position to those who thought the fifteenth century proliferation of books and reading was damaging, and even depraving. Despite my scepticism, I know that education needs a 'dose of positive disruption' – and technology might be one way of administrating that. If that disruption is to be effective, teachers must be engaged in the assessment, deployment and uptake of technology. The key is the strength of the evidence for the benefit of technology.

> "There is a strong link between health and education..."

Michael Gove was at the same Education Festival. He made several interesting and perfectly understandable observations, but showed his disapproval of experienced teachers, effectively blaming them for historically poor results in GCSE English and mathematics. There may be a lack of empathy on his part, but his job is to raise educational standards, something teachers should agree with. So how can technology bring the current Minister of Education and the teaching profession together? One way could be the application of technology to improve cognitive health of children.

Health issue

Cognitive health is our mental ability to learn, think and remember. A 2013 report studied cognitive health in students in the US and UK (tinyurl.com/cognitivehealth). The authors measured the cognitive health of students who did well in standard tests and showed that it was higher than those who struggled. The weaker students received further tuition and retook the tests. Many performed better, but their cognitive health was still below the originally well-performing students. The education system was good at improving their ability to pass tests, but not good in improving their cognitive health. This begs the question: shouldn't our education system turn out students who have both a healthy cognition and can pass tests?

We should also consider that we could use technology to screen children to assess their underlying cognitive health. Some children who have a deficit may be predisposed to psychiatric disorders while others may be inclined towards addictions that are socially unacceptable. Some are prone to socially inappropriate behaviour and some are just a few steps away from entering the criminal justice system. As Professor Michel Le Moel of Bordeaux University would say, "They have intrinsic vulnerabilities." (FENS, Milan, 2014.)

Studies suggest that about ten per cent of the overall student population has cognitive health so impaired that standard teaching methods fall short of meeting their needs (tinyurl.com/cognitivehealth2). No wonder teachers struggle to get them to achieve a GSCE pass.

Children with poor cognitive health may come from deprived backgrounds. Their parents' cognitive health is likely to be impaired, making them poor role models. These youngsters lack positive stimulation and their diet and physical health is not good. They may smoke, drink alcohol, take drugs and watch too much TV. They interact too markedly with social media and often don't get enough sleep for health (tinyurl.com/cognitivehealth3). They are prone to see crime as a way to reduce boredom or to achieve 'celebrity status' among their peers.

Most 'good teachers' could teach a class of 'good children' reasonably well, regardless of whether there are 20, 30 or even 40 in that class. But if they have a significant minority of children with poor cognitive health, then even a good teacher will fail with large class sizes. We can therefore see that the requirements of these children are beyond what our educational system can provide. It's not the teachers' fault, but the system in which they work.

Counting the cost

It costs about £100,000 per annum to keep a young adult in detention, yet a fraction of that could be invested in assessing, preventing or improving the cognitive health of children. Instead we pay for them to spend years on social security or in prison. This is a growing cost to society that we simply can't afford to ignore.

A study in Alberta, Canada, is assessing 5,000 students for psychiatric predispositions, addictions, educational ability, interaction with the criminal justice

system and overall costs to society. The poorest performing will be given help to keep them in mainstream education, to help them achieve their personal goals and to reduce overall costs to society.

In the UK, we have proposed undertaking a similar large-scale study. We plan to assess the cognitive health of cohorts of children with ADHD, autism, dyslexia, dyscalculia and eating disorders plus a cohort of young adults in the criminal justice system. After the assessment, each individual will enter the cognitive health-enhancing programme that is personalised to their cognitive health level. All will play the same action video game, except it will be tailored to their needs. There is no stigma attached and no sense of it being a medical intervention. The technology is inclusive and fun, engaging and adaptive. It's disruptive and it manipulates minds, but in a good way.

Our aims are two-fold. First, regardless of initial levels, to enhance the cognitive health of all children. We have already demonstrated that this is a possibility in a large study of 600 children (Federation of European Neuroscience Societies Abstract Publication number 1746, Milan 2014). Furthermore, we will profile the cohorts and screen for similar children in the mainstream population. We suggest that they undergo intense cognitive training in the hope of improving their life chances and saving a huge cost to society.

There is a strong link between health and education. Countries that want successful economies must invest in both to achieve a strong, bright, healthy, vibrant, energetic and productive population – but the UK doesn't invest sufficiently in either compared to other developed economies. A good use of technology in assessing and training the cognitive health of our children could go some way to make up for this lack of investment.

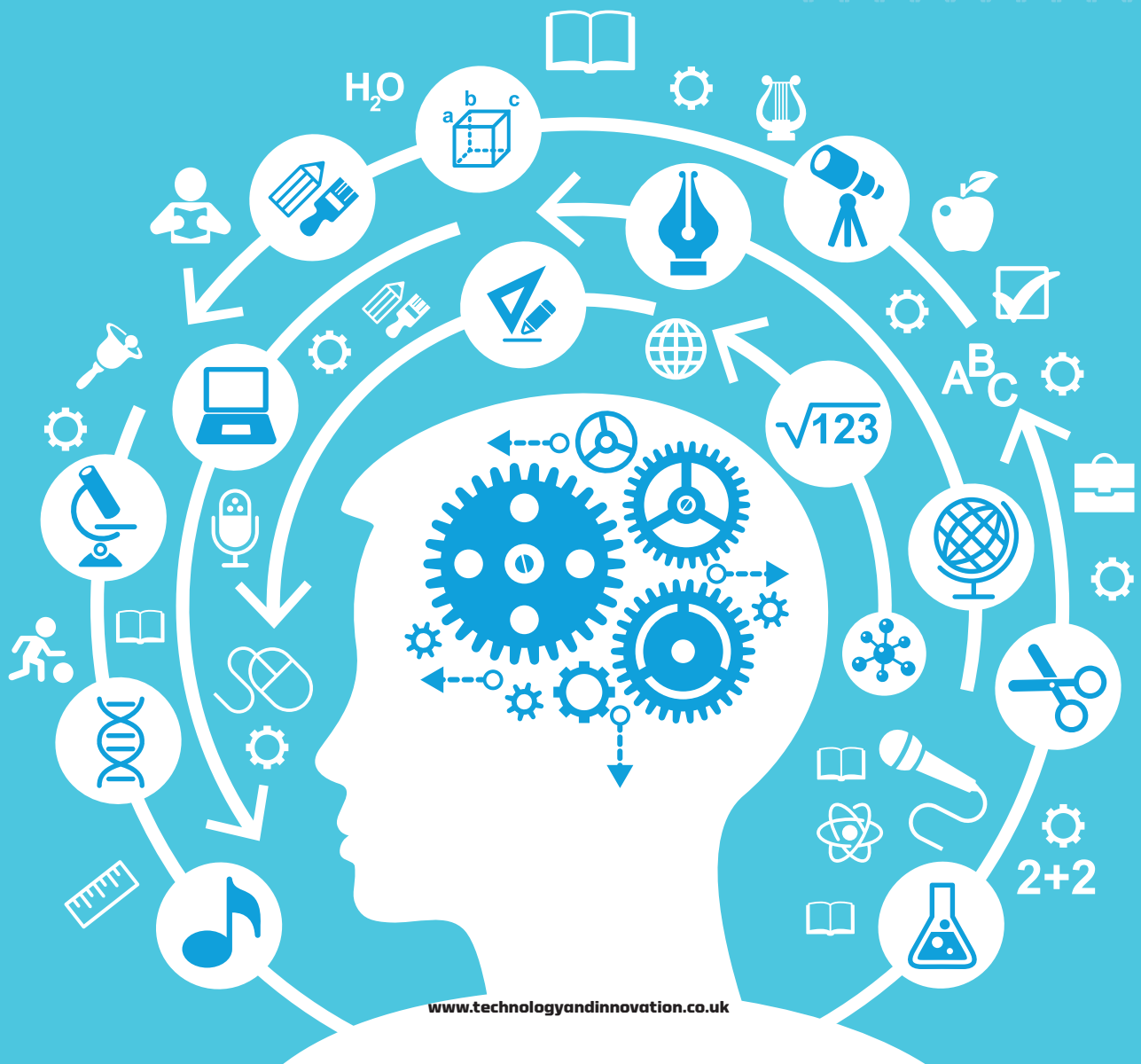
We should also be concerned about children with a higher than average cognitive health. They also need to be challenged in order to keep them engaged in the education system.

In short, we feel strongly that technology can disrupt education for the good. We are working to prove that it can benefit educators, society and most of all our children – but we cannot do it alone.

We need your help. Contact us... and discover how, together, we can be most wonderfully disruptive.

ABOUT THE AUTHOR

Keiron Sparrowhawk is the founder of MyCognition, which develops video games to assess and train cognitive health. He is a successful businessman, working in healthcare for 38 years. He lectures part time at Cambridge University.



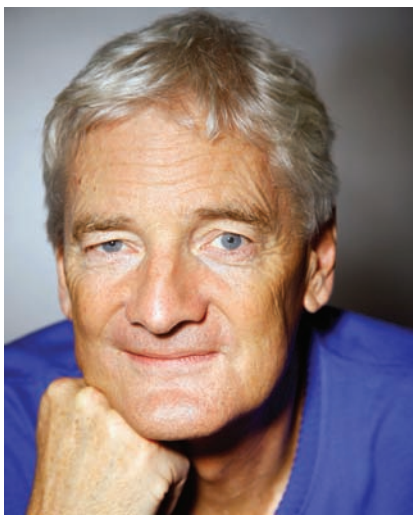
The design revolution

Get the latest engineering equipment into students' hands, and you'll be amazed at what starts to happen, urges **James Dyson**

"A new Design and Technology curriculum for KS1-3' are words that can fill a teacher with dread. Lauded as the best thing to happen to the D&T classroom in recent years, a little anxiety about what the latest draft brings is only natural. But this time, I think they might be right. The new curriculum is brimming with potential.

In my day, it was woodwork. I made a pen pot which I didn't need – and didn't care about. Engineering was the last thing on my radar and I drifted into furniture design. It wasn't until I started working on the DC01, the first ever bagless vacuum cleaner, that I really got to grips with the excitement of developing your own invention. 5,127 prototypes down the line, I reached success. With each prototype I was one step closer to solving my problem.This curriculum brings that satisfaction into the classroom – thanks to its focus on the design process: 'design, build, test'.

My charity, the James Dyson Foundation, worked alongside the Design and Technology Association, the Royal Academy of Engineering and other advocates of engineering to boil down design, technology and engineering. and what skills students need to progress on that path. Most importantly, we wanted to bust the myth that engineers are grubby men in glasses who come to fix your cooker. Instead, it's high tech, it's vibrant, it's vital. In the new curriculum you'll see the focus is on an iterative design process. There's a push towards high tech equipment and practical learning, and if delivered well, the students will get a glimpse of what it means to be a design engineer.



> "You certainly won't find this sort of kit at home, which is what makes it so exciting...

Hands on success

We know it works. My Foundation has been working to create this industrial environment at five schools in Bath. The project was so successful, it's shaped the subject's curriculum. Two years ago, we donated £75,000 each to five schools in Bath. Each school used this to create state of the art design engineering labs. Students can jump onto a computer and moments later watch a 3D printer create their prototype, or create cleverly engineered parts on a laser cutter. They have all of the equipment you'd find here at Dyson, and they take to them like a duck to water.

You certainly won't find this sort of kit

TEACHING THE NEW CURRICULUM

Not too sure where to start? The James Dyson Foundation creates free teaching resources to help schools to bring industry practice into the classroom...

+ IDEAS BOX
The Ideas Box is a beginner's guide to iterative design. Ideal for year 7 students, it introduces them to what it means to be a design engineer. Students scout around the classroom, looking for objects which annoy them. Once they've found a problem, they design ways to fix it – creating a prototype. The box is loaned for four weeks, free, with posters, a DVD, a teacher's pack and a Dyson Air Multiplier fan as an example of how you can redesign an existing item.

+ ENGINEERING BOX
The Engineering Box comes with a Dyson vacuum cleaner and all the tools you need to take it apart.

Students learn about materials, manufacturing and the science behind cyclones. They start thinking about all the decisions which go in to creating a machine and taking it to market. The box is loaned for six weeks, completely free, and comes with a teacher's pack and posters.

+ CHALLENGE CARDS
We asked the engineers at Dyson to submit their favorite STEM challenge for children – and picked the best 52 to turn into a pack of cards.

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at home, which is what makes it so exciting. But the real transformation in each school has come from the kinds of lessons that teachers have been delivering. A champion educator in each school was tasked with coming up a new scheme of work for Year 8. Rather than being told what to make, students are set a brief. How would you deliver aid to a remote location in the desert? How can you generate power on the blustery coast of Wales? Each brief challenges students to work in a team and draw together everything they know about maths, science, technology and design to solve a problem. And when you visit these classrooms, the buzz of rough and ready prototyping is palpable.

The students aren't afraid of failure – they're on prototype number five and aiming for success. They say things like, "I couldn't really get my head round science lessons. But when I apply it in D&T I don't forget things." This is evidence of what we already knew: getting practical is the best way to understand, and see the relevance of scientific principles. And the teachers are learning that giving the students autonomy is the best way for them to learn. Uptake of D&T has increased by 200% in each school.

But we can't stop at KS3. This needs to feed into GCSEs, A level and university qualifications. If this vibrant, exciting subject retains its rigour and its intrigue, we can't help but create the design engineers we so desperately need. My Foundation will keep campaigning for better qualifications for our budding engineers. If we get it right, there's no reason why D&T couldn't be afforded the same status as Computing and sit within the Ebacc. That's the only way to plug the engineering deficit and create a pipeline of engineering talent for years to come.

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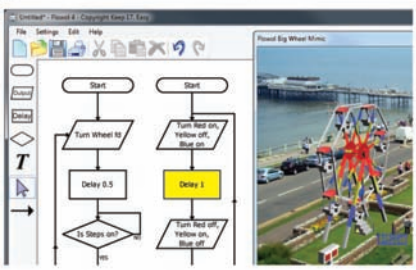

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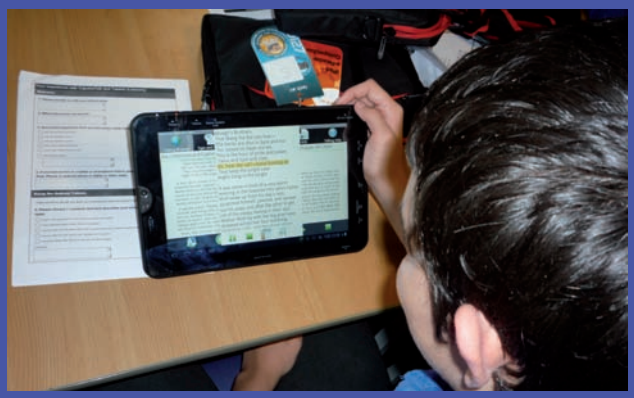

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IN THE SPOTLIGHT

Take a look at these outstanding examples of technology and innovation developed for your classroom...

3 EFFICIENT ASSESSMENT

'It probably saved us approximately 100 LSA hours of marking and processing' was the experience of the Learning Support Department of one school in Maidenhead when they used Lucid Exact.

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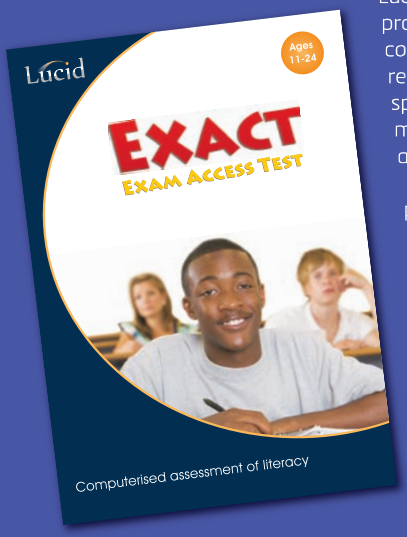

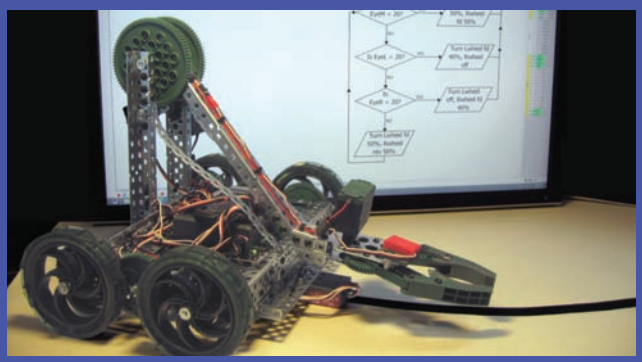

4 GET WITH THE PROGRAM

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You may have an older version of Flowol and if so, upgrade pricing to Flowol4 is available. The Python programming is free with the online editor at www.robotmesh.com/project. A standalone version for use at the VEX Robotics Competitions will be available this autumn.
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Let's get TOGETHER

What does 'collaborative learning' really mean, asks **Jan Willem Brands**...

With buzzwords and phrases like collaboration, and consumerisation of IT becoming part of the global business vocabulary it is no small wonder that they are finding their way into education.

In a recent report released by New Media Consortium, a not-for-profit organisation comprising an international community of experts in educational technology, several trends were identified and discussed. This included the continued use and availability of social media, the integration of online, hybrid and collaborative learning, and the shift from students being consumers of educational content to being creators of it.

Collaboration, underpinned by the appropriate technology, can be seen to be playing a more important role in education from primary school level all the way through to FE and HE. But in practical terms, how can this idea of having secondary level students collaborating with one another, and with educators, in the learning process be realised?

While a host of collaboration technology is available on the market, it is perhaps more suited to the business environment where policies regarding access, downloads and usage behaviour can be better implemented and maintained. Instituting these types of usage policies or device management guidelines within a school setting may cancel out its benefits in the first place. With a greater emphasis being placed on supporting multiple learning styles, collaboration is becoming ever more significant. Technologies to facilitate collaborative learning within the classroom see their most obvious benefits in subjects with strong visual elements, such as media and the graphic arts. However they can offer value to any course that includes group projects or presentations.

One forward thinking US based institution, the Charter School of San Diego (CSSD), has spent more than two decades working to change the way students learn, employing innovative techniques and resources to meet the individual learning needs of their special needs pupils. One positive solution that the school has deployed in its classrooms is Barco ClickShare, a wireless presentation and collaboration system that fits with the CSSD's model to integrate technology based activities and assignments that facilitate learning into the curriculum.

Tiffany Yandell, Operations Coordinator for CSSD, explains said: "Our students come from all walks of life, and many are several grade levels behind in basic maths and language skills. We wanted to find new ways to engage them with different tools than they were exposed to at their traditional schools. ClickShare has really helped bring classroom instruction to life

62%

of children between the ages of 12 and 15 own a tablet

82%

of children ages between 12 and 15 own a smartphone

with real-time visuals that reinforce concepts and encourage students to participate in lessons."

Keep it simple

In classrooms generally, the ideal collaboration technology is one that brings simplicity, efficiency and ease of use to situations that require students and teachers to use different devices to accomplish their goals. Today's students are the next wave of digital natives. Consider that according to a recent research report by Ofcom 29 per cent of children between the ages of five and 15 own a smartphone (82 per cent of children ages between 12 and 15 own a smartphone), and 62 per cent of children between the ages of 12 and 15 own a tablet. The research also found that 72 per cent of children between 12 and 15 own at least three media devices.

While multi-media collaborative whiteboards exist online, supporting collaboration across multiple devices to allow students and teachers to share content – documents, videos, graphics or presentations – on a common screen is more complex. Typically a dedicated PC is used for this purpose. The types of external devices and files that can be supported in this set-up are limited because issues arise around compatibility.

Different devices used by students and teachers are likely to use disparate operating systems – for example iOS, Android or Windows. Connecting to the classroom technology may require cables or adaptors, the configuration of settings, or may not be possible at all without intervention from IT support. Delays and frustration caused by the inability to connect effectively and quickly to classroom technology can have a negative impact on participation, concentration, and the overall learning experience.

In addition, with such a focus on collaboration and team work, it is often necessary for more than one student to use the shared screen at the same time. In a situation where a teacher and numerous students are sharing ideas and content visually on the same screen, each participant needs a cable to connect to the screen, settings need to be configured and time to get up and running. The Barco ClickShare system enables multiple users to connect at the same time, and share the common screen, while supporting different devices and operating systems.

In the classroom, it brings ease and efficiency to content sharing by connecting up to 64 participants simultaneously to a shared screen with no cables, adaptors or connectors necessary. The system uses USB devices that are simply plugged into laptops running Windows or Apple operating systems, to connect users to the shared screen. Four students could share the screen at the same time, and connect by one simple click of a button. With another single click users can be changed to share the screen, and information is seen instantly. In addition, for students using smartphones and tablets, there is an application for iOS and Android platforms.

At CSSD, there were 22 workstations, including dozens of computers, iPads and other devices. The institution needed a way to bring all of the technologies together in a cohesive, collaborative way. ClickShare allowed users to present their content from their laptop, tablet or smartphone on the main classroom display in a simple, straightforward way. The CSSD instructors are using the system to integrate a PowerPoint with notes, annotate a picture, and pull in a web browser, all at once, to reinforce concepts. This allows students to easily share ideas and collaborate in new ways, as a result the interactive learning element means teachers can immediately address questions or students can help each other.

Regardless of the appetite that students have for technology, or the myriad of devices that they use, the presence of a robust, easy to use and efficient collaboration technology system within the classroom environment will form the basis for successful co-operation in education. The Charter School of San Diego is one of many institutions making it part of their instructional technology plans; given the rate of technology growth and uptake by the younger generation, multi-device collaboration support is becoming a vital teaching tool for the future.

ABOUT THE AUTHOR

Jan Willem Brands, general manager, collaboration, at Barco

Practical magic

Could modern advances in data logging technology help teachers get their students excited about science? **Vincent English** thinks so...

Long before the notion of any kind of Ebacc, science has always been one of those three core subjects on which schools like to focus their attention; academic achievement in English, maths and science has been at the top of schools' agenda for decades. Science is a subject that has the perennial capacity to invigorate and excite students, with a long and exciting history of revolutionary discoveries that have shaped the world as we know it. Take Louis Pasteur's discovery of penicillin; a breakthrough that came from a Petri dish being left to grow mould – which just so happened to be mould with lifesaving properties. It is by making science into something tangible and stimulating for students that you can keep them engaged, and allow them to see the subject as so much more than just period five on a Tuesday.

In the world of science, discovery relies on the practical rather than simply the theoretical. Scientific exploration plays well to the natural curiosity of young people and it underpins many of our biggest scientific advances. The Council for Science and Technology, the non-departmental advisory body of the Department for Business Innovation and Skills (BIS), sees practical science education as critical too. In a letter written to the Government last year, it stated that there has been a decline in laboratory skills, which "is of significant concern to the industry and universities." The Council also added that "practical work develops technical and scientific skills, and improves scientific understanding." Without these skills, even those students with a keen interest in science could be leaving school without the technical aptitude to enter the scientific job market.

Ofsted's recent report into science education in schools, 'Maintaining Curiosity', focuses on the importance of maintaining student interest in the sciences. The report states that "concerns often voiced by employers, higher education, and the scientific community's professional bodies, is that too many school leavers are not well-enough equipped scientifically with practical, investigative and analytical skills. These are vital if young people are to flourish in a technological world and to contribute to economic development."

With this in mind, many teachers are looking for dynamic ways of bringing science to life, recognising that the subject resonates much more with students when the focus is on discoveries rather than rote theoretical learning alone. But with increasingly heavy workloads, and with health and safety often proving to be the enemy of more hands-on experiences, it can be a real challenge for teachers to 'tick all the boxes' required whilst keeping students engaged. Naturally, educators are already doing their utmost to equip their students with the necessary skills to succeed in both their academic and professional careers; however, until recently they have been hindered by technology that has prevented them from enjoying certain experiments with their classes.

For example, data collection is an essential part of most science experiments; but there is still the perception of data loggers as unreliable and clunky, and teachers generally avoid their use where possible. However, data logging has progressed in leaps and bounds over the past few years, and all good suppliers can now provide seamless, versatile and powerful data logging tools. These are simple to use; only a basic understanding of computer technology is needed to get the most out of them. Interesting research from NUI Maynooth, done with trainee teachers, found that data logging can break down the traditional barriers between students and teachers, as they are able to communicate via this computer based language, using a data based stream between and iPad or iPhone. With this in mind, here are a few simple experiments that can be demonstrated in the classroom using a data logger.

Age of the universe

This experiment is a study on Hubble's Law and enables students to get a better understanding of the expanding universe. You will need a black latex balloon, which will be used as a model to show the expanding universe. Ask the students to mark out galaxies on the surface with a permanent felt tip marker and afterwards design a suitable method of measuring distances between them before and after expansion. Students then use a data logger (e.g. Logger Pro or LoggerLite) to enter data in a table and then graph the plot of recessional velocity against distance. Research Hubble's Law with your students and discuss how they can relate this to their graph and understand how to determine the age of the balloon 'universe'

Velocity and acceleration on time displacement graph match

Using a time displacement graph to demonstrate a student's real 2D motion, this experiment explores the idea that changes in the movement of an object requires a net force to be acting on it. You will need a computer with LoggerPro, and a Motion Sensor (Such as GO Motion)

+ The student walks in a straight line toward and away from a motion sensor
+ The student's motion will describe a trace on the screen, which should match the shape on the graph
+ Numerous student runs can be made and saved and then be compared
+ The speed at which the student moves is directly related to the slopes (gradients) on the graph

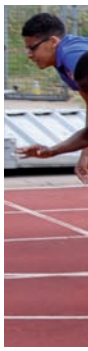
Water temperature experiment

The temperature of a body of water influences its overall quality. Water temperatures outside the 'normal' range for a stream or river can cause harm to the aquatic organisms that live there. It is for this reason that the change in the temperature of the water over a section of a stream is measured, not just the temperature at one location. If the water temperature changes by even a few degrees over a one-mile stretch of the stream, it could indicate a source of thermal pollution. You will need a stainless steel temperature probe for this experiment. Place the tip of the probe into the stream or into a cup with sample water just taken from the stream. Submerge the probe tip to a depth of about six centimetres. Click to begin data collection. Leave the probe tip submerged for the ten seconds that data is being collected. When the sampling run is complete, stop data collection and record the average temperature on a calculations sheet. Repeat this further upstream, or using a second sample, then compare results.

The way science is taught in schools has changed. The leap from when I was teaching in classrooms a decade ago to today in terms of the technology and equipment available is extraordinary. Until recently the changes will have been largely superficial; the manufacturer might have updated the packaging but the equipment would have remained the same. Today, technological developments mean that the face of scientific teaching has completely changed. If schools can truly harness the potential that tuis offers, then the opportunities for educators are infinite. I believe that it is through the use of advanced information and communication technologies in schools, coupled with the implementation of hands on experiments in schools, that we will be able to help create our future innovators.

ABOUT THE AUTHOR

Vincent English is CEO of Vernier Europe. Vernier's technology-based solutions enhance STEM education, increase learning, build students' critical thinking skills, and support the science and engineering practices detailed in the Next Generation Science Standards (NGSS). Find out more at vernier.com.



ANY TIME, ANYWHERE

Independent learning is the aim at Southborough High School, says deputy headteacher **Craig Wicking**, and now staff and students have access to the mobile technology they need to achieve it...

Southborough High School is a specialist business and enterprise college based in Surbiton, Surrey, that was converted to academy status in August 2012. Our aim is to inspire our students with a passion for learning and achievement, both academic and extra-curricular, and to facilitate independent student learning and metacognition – learners' automatic awareness of their own knowledge and their ability to understand, control and manipulate their own cognitive processes, important in school and throughout life.

We nurture our students' self-belief and their ability to set themselves challenging, achievable goals, while developing their self-discipline and independence as learners and young adults. We also aim to develop and sustain a happy, stable community and environment, in order to prepare our students to become active, considerate, fulfilled members of society.

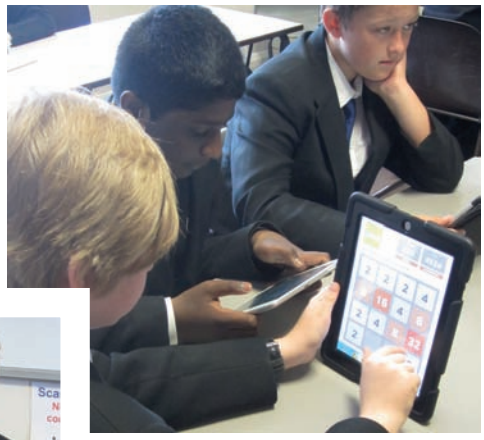
But, it wasn't always this way. We came to the vision of independent learning through a need to improve A Level results, having shown substantial improvements in GCSE results over the previous eight years. We discovered that the intervention and support we provided up to GCSE wasn't helping in the independence needed for A Levels. To impact the improvement of results we needed to address this as soon as students joined the school, and embed in the learning culture a sense of being able to solve problems independently.

At that time, lessons were heavily teacher-led. Because we only had a fixed portfolio of ICT resources, it meant teachers had to decide when it was appropriate to use ICT. This didn't fit with our ethos of students being less consumers of education and more participants in it. So in 2012, we re-evaluated our ICT needs to align with our desire to create a flexible and mobile learning environment that encourages metacognition.

We placed student learning at the core of our ICT requirements and we complemented this move by working with Stone Group to deliver 1:1 learning in Years 7 and 8 through its @ccessAbility scheme. This provides 1:1 device access for students at school and at home, without placing the admin burden on schools.

The objective was to enable students to decide when and how to use ICT to enhance their own learning in subjects across the curriculum. For example, in PE and drama, students can now film their performance and use this to critique and improve their own work. In languages, ICT is used as a mobile language lab, and students can connect over Skype with others students at a partner school in Madrid. For English students, e-readers not only enhance literacy skills across a school population with limited access to reading materials outside of the classroom, but gain free access to out of copyright texts.

Other examples of the practical use of



technology include maths students having easy access to web based software such as MyMaths. In D&T teachers film practical techniques, which students can store on their device and reference as and when they need to.

Flexible technology

The work we are doing around student independent learning and metacognition will create a learning environment in which students are less reliant on input from the teachers and more focused on discovering answers to their queries themselves. To facilitate this work we looked at various Bring Your Own Device (BYOD) options so students and teachers can bring in their own personal electronic devices to aid learning.

We were looking for an agnostic approach to device choice, where students and staff could use the device they are most comfortable with, be it a laptop, tablet or hybrid. A BYOD scheme came at a lower cost to the school and meant we could facilitate a wider rollout than one school year at a time.

Stone Group recommended deploying a Citrix Virtual Desktop Infrastructure (VDI), which utilises server hardware to run desktop operating systems and application software inside a virtual machine. Users access these virtual desktops using their own devices; this eliminates the need for workstation hardware upgrades and also enables the user to switch between operating environments, saving valuable physical space and considerable costs.

A matter of choice

Once the VDI was in place we then had the flexibility to roll out Stone's 1:1 @ccessAbility scheme. 1:1 learning enables teachers to plan lessons based around one pupil per device. Because @ccessAbility is vendor independent, we (the students and teachers) could choose between a range of devices and operating platforms, whether it be Android, iOS, or Windows.

We took a flexible approach, which allowed students to choose from devices such as iPad, iPad Mini, Google Chromebook, and Macbook Air – in two phased rollouts. Students would also be able to take advantage of the freedom and mobility of using the same devices at school as the ones they were used to at home, transforming any space into a learning environment.

Stone Group's @ccessAbility scheme runs for two or three years and the school signs the master lease agreement on behalf of all parents. Parents then make a monthly donation based on what they can afford and at the end of that period our students can either make a final contribution and keep the device or return it to the school. This allows students access to high performance technology that might normally be too expensive for families to pay for outright, and provides continual access to the technology for their educational needs.

Almost 30 per cent of Southborough's teaching staff have also signed up to a similar scheme and pay for a device through salary sacrifice. This gives staff access to the latest technology and provides a consistent single interface via the VDI to better personalise the teaching and learning experience. Staff are able to teach using the same devices that students are learning with, providing a harmonious foundation for the school to build pedagogies based on metacognition.

These schemes enable students and staff to access the school desktop wherever they can get an internet connection and on whatever device they are using, rather than restricting access to specific times in IT labs across the school. The VDI has empowered our students to become more independent, and for technology to play a more active role in their studies through an enhanced teaching and learning experience.

We have about 75 per cent of the school's population logging into our school Wi-Fi every day, and about 25 per cent logging into the VDI. It's working really well with younger pupils in particular because they have been empowered by this new way of working since the start of their school career. In Years 7 and 8, we have achieved almost true 1:1 learning and this is having a real impact on how teachers can structure lessons and how students access information and take responsibility for their own learning.

The solution supports our goals for independent learning and also makes financial sense for the school, students and staff alike. We expect to save significant sums of money on our IT expenditure over the next couple of years. But above cost savings, this solution provides the school, its staff and students with the latest technology to facilitate better teaching and consequently better learning.

> "We placed student learning at the core of our ICT requirements..."

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Microsoft

Q&A
Games based learning

XBOX 360 FOR EDUCATION

Microsoft's Lee Williams explains how bringing Xboxes into the classroom can inspire great teaching and learning across the curriculum...

VISIT: WWW.XBOXFOREDUCATION.CO.UK CALL: +44 (0)1279 822 822

T&I: Can you really make a solid, educational case for putting Xboxes into schools?
LW: Absolutely, in short, Xbox for Education aims to get students excited and see learning from a different perspective. With Xbox for Education there are two solid reasons for why an Xbox console is ideally suited for the classroom. The first is the growth of Games Based Learning – there is a growing body of research which suggests computer games can stimulate successful learning environments and provide motivational contexts for learning. Games have rules for structure, goals that help motivate, there are elements of problem solving, storytelling, and more importantly they have outcomes and feedback which ultimately delivers learning. The second reason is the shift in the IT curriculum toward coding and programming languages – Xbox for Education ships with a 3-Year DreamSpark subscription, which allows classroom leaders to teach their students to code and develop, on a platform they are familiar and engaged with: Xbox.

What, exactly, are you offering schools through Xbox for Education?
Xbox for Education offers UK schools, colleges and universities a discounted Xbox 360 Console and a 3-year DreamSpark subscription bundle with the aim of making coding and software development more accessible to pupils and students. By combining an Xbox 360 console with the 3-year DreamSpark subscription, we're giving students professional-level developer and designer tools so students can chase their dreams and create the next big breakthrough in technology – or just get a head start on their career.

Are you able to provide support and resources for teachers who invest in one of your package deals?
Yes, Microsoft has a dedicated education team whose role is to support teachers and classroom leaders. In addition to the resources available at www.xboxforeducation.co.uk we offer full support in terms of curricula resources and dedicated networks such as Microsoft Educator Programme. We are committed to equipping teachers and educational professionals with the best technology resources and guidance. In an effort to streamline resources and provide a seamless experience, relevant materials can now be found at Microsoft.com/education

What is Microsoft's take on the place of computing in the new National Curriculum? Have we got it right yet?
Microsoft welcomes the changes to the national curriculum – we're seeing a resurgence of interest in developing pupil's understanding of how computers work, how they're programmed and the fundamental ideas underpinning computation. China and India have hundreds of thousands of computer science graduates, and currently there are 100,000 vacant jobs in the UK technology sector, but we have a skillset gap. With just 7,434 UK computer science graduates in 2013, these changes give the UK an opportunity to catch up. These are exciting times for computer science education.

Why is it so important that all young people should be taught coding? Surely such skills are only relevant for those who will go on to become programmers in later life?
A grasp of coding opens up opportunities in further academic and vocational study as well as career options in, and beyond the IT industry – it's certainly not just programming jobs where the ability to program is useful, as Education director Steve Beswick says: 'Coding isn't just coding. In many cases it's helping with maths, English and strategic thinking'. There's also the element of empowerment, given the role that digital technology already plays in our lives, those who understand how computers work, and who can program computers themselves, will almost certainly enjoy greater autonomy and be more active participates in the increasingly digital society.

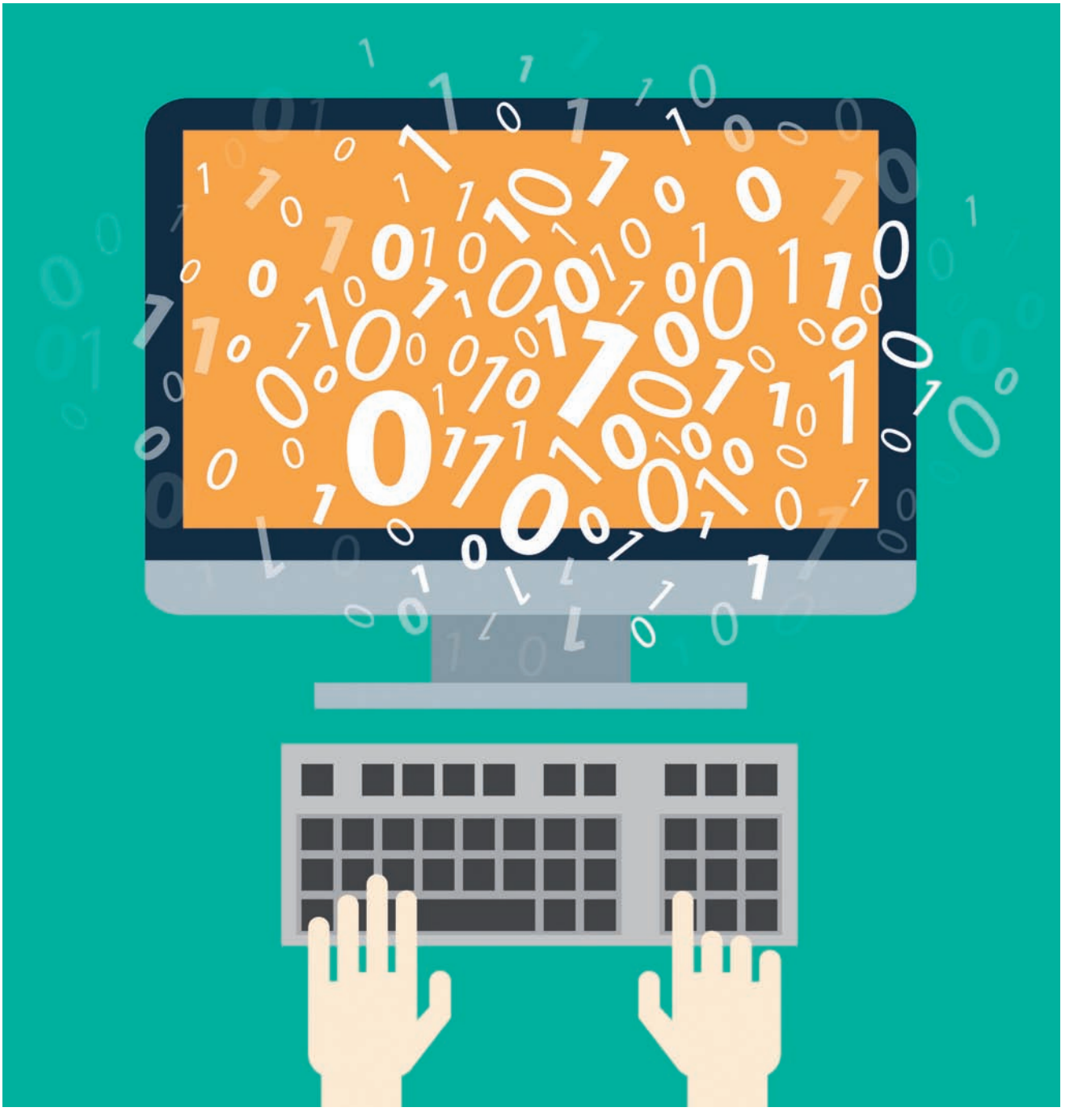
How else is Microsoft pursuing its aim of 'ensuring every school leaver is IT literate'?
Microsoft is committed to ensuring every school leaver is IT literate, we have a number of resources and initiatives to help us achieve this. One such initiative is our 'Get On' project – spanning over three years we aim to help 300,000 young people based in the UK, get inspired, get skills or get a job.

We're doing this by offering insights into IT careers, offering opportunities t o gain valuable skills and supporting routes into early stage employment. Microsoft also offers a wealth of free resources, including Microsoft Virtual Academy, a collection of free expert led training courses which aim to help anyone interested in advancing their careers through training on Microsoft technologies.

XBOX 360 Xbox 360 for Education

Cracking THE CODE

It's all very well adding computing to the curriculum, says Young Rewired State's **Ruth Nicholls**, but it's how we teach it that really matters...



From September computing is going to be introduced into the ICT curriculum across England, a move which most would say is long overdue. For years, campaigns such as 'Year 8 is Too Late' have fought long and hard for this change, as up until five years ago little or no recognition was given to these skills unless you were racking up billion dollar enterprises – cue Bill Gates and Mark Zuckerberg.

Since then, it has naturally been up to other organisations to pick up this slack and bridge what could be a worrying skills gap in the future. From those which teach kids to code, such as Coder Dojo or Code Club, to those which work to discover and foster the self-taught talent, such as Young Rewired State – it's initiatives like this which have really struck a chord with UK Government and varying education bodies.

So why coding?

Now more than ever, young people's confidence and ability to navigate websites, apps, games and programmes is hurtling forward at a speed of knots. But it's important to remember that there is still a major difference between engaging with the web and really utilising it. Computing, specifically coding, is the key skill that enables a person to start influencing the web and making real choices about how they interact with and alter the content all around them.

Computing know-how gives us the tools to absorb, criticise, and ultimately change what the internet is telling us.

As passive consumers most of us don't even realise that we are getting very little say in the destination. When you ask the web a question, it gives you a programmer's answer, because they are the ones with the ability to generate it.

With that said, it is still interesting to consider the extent to which the introduction of computing is both welcomed and perhaps feared by the organisations who have been working in the 'kids who code' space, not forgetting YRS. Most of us see two broad outcomes to this experiment, one good, one bad – both entirely depending on how this curriculum is delivered, measured and tested.

Computing and coding, as children know it today, does not fit into a traditional educational box so to make a success of a computing curriculum we're going to have to invert a few traditional educational models – it would be pretty unusual go to school and be left to your own devices in front of a PlayStation.

When thinking of a more traditional model, we might imagine it going something like this:

> "Computing and coding, as children know it today, does not fit into a traditional educational box..."

+ Teacher teaches the class a few basic commands and then they all get told something they can now make with those commands.
+ Then they all make it
+ Then they learn some more commands and get told they can now make something else, a bit more sophisticated
+ And then they all make that
+ And so on

I was very recently privy to a bit of coursework for a new computing qualification at an event, and the whole course only required only one piece of actual coding (one piece!), which was to be accompanied by ten pages of notation on how that functionality was programmed. There were right, and wrong answers.

We need to be aware of and avoid this kind of closed-ended instruction. Whilst trying to foster the next generation of coders the worst step we can make is hindering any level of creativity beyond changing the colour of some text, and adding to this further by a narrow set of exam criteria (as we know these will very quickly become the benchmark for future success as coding gets more and more integrated into the curriculum).

So how can the traditional teaching model be adapted to help teach kids computational thinking at school?

The YRS model is quite a unique one in that we start by coming up with a desired end point – either that it will serve a purpose or respond to some sort of problem – and only from this do we start working out how we get there. If you're missing a piece of what you need, whether it's a line of code or an idea about how to overcome a problem, we encourage our coders to draw on their peers. They could start with classmates in the room, ask a mentor, or just ask the internet. Most of the time one of those, or a collective, will have the answer, or an idea of how you can generate an answer. And we know this works not just because it's how we do it but because it's how pretty much anyone who's ever coded up until now learnt to do it.

As part of this, teachers then become the facilitators who are there to point the kids in the direction of the tools available to them, or otherwise someone who has the skills they're looking for in the room. And then the truly important part – stepping back and letting them create their own path and find the route that works best to achieve their desired outcome.

Some people may find this approach a stark contrast to traditional teaching methods, but we must give kids the autonomy and freedom to come up with their own solutions, allowing them to experience the immense satisfaction of thinking of an idea and actually making it happen. We find this plays a major factor in their love of computing as the end result is something completely relevant to them – if they really need that metronome mobile app they're going to build it. Imagine it; the UK generating young tech geniuses and inventors by the bucket load, purely because they are never taught to think they've got as far as they can ever get.

Coding is about opening up the possibilities and letting your imagination run wild to solve sometimes the most simple problem – what about an app that sends a request to your bank whilst playing you the national anthem? Or even does all that while making you breakfast, too?

Coding and programming are such hugely transferable skills so it's critical we individualise and as much as we can, while we still can. Our hope is that this spirit gets translated into the classroom come September, and we can work together to build masses of coding heroes in the next generation and beyond, which is no bad thing.

ABOUT THE AUTHOR

Ruth Nicholls is head of partnerships at Young Rewired State (youngrewiredstate.org), an independent global network of kids aged 18 and under who have taught themselves to program computers. YRS introduces these children to like-minded peers at events around the world where they use freely available open data to make websites, apps and algorithms to solve real world challenges.

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A 21ST CENTURY CHALLENGE

Great Classroom Management software is not about 'spying', but effectively supporting teaching and learning...

From Windows to Mac, Chromebook to tablet, virtualisation to thin-client, there's no denying the vast array of classroom technology on offer.

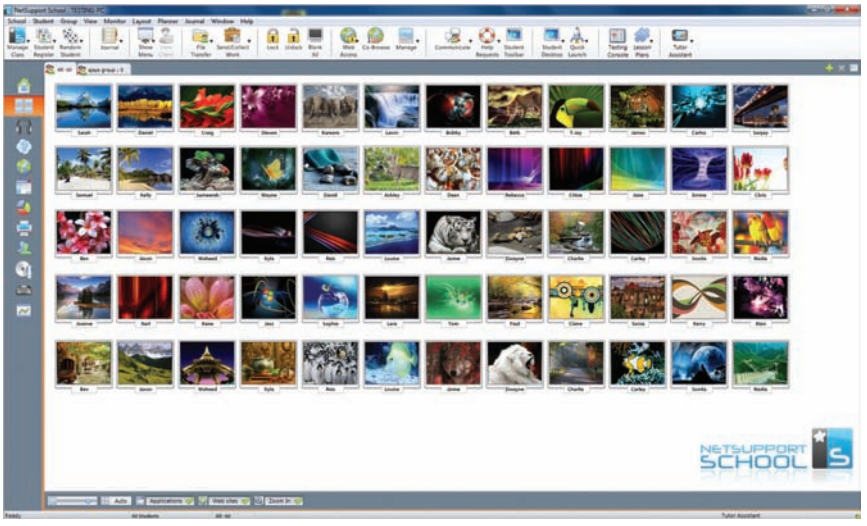
But whatever the chosen platform, the challenge for teachers is still to ensure the environment is managed efficiently and the required learning outcomes are fully realised.

Classroom Management software has long been the answer to these challenges, providing the tools needed to administer a fully monitored learning environment.

"Without appropriate management and control tools in place, it is very easy for students to misuse the technology they have access to in the classroom," argues Nick Smeltzer, Director of IT Services at Warrington Collegiate. "Equally, teachers who are maybe at a disadvantage in terms of their own technical ability need to ensure that their teaching is effective in these environments. One of my first objectives was to introduce Classroom Management software in order to give teachers the tools to be able to monitor what the computers were being used for and to help them conduct their lessons in a productive and safe manner."

As it celebrates 25 years at the forefront of educational software development, NetSupport is well placed to chart the continued relevance of this breed of software. Its own offering, NetSupport School, is one of the most widely used and in recent versions has certainly had to adapt to the changing climate – both in terms of features and its compatibility with the varied mix of technology entering the classroom.

"While not forgetting its roots as a tool that aids the efficient management of computer activity and, crucially, helps schools implement a successful e-safety strategy, we are also conscious of what's currently being asked of teachers in terms of applying Ofsted best-practice guidelines,"



explains NetSupport's Marketing Manager, Chris Lovesey.

"AfL (Assessment for Learning), a key strand in education, is a good example," continues Mr Lovesey.

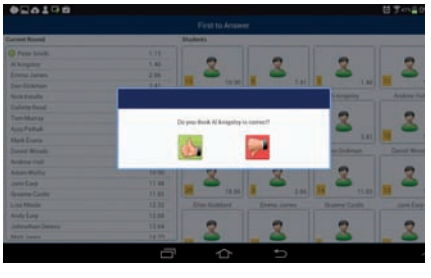
"NetSupport School provides a number of options to help with the continual assessment of student understanding. The ability to display clearly visible lesson objectives and expected outcomes on student screens, record all lesson activity in a digital 'student journal', ideal as a personal revision aid and for teachers to share with absent students, and one of the newer additions, our unique 'Q&A' Module.

"The software already offered assessment-type tools; a full 'Testing Module' that facilitates the delivery of pre-prepared tests to each student PC and where the teacher can monitor progress and the results achieved in real time, and class surveys, which enables teachers to poll students for instant feedback. While adding significant value, both require pre-planning and do not cater for topics to be expanded across the group.

"The 'Q&A' Module removes the necessity for prior preparation, allowing a teacher to verbally develop a questioning theme using techniques like 'bounce-questioning' and gives students the opportunity to assess their own work and that of their peers."

The NetSupport technicians are also working hard to ensure the product remains future-proofed, as Chris Lovesey continues: "Building on its core Windows capabilities, we have responded to the growing adoption of mobile technology and BYOD initiatives by introducing dedicated apps for Android and Apple iOS devices; a version for Chromebooks is available, along with a compatible product for Mac and Linux. Teachers and their classroom assistants can even monitor classroom activity on the move with our free Tutor Assistant app for tablets and smartphones."

It's clear that the approach being taken by suppliers like NetSupport to keep pace with changing needs goes a long way to dispelling the myth that Classroom Management software is simply a 'spying' tool. Who knows, we may even get to the point where students, previously frustrated by not being able to use the school's technology as an extension of their social lives, actually see the learning benefits to be achieved!



MORE INFO

To learn more about NetSupport School classroom management software and to download a free trial, visit www.netsupportschool.com.

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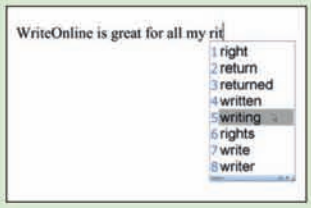

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Poor literacy skills can prevent students from achieving their potential across the curriculum. Whether it's writing up a science experiment or putting together a book review, you can bring writing tasks within the reach of all your learners by providing word banks and writing frames containing the specific vocabulary they need to use.

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Proof reading is often a weakness for students. WriteOnline's clear, British English speech encourages students to review their work and correct any errors independently.

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THE WRITE STUFF

Discover a simple but effective solution that could go a long way towards closing the attainment gap for your students...

Do you have students whose literacy skills are preventing them from effectively accessing the curriculum or demonstrating knowledge in their written work? Take a look at Crick Software's student-friendly word processor WriteOnline, which includes a range of customisable support tools to help struggling writers transfer their ideas to the page.

WriteOnline is a popular choice for Pupil Premium allocation. Many of the schools that have already purchased WriteOnline have done so using this funding and reported user benefits including increased confidence, greater learning enjoyment and improved literacy levels.

Phil Brennan, Special Needs Coordinator at The Burgate School and Sixth Form Centre, has been using WriteOnline to support his students for a number of years:

"In the summer of 2011," he explains, "we bought a whole school licence for WriteOnline using Pupil Premium funding. The Pupil Premium was relatively new at the time and we were looking for creative ways to use it to help remove barriers to learning for some of our most disadvantaged students. Low literacy is a major obstacle to success for some students and interactive, technological solutions can help them to achieve more both in school and at home.

"Our SEN Manager went to visit a nearby school to watch a demonstration of WriteOnline and came back very excited about its potential to support all our learners, and in particular those with literacy difficulties and special educational needs. The fact that mind-mapping, speech feedback, word prediction and vocabulary banks were all included in one product was particularly appealing.

"The flexibility for students to be able to use the program at home and at school is a really important aspect of WriteOnline for us. Homework is a real problem for some of our children, particularly those with dyslexia. We are able to help them during the school day but at home their parents may be working or experiencing literacy difficulties themselves, making it difficult to keep support consistent. WriteOnline gives these students the support they need wherever they are and we are seeing a significant improvement in the quantity and quality of homework they are handing in.

"We've got WriteOnline networked across the school, and it's being used in a lot of different ways. Proof reading is a major weakness for a number of our students, so being able to listen back to their work is really encouraging them to reflect on what they have written and correct any mistakes. I've also seen one of our English teachers use this speech element really effectively to work on punctuation skills by taking all the punctuation out of a piece of text, then asking the children to listen to it and decide where the punctuation should go so that it sounds correct.

"The mind mapping tool (WorkSpace) is a particular favourite of the students, it's so easy to create a useful and impressive looking mind map quickly. The way I like to use WorkSpace is to have a child standing at the whiteboard collecting the other students' thoughts on a particular topic and actually creating the mind map, then getting everyone to use it to support the writing task – it's a lovely way to pool, record and then build on everyone's ideas.

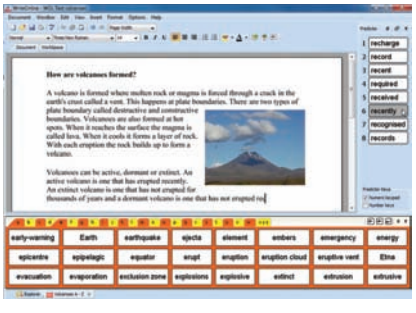
"Being able to provide relevant vocabulary banks is a great way to further support topic-specific writing – we've used a lot of the free 'Wordbars' that come with the product but it's very helpful to also be able to make your own. Some of our students have felt confident enough to go off and find a piece of text on a certain subject and transform it into their very own Wordbar!

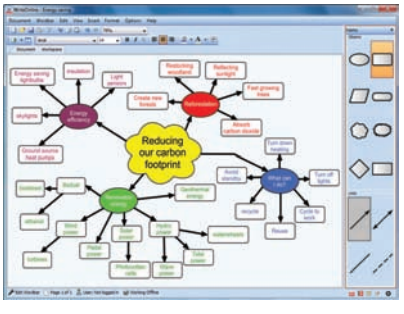
"If I were to try and sum up the impact that WriteOnline is having on our learners, I'd have to say that it's the way the program increases the confidence of those who use it, and their ability to access the curriculum and demonstrate understanding. We have a number of students who have got fantastic ideas, but struggle to get these down on paper in a way that accurately reflects their knowledge and intellect. WriteOnline really helps them to achieve this.

"As well as helping us to support those with low literacy levels or specific needs, WriteOnline can be used to help everyone develop those key skills of planning, structuring and reviewing work, which are so important as they move forward in their academic life."

MORE INFO

If you'd like to find out more about WriteOnline, Crick Software is offering free staff demonstrations to schools this term. Please contact the team on 01604 671691 or via info@cricksoft.com for further details. www.cricksoft.com/writeonline





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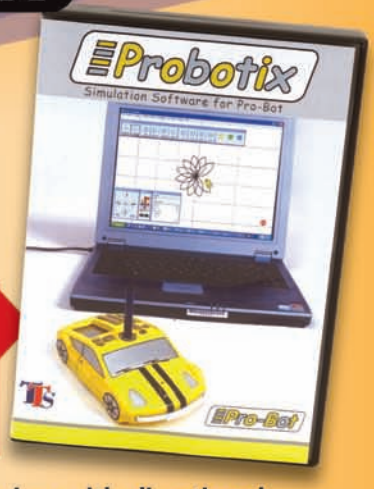

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Andy Bush, Technology Educationalist at TTS, takes a look at what secondary school teachers are saying they want from their resources suppliers right now...

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T&I: You pride yourself as a company on constantly talking to teachers in order to develop the resources they really need; what are the main things you are hearing from secondary schools at the moment?

AB: One thing is for certain, the new curriculum is on everyone's mind. Some subjects are facing wholesale changes whilst some have less sweeping changes to manage. Another challenge schools face is assessment without National Curriculum levels. Schools have plans already in place to manage these changes, and we are moving quickly, so we are supporting the new curriculum in our product ranges. Schools tell us they are looking for products which will fit their plans and also for products that 'just work'. They face enough challenges as it is, so having products that just work removes one hurdle.

The new computing curriculum is going to be challenging for secondary schools, especially until they start taking in Y7 students who have been learning coding from Y1 – how can TTS help?

Schools face various challenges in embedding the new computing curriculum. This includes not just understanding it and teaching it, but also moving over to it. If pupils have little or no experience of the computing curriculum when they start, say Year 8, schools will have to catch students up with some of the KS1, KS2 and early KS3 content. This switch isn't something that can happen overnight but schools are working out ways to move over. TTS has very successful products which have been used in primary schools for many years. Some of these products, such as Probot, will prove useful to Year 7 and 8. Our products are designed to just work – batteries in and away you go! We are also working on iterations of products and wholly new products which will serve the needs of schools and help them meet their challenges.

Do you think that secondary schools have anything to learn from the primary sector?

Schools can always learn from other schools be it same phase or cross phase. There are no magic solutions but good implementation of good ideas works well. Schools face the challenge of using Information Technology to develop pupils' digital literacy and their understanding of computer science. Primary schools find it much easier to work across the curriculum and link learning together through themes. Secondary schools may need to consider how ICT/computing departments can introduce new skills in IT and how other departments could provide a context to use those skills. If this can be joined up and jointly assessed it could help schools meet some of the challenges of available time.

How important is it, in your opinion, to take a creative approach to teaching across the whole curriculum?

In ICT, as with all subjects, schools have had to balance teaching new skills with applying those skills to real world contexts. Teaching computing is no different. Using newly taught skills to solve real world problems is a fantastic way to test those skills and see if they are fully understood. A creative approach will mean these contexts can come from all aspects of the curriculum.

Go on, give us a hint – what's the next big thing that will be added to TTS's range for secondary schools? What's getting you most excited at the moment?

With the new computing curriculum in mind we are very excited to introduce our new programming range. We have worked hard to provide a range of resources which are designed to make programming visually engaging and fun for the students whilst being user friendly. Amongst other developments we will provide everything a school needs for the Raspberry Pi model B and B+ ... and whilst we dont want to give too much away, we will be launching some Raspberry Pi controlled robots which will boast various sensors and can be controlled using Scratch or Python.

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SPHERO 2.0

Contact: **www.gosphero.com** Reviewed by: **John Dabell**

Super-brains Ian Bernstein and Adam Wilson have created something rather special. It's a ball. Nothing exceptional about that, you might think... but this is different. Meet Sphero, the world's first robotic ball that you can control with a tilt, touch or swing from your smartphone or tablet. I think I may just need to repeat how magical and awesome that really is. Imagine being able to control a device over Bluetooth, making remote controls out of phones. This isn't something from a sci-fi novel. It's real. I took it into the staffroom to have a play and everyone was wowed. Old-guard teacher of 30 years Mr Perry thought it was witchcraft – but I say it is pure genius.

So what is it? Sphero 2.0 is a high-octane, 74mm diameter opaque ball made from high-density super-durable white polycarbonate similar to Nalgene bottles. There are no ports or openings but tucked away within you will find a sort of mini Segway motored by two wheels at the inside of its chassis. There's a multi-axis gyro, an accelerometer and a bunch of motors that talk to your phone or tablet via apps. Bright, dual LEDS are tucked away inside the chassis. To turn it on you give the ball a good whack and its lights kick into action through a rainbow of hues. As the Sphero is weighted it won't roll around willy-nilly - the weight point changes depending on your last use.

The key to unlocking the potential of this robo ball comes via imaginative app integration. There are 30+ apps available. There is a main Sphero controller app, which has an inbuilt unlocking experience with which you have to persevere to access the full capabilities of the device. This app enables you to steer the ball around using your phone or tablet and makes it display lots of colours. As you keep driving your Sphero then you earn achievements to unlock new features and special lighting tricks. You can log in with Facebook and track your progression towards becoming the Master of Sphero and see how you measure up to your friends. You can even try programming the Sphero yourself, courtesy of a free Orbotix app called Sphero Macrolab.

Beyond the controller app there is a growing ecosystem of games. Multiplayer, multi-ball, augmented reality, and games that let you program Sphero's moves and

colours. Many of these are free too, which is even better. I tried a scrolling space shooter called Exile, which was as fun as it sounds.

Making the best, better

The 168g Sphero has actually been rolling around since 2011 but has only really hit the headlines on this side of the pond recently. Since then it has evolved and the Sphero guys have been busy making some serious hardware and software changes and upgrades which have taken it to a new level of excitement. Now we have Sphero 2.0 – cannier, intimidatingly faster, brighter and more reactive than before. It has a lower centre of gravity, too, which means that it rolls about with less noise and less effort and there are better sensors inside the ball.

What do you get in the box? You get the Sphero obviously and the inductive charging base, an AC adapter and a quick start guide. You also get two small ramps which you can use to get your ball to jump. It also comes with a nubby silicone case you can squeeze onto Sphero to give it more grip on slick surfaces like laminate floors.

You can get Sphero moving in moments and I sent it hurling into the legs of tables, people and pets. It has a very dependable Bluetooth connection and there is no obvious lag between commands and execution; the controls in freewheeling mode are easy to get to grips with. Sphero has an impressive 30m wireless range and it recharges itself from a dock rather than running on disposable batteries. What else? Well it's waterproof, shockproof and dirt proof. That just about makes it child-proof too.

There might be some grumbles that you only get one hour of usage from a three-hour charge and that's probably justified because you won't want to stop playing. No one likes a spoil sport. The balls controls can also go a bit get eccentric on occasions but you can live with that.

Serious fun

Yes, Sphero, is entertaining and yes it will get everyone rolling about with excitement but I see this as a serious educational tool in terms of its technology with massive potential. It provides a great way to introduce pupils to simple programming. One of my favourite apps for Sphero is MacroLab because you can arrange commands and settings to let Sphero drive by itself, follow unique patterns and more besides. You can create a macro to have the ball flash a certain colour sequence – basic programming. You can record and play back macros and then look at the code that those macros create and modify it. Coding is given a very high profile in the computing curriculum today and Sphero supports this. It would be perfect for a computing club.

Price-wise Sphero 2.0 comes in at £99, which may seem a lot of money for a single item – but I think it's worth it. You are paying for a high quality product at the cutting-edge of mobile development. Indeed, compare the price of Sphero to a pile of decent LEGO kit and you think that actually, it's not a bad price at all. There are also special educational discounts available on the Sphero website.

Make no mistake, this lively, seamless ball of fun is not a glorified remote controlled car or a cat toy. It's not only a huge amount of fun, it's also a world of challenge. It's easy to set up, it's tough, and if you haven't worked it out already, this ball is clever. I'd use Sphero via a tablet as you have more space to play with and so it's more precise. In short, Sphero is a unique gadget that has suddenly become one of my absolute must-haves.

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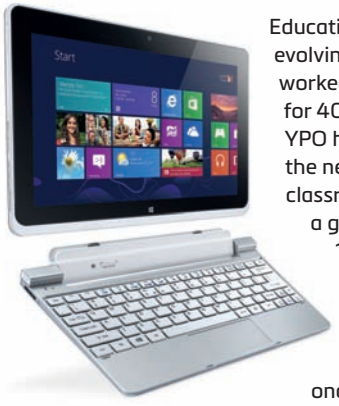
From ink wells to iPads: Evolving with schools for 40 years



Education is always evolving. Having worked with schools for 40 years now, YPO has seen the needs of the classroom change a great deal since 1974. Times have certainly changed since the early days; where once the company supplied carbon paper and ink wells, it now supplies Raspberry Pis and iPads. But one thing has remained constant – the vision that every school should achieve the best possible value for money when purchasing its goods and services.

As a publicly owned organisation, YPO has worked tirelessly to help its public sector customers make the best use of their ever squeezed budgets. From schools and charities to the NHS and emergency services, it helps all types of organisation, and has consistently returned its profits to the public purse. To date, in fact, YPO has given back £105 million for reinvestment in local public services. Its Share of Profits Loyalty Scheme, which has been running since 2011, has also given a proportion back annually to customers, with £2m expected to be distributed in September 2014.

With major changes afoot to education from September 2014, YPO has been reviewing its products and services, as always, to help equip schools with the products, services and training they need to deliver a radically revised curriculum. One of the key transformations will be to ICT and the introduction of 'computational thinking', ensuring that children have the necessary skills for the fast-paced digital world in which we find ourselves today. It will provide young people with a knowledge of the fundamental principles of computer science, as well as requiring children to learn two high level programming languages.

And so, whilst introducing a range of key resources to its popular catalogues, YPO has also extended its range of Continuing Professional Development (CPD) courses to help teaching professionals deliver the changes. Ensuring that staff continue to learn and enhance their own skills, the courses provide up-to-date knowledge of curriculum subjects and key themes which have emerged in the 21st century.

MORE INFO

For further information on the products, contracts and courses that YPO provides, please visit www.ypo.co.uk.

BRAINPOP

Contact: **www.brainpop.co.uk/games** Reviewed by: **John Dabell**

Challenging concepts are often best approached in the form of a creative activity, something immunologist and paediatrician Dr Avraham Kadar realised long ago when he set up the educational goldmine BrainPOP. If you haven't explored this fabulous website then I suggest you down tools and take a look. BrainPOP explains the world through games, animated films, interactive quizzes, exciting texts, and online activities. This is a powerhouse resource and standard-bearer for quality that has won numerous awards and offers something for everyone.

BrainPOP has its own games-based learning area called GameUp, which contains a collection of top online games from leading third-party, mostly American publishers. These cover a variety of subjects, coordinate with BrainPOP curricula, and have all been considered through a rigorous quality assurance process. Just looking at the evaluation rubric tells me that the games have been very carefully scrutinised and a lot of thought has gone into their selection; every area has been assessed.

In terms of content, GameUp is quite a vault with over 700 topics across the curriculum with 50+ top quality learning games. When you select a game you enter a different world. I sampled a half-dozen games across different subjects and they all measured up admirably so there is a clear consistency throughout. I learnt loads and was very impressed by the production values. The games teach, challenge and enable – although the subject balance is one-sided with science and maths dominating. There weren't many literacy, PSHE, DT or humanities games to select from, so there's definitely room for more titles there. With each game there are films to support further understanding and these are superbly presented by the cartoon-like characters Tim and Moby. Each also has a quiz and teachers' game guide.

The games on offer are all free to play; to unlock the accompanying films and resources you will have to subscribe, which for a large school is one pound shy of £700 for a year. GameUp has been hugely popular since its launch and as it grows further and adds more games across the curriculum things can only get better. The games on the GameUp site are absorbing, fun and motivating and are sure to spark creative and intellectual thinking, develop language skills, foster problem-solving and develop confidence and self-esteem.

HUE™

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They're incredibly simple to use for both teachers and pupils. We love them!

Allyson Crew
Deputy Headteacher

I've been using my Hue camera in my Science classroom over the last year. It is so simple to set up and use. Great to link to the Smartboard, away you go!

Ian Pratt, Science Teacher

It's really easy to install (you plug it in!) and the picture quality is excellent. The children really enjoy using them.

Richard Hawkins
ICT Curriculum Advisor

We use the Hue Animation cameras and software with children who have special needs. They quickly learn how to operate the camera to move either a background or item and check on the laptop screen how that will appear in the 'movie'.

Tina Wright, ICT teacher

A fantastic resource which we have used in our school for several years. It has been instrumental in raising standards in a range of curriculum areas. Highly recommended!

P Moran, Headteacher

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HUE HD

Contact: **www.huehd.com** Reviewed by: **John Dabell**

HUE™ HD CAMERA

You get the impression that the Hue HD camera is feeling rather good about itself. I wouldn't blame it for feeling smug, either. It gets out of its box and makes an impression without even having to try. It doesn't pose and pout; it just gets on with the job and has fun doing it.

Hang on though, this is just basically a camera on a stick, isn't it? Don't be daft – the Hue HD is a stand-alone head-turning visualiser that is miles better than a built-in webcam and knocks spots off those that clip onto a screen. This is a plug and play multi-tasker with a built-in microphone and twistable head. It's stylish, functional and funky and your classroom should have at least one.

Basically, you have a base which is the USB receiver and into this you plug the camera and its gooseneck arm. Once you've hooked up with your computer then you really are ready to go. If you want, you can unplug the neck from the base and connect it directly to a USB port on your laptop and you're away. There aren't many things in life that simple but this is effortless and pretty much foolproof. There is a manual if you need help but to be honest, even if you do, it won't be for long.

So why do you need one? Because there is a whole pile of stuff you can do with one of these gems and the built-in microphone opens up a lot of doors. What about demonstrating a science experiment or taking snapshots of pupils work? How about recording a technique to replay for a demo later in the day or for recapping after weeks have whizzed by? Go on, you want to use it for digital storytelling don't you? Done. You could use it on Skype, MSN and Yahoo Messenger for free video chats with a school on the other side of the world, subject experts, community members and even parents. Or for doing some tuition over t'internet. You might want to model something, project something or create a stop-motion animation movie. How about desktop conferencing and an online homework session? Go on, use it for recording on YouTube, why not? I'm using mine right now as a microscope to demonstrate a circuit board for a bit of revision. You will find a use for the HUE and if you don't it will cry. Remember it has full 360° rotation so it will still see you if you don't pay it attention.

What really matters with a camera is the image quality, so is it up to much? Reassuringly so, although I'd recommend using it in a well-lit area where the light source is behind you. I know, that's a very basic tip – but it makes all the difference. The image quality on my whiteboard was excellent. The clarity of the sound is also up to the job and incredibly clear. It's robust too and will take a few knocks (although give it some respect and don't try throwing it off a multi-storey car park).

Is it cheap? Yes, as chips. For £29.95 + VAT you are getting a deal that would have Dave Dickinson grinning like a Cheshire cat. No need to count your fingers here as it is fantastic value and I think it's pitched at a very affordable price for schools. It's certainly the cost-effective alternative to the all-singing and all-dancing visualisers that are in the hundreds of pounds.

The Hue HD is easy to move about and you manually focus it using a focus ring on front of the camera. You might be thinking that manual focus is so 1970s but the good thing about it is that as you move in and out of shot the camera is not constantly searching for the focus point and blurring everything in the process.

Do we need to tap this product on the shoulder about anything? Just a couple of minor points. The relatively heavy base is good but if you want to bend it forward, and I mean far forward, then it needs securing otherwise it will topple. But then that goes for us all. The flexible gooseneck is a really great feature of the HUE and it is quite long but a giraffe neck would be better for reaching those hard to get to leaves, so perhaps they can extend it a wee bit further. I'd like to see more top tips on how to use the camera, too. There are a handful on the box but that's all.

The Hue HD is a versatile product. Use it as a camera, a webcam, a low-cost visualiser or a CCTV if you really want. Mine is blue... but other colours are available. Enjoy.

VERDICT

+ Snap happy
This is a wonderful bit of equipment and I can see it being well-liked by its peers and admired (with a tinge of envy) by its competition. Who'd've thought a USB camera could be this much fun?

FUZE®

"The Raspberry Pi Foundation is pleased to support the FUZE in their development of rugged classroom units for teaching electronics and computer science. The units will help students learn, experiment and explore the vital discipline of computer science and in the process learn computational thinking."

Jack Lang, Chair, Raspberry Pi Founation – Jan 2013

The FUZE, powered by Raspberry Pi, is the ideal platform to teach computer programming and provides a safe environment to experiment with simple electronics. The FUZE is an engaging, motivational and best of all, fun package for the classroom, after school clubs, extra-curricular projects and at home.

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Q&A FUZE

Jon Silvera tells us more about FUZE, the programmable computer and electronics workstation...

VISIT: WWW.FUZE.CO.UK CALL: 01844 239 432 EMAIL: MARKETING@FUZE.CO.UK

T&I: Why was the FUZE first developed?
JS: The first ever FUZE was made from foamboard and contained a Maximite system board. The project was to build a retro styled computer that would provide near instant access to the BASIC programming language. Originally it was intended to help me teach my own children some basic programming skills but it very quickly evolved into a more serious business opportunity. It progressed into a metal case and the Raspberry Pi (RPi) was adopted as the ideal platform due to its fantastic versatility.

How has it progressed over time?
The newly released FUZE T2 has many significant hardware changes, including a four port powered (2amp) USB hub. This increases the total ports from 2 to 6 on the Raspberry Pi Model B and from 4 to 8 on the B+. It also adds a desperately needed power switch.

The FUZE IO board has also evolved making the electronic aspect of the RPi even more accessible and functional. Four Analogue IN ports (& one OUT) means the RPi is now fully equipped 'out-of-the-box' to connect to real-world applications and devices.

FUZE BASIC has also evolved and gained well over a hundred new commands and functions. These include many gaming features such as sprites, scrolling & sound.

Could the FUZE help secondary schools to deliver the new computing curriculum? And if so, how?
Without doubt. In fact the FUZE and FUZE BASIC is already in use in many schools. The FUZE enables secondary teachers to teach text based programming from a very early stage. FUZE BASIC is an incredibly easy language to learn (and teach!) and as it is an expanded, modernised version of BASIC, it bridges the gap perfectly between visual tools like Scratch and more complex languages like Python, C and Java.

The electronics element of the FUZE makes the whole experience fun as well as illustrating applications of programming in the real world.

Are there any interesting developments/events on the horizon?
Lots! Along side the new Robot Arm Project Kit and a planned Sensor Project Pack we have a few extremely exciting projects in development. There are variations of the FUZE unit itself including a few limited edition versions that will appeal to owner's of the original home computers. We might even do a bright orange one... what do you think?

We are also working on more FUZE Project Cards and lesson plans which will be made available on the FUZE website. Lastly FUZE BASIC will continue to evolve – a lot...

Q&A JUNO

Irene Rutherford, Sales Director - Education, PC Werth Ltd, has some seriously sound advice for teachers who want to be heard...

VISIT: WWW.SOUNDFORSCHOOLS.CO.UK CALL: 0208 772 2700 EMAIL: IRENE@PCWERTH.CO.UK

zT&I: Why should schools be thinking about investing in a sound field system?
IR: Soundfield is a wonderfully simple concept: easy to install and operate, economical in daily use and effective from the `moment it is switched on. True soundfield uses specialist speakers and speaker positioning that delivers speech signals equally to all pupils in the classroom, no matter where they sit or what direction they are facing. Frontrow soundfield is the only system with Adapto digital intelligence and Optivoice – clarity of speech at all times – which helps all children hear clearly what they are being taught.

What does JUNO offer that other sound field systems do not?
Juno is the world's most advanced classroom communication tool, combining the convenience of installation-free audio products with sound quality of installed systems – and far exceeding the capabilities of ordinary sound device, with sophisticated voice control, an intuitive lesson capture feature that captures all voice, PC video and whiteboard interaction throughout the lesson for archiving and/or later distribution, and which will also help to reduce incidence of teacher voice-strain

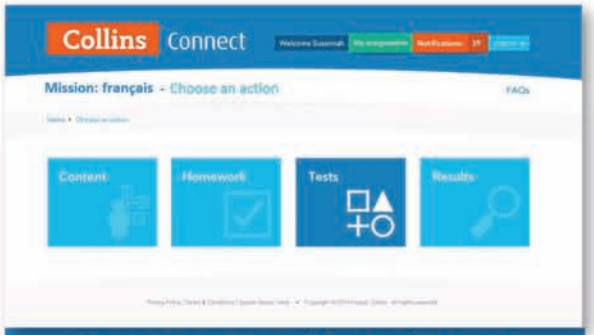
How easy is the system for teachers to use?
Juno is a digital amplification system that is installation-free. One-button design lets you wake it up, mute, and give voice commands to adjust volume and record. The ultra-thin lithium-ion battery makes for a lighter, smaller, faster-charging device. Priori-Teach gives priority to the teacher's microphone by reducing the volume of other devices. With Juno, just one voice command is all it takes to record teachers' speech together with all visuals and media displayed on their active whiteboards.

What can schools expect by way of ongoing support, if they invest in JUNO?
Juno comes with a five-year warranty. PC Werth prides itself on offering on-going support, with lifetime telephone support and regular visits from the regional managers, who are always at the end of a phone for support and advice.

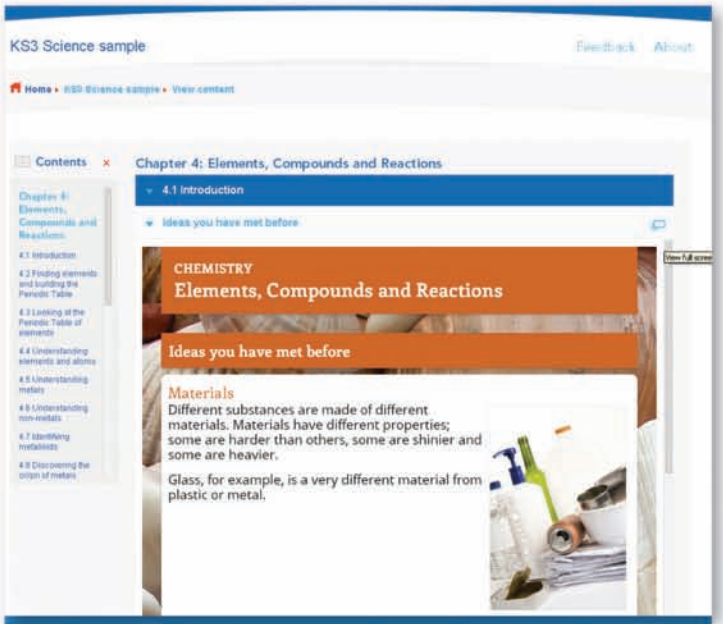
Collins Connect

Collins Connect is an online learning platform, designed to support teachers to manage homework setting and assessments while providing a wealth of content and interactive activities – ideal as a front-of-class learning tool and to support independent learning outside lessons.

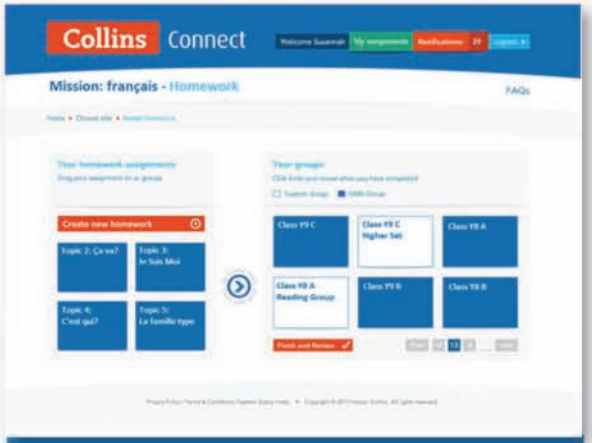
- ☐ **Quick and easy to get up and running in your school**
- ☐ **Use MIS SYNC to import all your student data and track assessments and homework in one place**
- ☐ **Launching in Summer 2014**



Clear navigation enables students and teachers to quickly access key features



Display digital content easily on all devices from a whiteboard to smart phones.



It is easy to assign tests and homeworks and students are notified automatically when new tasks are generated

HOW DO I FIND OUT MORE?

- View free samples at **http://connect.collins.co.uk/secondary-teaching-resources**
- Email **education.marketing@harpercollins.co.uk** to be kept up-to-date with the latest news
- Contact **education.support@harpercollins.co.uk** to request a free 1 month trial

COLLINS CONNECT

Contact: **www.collins.co.uk/connect** Reviewed by: **John Dabell**

Collins Connect

At an inset session once I heard someone say that a teacher can make over 3,000 nontrivial decisions every day. Is that all? I thought. The guru continued by saying that learning platforms can help reduce this complexity through providing one-stop shops for teachers to access lessons, digital content and set assignments all with a single login. My noggin agreed. Yes, they keep you organised – but there are many benefits to VLPs beyond that.

There are plenty of online learning platforms out there and a new one well worth considering comes in the shape of Collins Connect. This has been designed to support teachers and pupils by providing miles of content and piles of interactive goodies that work well for front line teaching to the whole class or to support independent learning and homework. Collins has gone to great lengths to get its platform ready for market by consulting with schools and testing it extensively so that it is easy to use, easy to set up and delivers what we want. So, does it live up to the claims?

Well, what I immediately like is the simplicity of setting it up and of its course selection dashboard. Once you log in, you are presented with a clean and crisp home page with options to choose a course that your school has subscribed to, 'My Homework' and 'Notifications'. When you have clicked onto the subject you want then you are faced with three areas on the action dashboard: content, homework and results. Click into the contents tab and you will have access to all the course content and quickly be able navigate to any topic. Click again and this will reveal the sub-topics.

The content I viewed within KS3 science is impressive and contains a whole menu of ideas and things to do such as quick starters, introductions, video clips, topic information and creative homework tasks. The layout and design is uncomplicated and mirrors that of the whole site itself. It is well-dressed, breathes authority and looks as reliable as a Grenadier guard.

If you want to set homework on a

particular area then click 'set homework on this topic', make your choices and click finish and assign. Enter a name for your homework and any instructions you want pupils to follow – they'll even get alerted as deadlines approach so there are no excuses. You can also give feedback to one another on assignments and see detailed results by class, assignment or pupil. Yes, it's that easy.

If you have SIMS in your school then it makes perfect sense to integrate it with Collins Connect using the software provided as this will import pupil and teacher data and offer you the full functionality of the site. You can easily see your groups as these will have been imported from SIMS. Click on a tile, see all the names and easily subdivide them if needs be by simple click and drag. As SIMS data is synchronised each day then any changes are captured immediately. Think how easy it will be for reporting and setting tests. If you don't use SIMS then Collins Connect can still be used as a standalone version.

If you have set any homework or tests the My Homework screen shows you what pupils have submitted and what it is you have to mark. These are ordered oldest deadline first. Click on a tile to launch the test screen and you are off. You have your own set of Notifications, too, which remind you when you have set homework or a test, when a deadline is about to expire, when a deadline has expired and results are available, or when a deadline has expired and answers are ready to be marked.

A good learning platform has benefits for

all who participate in the learning and teaching process. It enables those with management responsibilities to have access to up-to-date learner data thus improving on efficiency and effectiveness; Collins Connect does this. It enables teachers to access learning resources, deliver the relevant content, set work and monitor pupil progress; Collins Connect does that. It enables pupils to access the curriculum and support, and submit homework, assignments and tests electronically in a way that is secure and tracked; guess what? Collins does this too.

Financial issues clearly have to be prioritised when considering investing in a learning platform, and schools need to consider the total cost of ownership, the intended use, organisational savings and what the potential is for helping the school improve. Prices vary by subject with Collins Connect, but the KS3 maths and science are £250 per year and this includes content, homework and assessment. I'd say that's cracking value.

For many, the technical issues will be the next major concern but this is an intuitive and simple platform to use. Very little training is going to be needed and the technical advice and help is there if you need it. As things stand schools cannot collaborate and share best practice using Collins Connect, but I am assured that the company is looking at establishing a community where teachers will be able to do just that. The decision on adding new content is made on a case by case basis – and something else that's in the pipeline is the possibility of schools adding their own.

VERDICT

+ Get connected

If you know you want to invest in a learning platform, then this intuitive and easy to use option has to be a serious contender; Collins is running a 30-day free trial, so you can be sure that the materials are right for your classroom.

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Q&A MATHLETICS

3P Learning's Richard Stoneman brings us up to date with everyone's favourite maths resource

VISIT: WWW.MATHLETICS.EDUCATION EMAIL: RICHARD.STONEMAN@3PLEARNING.COM

T&I: So, what's new with Mathletics?
RS: Our new Reports feature offers teachers in-depth reporting enabling them to view progress for individuals, classes or the whole school on one screen. We're also developing video support for student activities, which will be ideal for teaching using the flipped classroom model and for helping parents to engage in their children's maths learning. Free Mathletics apps mean more access and Live Mathletics now has more levels which develop fluency in content areas including cubes, ratios, unit conversions and decimal operations. We have also added a whole raft of new curriculum activities and interactives.

Has the new curriculum meant a massive rethink of what Mathletics offers?
We have redesigned courses, aligned content to curriculum expectations, created new assessments with curriculum reports and are in the process of further developing the Reports feature to enable teachers to view strengths, weaknesses and improvement in terms of curriculum outcomes. The new curriculum has also prompted us to review our content with a focus on developing more reasoning and problem-solving activities.

How effective is Mathletics as an assessment tool?
Mathletics offers flexibility in assessment. In terms of formative assessment, student results are populated in the Reports area which shows strengths, weaknesses and improvement. Teachers can assign work and ensure progression. For summative assessment, Mathletics Assessments, interlinked with course content, gives teachers a snapshot of student progress in relation to curriculum expectations. Teachers can assign activities directly from the results page. To give teachers more autonomy in the way they assess, we are developing a tool that will enable teachers to create their own assessments, either using a bank of ready-made questions or by writing their own, so watch this space!

Why is it, do you think, that Mathletics is so perennially popular?
Our drive to create a community of confident and inquisitive learners is reflected in a resource that is supportive, rewarding, motivational and engaging. Teachers and students are always telling us that "Mathletics makes doing maths fun!" And for parents, Mathletics offers access to children's learning that they wouldn't otherwise have.

Q&A INTOSCIENCE

If you love Mathletics, you'll be blown away by 3P Learning's online science resource, says Dave Canavan...

VISIT: WWW.INTOSCIENCE.EDUCATION EMAIL: DAVE.CANAVAN@3PLEARNING.COM

T&I How intuitive is IntoScience for non-tech-savvy teachers to use?
DC Surprisingly so. Despite looking very technical and having many different worlds and environments to explore, as a teacher all you need to do is go into Activities, with its list of familiar science Topics, select an Activity (a curriculum based interactive lesson), open up a Lesson Guide explaining exactly how the lesson could run, click the Summon Class button from the teacher controls, which locks the students into the Activity and that's it. Couldn't be simpler!

What can it bring to the teaching of science that students can't experience in a standard school laboratory?
IntoScience brings the theory of science to life in a way in which no book or other resource can. From playing basketball on the Moon to discovering differences between weight and mass, crashing a car to learn about friction or exploring virtual Asian woodland to learn about the taxonomy hierarchy, IntoScience offers experiences for learning which are out of this world, yet remain true to the principles of science. It is not designed to replace experiments but brings the enthusiasm and passion which pupils have doing experiments, to the learning of the theory behind those experiments and the scientific concepts involved.

Are there any options for schools with little to no budget?
There are always options. At the end of the day, 3P Learning (the company behind IntoScience but more famous for Mathletics) has lots of ex-teachers on staff (like myself) who understand the budget constraints in schools and we do what we can to help those schools, because ultimately, we all want the students to have the best learning experience they can. Our company motto is 'Love Learning' and that applies to everything we do, with the big goal being to have students all over the world developing a love of learning as a result of using our resources.

Can students access IntoScience on their own devices, at home?
They certainly can. If a student is working on school computers through the day, when they get home and want to continue working on their home computer or iPad, they sign in and everything they have done at school will be saved due to their data being stored in the cloud. The other major benefit of home access is that it is a much more engaging homework tool than conventional homework and is a perfect resource for flipped learning.

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FOR YOUR.... SCHOOL

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5 apps every teacher will love

Tablets for Schools is an educational charity that has commissioned the largest independent research programme in the world looking at how 1:1 tablets impact learning and attainment in UK secondary schools. Teachers and students in the research recommended these 5 apps; check out www.tabletsforschools.org.uk for an invaluable blueprint to adopt tablet technology in your school.

1. Socrative. Price: Free at the App Store and Google Play

One of the most popular multi-functional apps available, Socrative saves time on administering learning activities. Easy to use and great for engaging students with exercises and games, capturing "real-time" results to review understanding.

2. Nearpod. Price: Free in the App Store and Google Play

The NearPod platform allows teachers to share all kinds of content with students. It's an all-in-one presentation, collaboration, and real-time assessment tool.

3. Evernote. Price: Free on iTunes and Google Play

Evernote helps students remember school-related tasks across all of their devices. Take notes (written, audio, or video), save ideas, create to-do lists, and digitiSe documents and post-it notes. Best of all? Everything is searchable, and can be shared via Facebook and Twitter.

4. Explain Everything. Price: £1.99 on iTunes and Google Play

Explain Everything allows teachers to supplement written content with 'screencasts' – tutorials that add audio and interactive visual components.

5. Popplet. Price: £2.99 at iTunes

students can capture ideas quickly in a 'Popplet' when taking notes. Great app for students new to mind-mapping, or for learning and presenting basic topics. Popplets can be easily shared for convenient collaboration.

69%

of teachers and 40% of young people think that more should be taught about cyber-bullying and online safety through the national curriculum

(source: http://nobullying.com)

CLASSROOM SNAPSHOT

iTunes U has been utilised at Clevedon School, in Bristol, for the A level computing course, wehre pupils' learning was enriched by MIT's course 'Introduction to Algorithms'. After the teacher had delivered the course, pupils were given the opportunity to see what further learning in this area would be like at a university level, which also helped to raise their aspirations. They were excited by the prospects that furthering their studies in this particular area could bring. Inspired by using the iTunes U app, some of the pupils downloaded the entire course and have furthered their learning by completing various aspects of the online course.

Extracted from Perfect ICT Every Lesson, Mark Anderson (Independent Thinking Press, £9.99)

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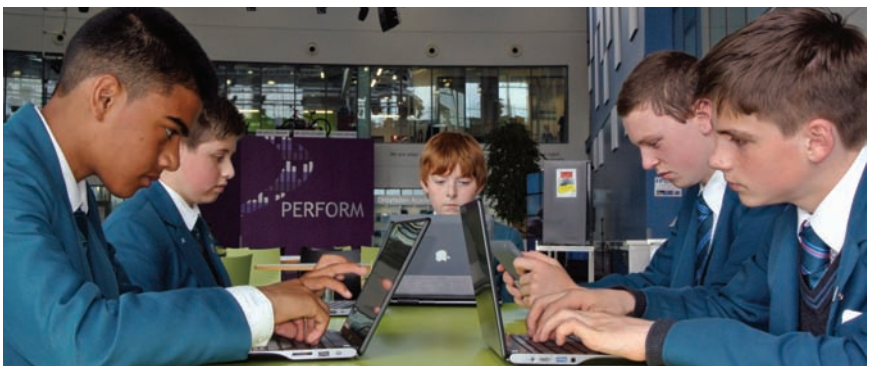
MEET THE NINJAS

Discover how e-learning is going from strength to strength at Droylsden Academy – thanks to a team of students with black belts in technology...



Droylsden Academy, a co-educational academy in Greater Manchester has adopted a novel and already successful approach to promoting e-learning with the launch of its own Droylsden Ninjas.

The co-educational academy, which was created in 2009 following the merger of Droylsden School Mathematics and Computing College for Girls and Littlemoss High School for Boys, has created its own e-Ninjas, a small gang of technology enthusiasts who are helping teachers and fellow students to get a better understanding of the technology available to them and how it can help them with their studies.

The group of seven students from years 7 to 10 have taken on the challenge of becoming the academy's own e-Ninjas and they are students on a mission – a mission to make e-learning part of everyday life across the whole school.

Spreading the word

The improving academy, which places huge value in harnessing technology in education, was looking at ways of better embedding technology across the entire academy and ensuring that its library of technology resources was being well utilised. After a visit to the highly acclaimed Cramlington Learning Village in Northumberland, the e-learning and senior leadership team recognised that its tech savvy students may just hold the key.

Having subscribed to a number of pieces of educational software such as the award winning GCSEPod, Socrative and Nearpod, the school was keen to ensure that students and teachers alike were familiar with them and that they recognised just how beneficial they could be if used effectively.

The Ninjas, who meet on a weekly basis, give up their own free time after class to look at how they can help students and teachers to better engage with technology, whilst at the same time develop their own IT skills... and they have proved to be certified black belts in their art.

Having attended staff training sessions to get a better understanding of the challenges that some members of staff face in adopting technology and gaps in their knowledge, they are now creating presentations – of course using the latest presentation software – which they are then taking back to the teachers to ensure they understand how the technology can help their students.

And the team are pretty evangelical, happy to give up their time to work with individual students and teachers to guide them through using the software step by step.

Everyone's a winner

Reece Fletcher, 14, is one of the Ninjas and he has become a GCSEPod expert, producing a very comprehensive presentation on the content software that he has shared both with his fellow Ninjas and members of the teaching staff.

The senior leadership team recognises the value of GCSEPod content – usage across the academy is high and feedback from students is hugely positive. Vice Principal Michelle Johnson is passionate about the product and its impact on the mobile generation, and was keen to encourage more students and teachers to incorporate the bite sized podcasts into their learning. She and her e-learning team therefore tasked Reece with producing a presentation that could be rolled out across the academy to encourage greater engagement.

"Eventually I would like to work in the technology industry so jumped at the chance of getting involved in this programme," says Reece. "I'm pretty confident in using software programmes but recognise that other people struggle so I was happy to help them. GSEPod is really easy to use so I wanted to create a presentation that would give people who hadn't tried it the confidence to give it a go.

"Also as part of the Ninja Programme I've had the opportunity to improve my own IT skills and have been getting to grips with google apps for education. I've even been on a cLearning course (a google cloud learning thing) with some of my teachers – we were all learning together, which was pretty unusual. I probably know a lot more than some of the teachers, but they seem happy to learn from us!"

Nathan McConnell, 12, is the youngest of the Ninjas and he is enjoying being involved in the programme, creating a presentation on Socrative and how this programme for creating quizzes can help to empower the teacher in the classroom.

Nathan said: "I love using computers and I'm really enjoying being a Ninja – helping others while at the same time developing my own skills."

And alongside their success in converting others to engage with technology, the Ninjas themselves have certainly benefited from the programme. They are working towards becoming google certified individuals and developing their own computer skills but moreover, many are growing in confidence as individuals, learning to present to both their peers and their teachers, which is never an easy task – but a great skill to develop.

MORE INFO

www.droylsdenacademy.com
www.gcsepod.com/home

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ONLY CONNECT

Inspired – and meticulously researched – technology is helping staff and students at Phoenix Academy revolutionise the traditional model of secondary education...

Back in 2007, Neil Stonehouse – head teacher at what was then the Phoenix School in the Dawley area of Telford, Shropshire – was browsing the internet when he spotted a clip that was going viral, especially amongst educators. Intrigued, he clicked and watched a simple but powerful presentation called 'Shift Happens', originally created by Karl Fisch, a high school teacher in Colorado, to address some of his concerns about the American education system at the time. The presentation (which has since been updated numerous times and watched by well over 20 million people) uses a series of stark statistics to illustrate a clear disconnect between the rapidly evolving technological world in which we are living, and the way our schools are preparing young people to engage with it.

"It really changed my thinking," Stonehouse recalls. "I'd been trying to picture what the future of learning might be, and how we could help our students develop into successful individuals who could compete not just locally or regionally, but in a global system. My view on ICT then was that yes, it was growing fast – but you could see that the pace of growth was going to be exponential. I knew that if we didn't embark on a really structured approach to how technology could maximise learning, we wouldn't be doing the best for our students."

Shift Happens didn't exactly inspire a Damascene conversion within the mind of Phoenix School's head teacher, then; but it did help to confirm for him that the educational vision he'd already been developing for some time was indeed the right one for the young people in his care –

"Never underestimate the power of the students – what they know, and can do, given the opportunity to do it."

Neil Stonehouse, head teacher

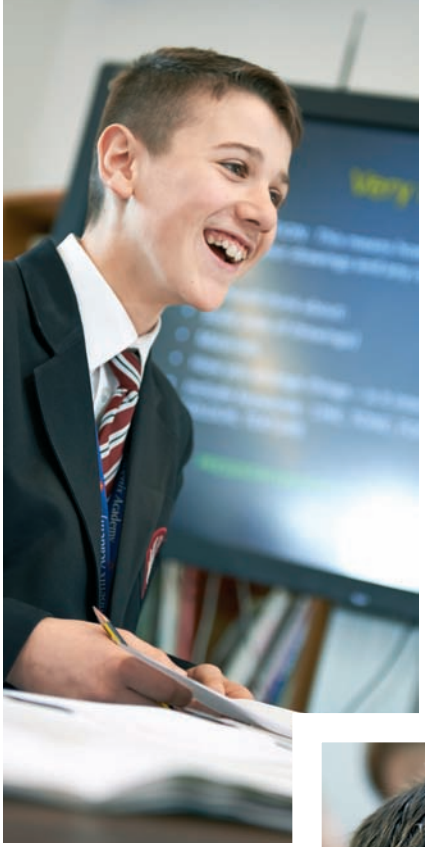
including a good number from families with no established tradition of valuing learning, or sense of what doors it could open for them. An ambitious plan for development started to take shape. And when the government announced its Building Schools for the Future programme, Stonehouse knew that this was an opportunity to turn that plan into a reality, with a new, internet enabled building that would support the kind of teaching and learning he was determined to facilitate.

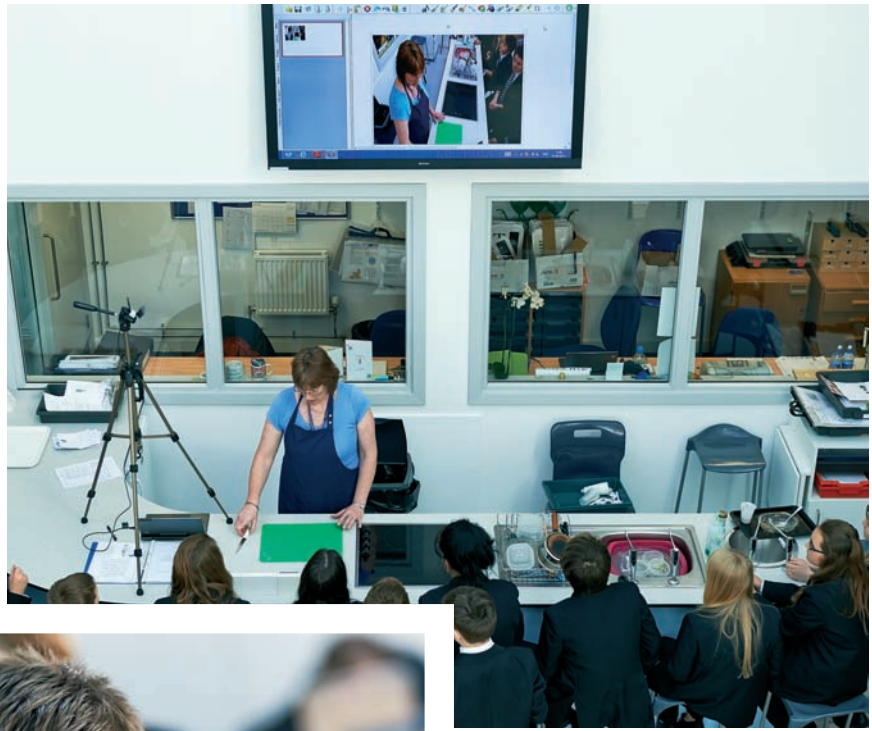
"We put together a clear vision and a business case, including the ICT," he explains. "We worked with loads of stakeholders – the community, businesses, post-16 educational establishments, universities. I was looking at ways to break down barriers to learning in an community facing a real mix of challenges; I wanted us to be able to develop our students into confident, well-rounded people with the ability to communicate well with with other people

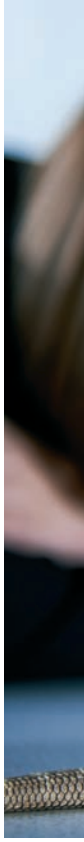
in all sorts of media. To help them achieve academically, yes, but also to be good citizens, have great friendships, and strong family relationships. To understand the potential of technology, whilst being aware of possible pitfalls and problems."

"We" in this case refers to the entire SLT at Phoenix, and particularly Adrian Holmes, head of ICT – but also to Telford and Wrekin council, which worked very closely with the school as its development plan evolved, and CDEC, the integrator that eventually came up with the right solution for Phoenix's needs, at a cost to suit the school's budget.

"Our project was accepted right at the end of the Labour BSF spend," observes Holmes, "but we were subject to some pretty significant funding reductions, so we had to be more economical, and make our budget work harder. The main concept that underpinned the design was the head's idea of having 'learning colleges' rather than separate departments for every subject. Science, art and D&T need their own spaces, because of the kind of equipment required and the nature of the activities, but apart from that, we have Years 7 and 8 in one learning college; Y9 in a second; and Years 10 and 11 in a third. The idea is that







instead of the students moving all around the building between every lesson, they stay put, and the teachers come to them. It saves masses of learning time, and cuts down enormously on the behavioural problems associated with lesson changovers – but it also presented us with a really distinct IT issue. Traditionally, you'd have a desktop PC in a classroom, with an interactive projector – it might take ten minutes for the teacher to log on, but they only have to do it once, at the start of the day, so that's fine.

"What we wanted, though, was for teachers to be able to walk into any classroom, at any time, and be able to connect instantly with the system through their personal devices. And when we started planning, there simply wasn't anything on the market capable of delivering that. Apple TV came close, but although it's a great solution in the home environment, it wouldn't scale up."

In fact, Holmes and Tim Rocke, the schools ICT commissioner for Telford and Wrekin Council, spent a large part of two years meeting every week without fail and experimenting to find a combination of technologies that would do what the vision for Phoenix required.

"We turned a room in the old building into a..." Rocke pauses, reluctant to slip into jargon, then grins, and bites the bullet, "an *innovation space*. It was a testing area, really, where we could bring technology for the staff to try out, and discover what worked and what wouldn't. We spent a whole heap of time on the teacher devices, for example – they had to be small and light, as they'd be carried around a lot, but also productive, so they could be as easily used for entering data and writing reports, as for interacting with on-screen content in the classrooms."

"It was really late in the day," continues Holmes, "when we found this software called WePresent. We started talking to our integrator CDEC and they were able to get it built into their interactive, Sahara CleverTab touch screens. It was our Eureka moment. When the new Academy opened, in September 2013, we must have been the only school in the country using this

"There are authorities everywhere saying, 'education is not our business any more'. But Telford and Wrekin Council decided very on that it wasn't going to set schools adrift. We work as a partnership."

Tim Rocke, schools ICT commissioner for Telford and Wrekin Council

SOMETHING FOR EVERYONE

Development and growth at Phoenix Academy is not just about the staff and students. The building is open from 7am to 10pm, and – thanks to Sport England and lottery funding – offers iconic facilities including a superb sports hall, a national BMX track, 3G rugby league pitch, dance and drama spaces, and a recording studio.
"We wanted to help the whole community embrace learning, and not see it as something that is only for the years of compulsory schooling," states Stonehouse. "The learning resource centre is open access – it's not unusual some evenings to have whole families in; the older children doing a sporting activity, the younger ones sharing a book with mum or dad, or sat at a computer doing their homework for primary school. That's the sort of involvement we want. And it will develop with time. It's important that we get the community engaging with using ICT much more – I was pleased the other day to see people using the cricket nets in the sports hall, recording their bowling and batting, and playing it back instantly to assess their technique. That sort of technology could be used across all kinds of community activities – BMX, rugby, theatre and other group performances. The potential is enormous."

technology to connect. We have blanket wireless throughout the site, with the capacity for 30 devices to stream video at any point in any lesson (incidentally, it was the wireless solution that proved to be the weak link for us to start with; we went for a cheaper option that didn't perform when it came to it, so after a couple of months of teething troubles, we ripped it out, put a new system in, and things have run smoothly ever since; we definitely learnt a lesson there).

"Teachers have their device – Toshiba laptops that can also work as tablets – and they walk in and are instantly connected to our network, with WePresent. It takes seconds. The experience is exactly the same for staff members in every classroom; there's one system to learn, and that's it."

One year on, and it's clear that Phoenix Academy teachers are thriving in their new environment. "In terms of the way that staff are able to use the technology to enable independent, personalised, more engaged learning, the outcomes are now starting to be seen," confirms Stonehouse. "It will take time for everyone to get used to it and see the full potential – but already, there are those who are flying with it."

And as for the students – well, it all makes perfect sense to them. Alongside the 450 new laptops and tablets that are available to be booked out for lessons, or taken home, Phoenix learners are encouraged to bring their own devices into school and use them appropriately (esafety training is plentiful and ongoing). And increasingly, they do.

"We designed the building with lots of social spaces," says Stonehouse, "where students can sit and chat, and share their learning. Within the first couple of weeks of term, they were bringing a whole range of devices in and making use of these areas – they know that if they're texting or playing games, there will be consequences; but actually, mostly we find that they're just using talking about things they've experienced in lessons, looking them up and sharing them on social media. It's been fantastic. It's still a journey, with a long way to go, but there's a real naturalness in the way that young people learn independently and collaboratively these days."

Shift is definitely happening in all schools throughout the UK and beyond; the difference at establishments like Phoenix Academy is that everyone is involved in making sure they are moving in the right direction.

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Q&A
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Toni Barnett, MD of educational AV specialists CDEC, considers the advantages of the latest AV technology in schools...

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T&I: Are 'interactivity' and 'collaboration' really the future of learning in UK schools?

TB: Absolutely. Interaction and collaboration are both key to young people's learning journeys and this is reflected in, and aided by AV technology. We first saw interactivity and collaboration coming into the classroom through AV with the BECTA rollout in the form of interactive whiteboards. We are now seeing a strong shift towards touch technology, as young people are so used to using iPads and touch technologies at home from an early age. Touch technologies open up a new range of capabilities in the classroom and enable a heightened level of interactivity across the whole classroom, as opposed to at the front / teaching point.

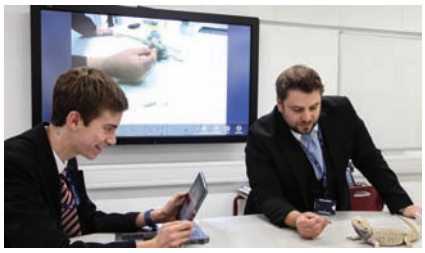
What difference can technology make to teaching and learning... and how can schools be sure they're investing in a long term vision, rather than a fad or a gimmick?

Technologies can make a huge difference and can revolutionise and rejuvenate young people's interest in a subject matter. However, technology alone cannot do the work itself, it is vital that the teachers using the equipment are 'on board' with the benefits and are shown how to use it to its full potential. With the right enthusiasm from a teacher, even the most basic of technologies can be used in ground-breaking ways to improve the quality of delivery. We don't install gimmicks or fads – all of our technology is sustainable and multi-purpose. I think sometimes teachers can go cold to a technology. But in our experience, regular maintenance to ensure the ongoing performance of the equipment and refresher training works well to ensure technology is used long term.

MD Toni Barnett

What are the main questions schools should be asking when considering updating or installing an AV solution?

I'd say schools should always ask



themselves what their aims and outcomes are first, then work with a company like ourselves to find a technology to suit, within budget. We see a lot of cases where a school has previously been sold an all-singing all-dancing piece of technology that is very good – but just isn't needed, or doesn't do what the school actually wanted it to do and is therefore gathering dust, which is a real shame.

We always ensure that schools ask themselves what they want to achieve with an AV solution, how many purposes they want it to have and if they have any other requirements or desires. We then match products to suit, or even create a bespoke solution. We don't ever go in with a product off the shelf and mould a school's needs to fit that product – we always work the other way round; needs and aims first.

How sustainable are the products and services in your portfolio? Is there a 'green' advantage?

As we are seeing such a shift to touch technology, many schools have been realising the added benefits in terms of overall lifecycle cost and environmental impacts. The vast majority of the touch screen / flat screen products that we have been installing of late all benefit from being more environmentally friendly than standard projectors and interactive whiteboards. With standard projectors for example, lamp replacement and maintenance is expensive and labour intensive – not to mention the

negative environmental impacts of the creation and disposal of the mercury bulbs. To have the same average lifespan as a touch screen, most projectors will need more than 30 replacement lamps!

In terms of energy usage, a Sahara CleverTouch 55" touch screen, for example, has a power consumption of 180 watts, costing around £80 per year. A standard projector, PC and interactive board combination would use 1010 watts and cost around £436 per year. And this is of course per unit, so if you have a projector combination in each classroom, replacing those with low energy touch screens can make a huge difference to your school's overall energy consumption and bills.

You've been attracting a lot of media attention – and picking up some awards recently; what is it, do you think, about CDEC that genuinely sets you apart from the crowd?

Yes, we have, thank you for noticing! We've recently won Best Educational Project and Star Education Product at a national ceremony and we were extremely pleased to be recognised in this way as leaders in the Educational AV field.

I think what sets us apart is that we really pride ourselves on the level of service that we offer and we are incredibly passionate about the education sector. So many of our team members have an educational background, many have taught in schools for a number of years so they truly see the benefits and have a first-hand understanding of classroom life.

Along with our expertise we ensure that our customer experience is 100% every time. We don't deliver and disappear like other firms, we offer a one-stop shop service; we plan, guide, source, install, train and maintain.

FUTURE Perfect

Sal McKeown gets out her crystal ball to see how technology might change the educational experience for students with SEN over the next five years...

There is a certain irony in being asked to predict technological developments for the future because I am the woman who once wrote in the TES that the internet would never catch on. In my defence, in the early days you had to remember or copy internet addresses and I pointed out that people with dyslexia would never manage this with any accuracy. Then came Google and other search engines to revolutionise the process. There are two lessons to be learnt from this: one, I am quite clueless and two, the people behind the technology are extraordinarily clever.

It seems to me there are certain drivers that will shape developments over the next five to ten years. Schools want to keep pupils safe, save money and boost exam success. So I predict we will see a move to e-books/ ibooks; school libraries will get smaller and digital libraries will get bigger. This is great news for those with problems tracking text on a page, or who can't cope with black text on white background or get tired eyes. They can change colours, the size of print or have it read aloud. School will no longer need class sets. It will even help those disorganised youngsters who lose books on the bus.

Exams are already changing, particularly access arrangements. According to the Department for Education, 17% of school children have some form of special educational needs such as dyslexia and may have visual difficulties reading on-screen or tracking where they are on the page or screen. TextHelp has pioneered developments in this area with their text to speech program Read&Write Gold. Pupils listen through headphones and may have the text read aloud over and over again until they can understand it. Schools save money as they don't need to pay for readers and separate invigilators.

Needs must

What I am hoping to see in the next five years is an acceptance of an app like Siri in exams. This is brilliant voice recognition which turns a phone or tablet into a composition tool and will help reluctant writers get a really good first draft in matter of minutes. The quality of answers would soar if candidates spent longer thinking about relevance, structure and tone and less about filling sheets of A4.

More than a million children have had their fingerprints taken at school. These may be used in canteens, libraries and at registration time. Civil liberties groups have protested calling it an intrusion but I suspect we are rearing a generation which doesn't mind having its every move tracked. These young people have grown up with CCTV cameras and willingly switch on location services on their phones. I think we may see the use of apps to deal with truancy, keep tabs on children in secure units or PRUs, vulnerable children and children with criminal tendencies. If they are attached to their mobile, they are trackable.

But the big drive will undoubtedly come from the consumer end of the market. Apps are big business and already there are signs that it is taking power out to the people. Take autism. Just in the last few weeks I have reviewed an app created by a mum to help her 5-year-old autistic son learn his spellings and attended the Apps for Good Awards where Bradley Stoke Community School's app, Autism Help 4 U, reached the finals. This was a glossary of slang and colloquial language to help those who take everything literally. It is simple, portable and will help children to fit in better. It will also be good for those learning English as an additional language. Like the best apps it came about in direct response to a need and that is where apps score. They are simple, targeted and low cost, which means they can go for low volume sales as they do not have to repay large commercial investment.

Ian Bean is an independent special needs ICT consultant and trainer. 'What is interesting is that we are beginning to see a

ABOUT THE AUTHOR

Sal McKeown is a freelance special needs journalist and author of Brilliant Ideas for Using ICT in the Inclusive Classroom (Routledge) and a book for parents, How to help your Dyslexic and Dyspraxic Child (Crimson Publishing).

movement by some of the leading schools away from the culture of 'app collecting' and beginning to really question what they are using the devices for,' he observes, 'We're seeing a move towards a more considered use of iPads especially for those with physical difficulties and those with ASD.' It seems that open framework tools are becoming more popular, especially where they allow teachers to add their own content and make apps relevant and personalised.

Thoughts to action

Paul Hawes is managing director at Sensory Software International, a company that creates and adapts technology to help people with disabilities do things that everyone else takes for granted. His two 'over the horizon' predictions are better software for language generation and developments in brain computing. Predictive text is getting better all the time and hopefully soon it will be good enough to help users with poor literacy skills produce correct, intelligible output. That will really put the cat among the pigeon for all those politicians who equate literacy with spelling, grammar and punctuation.

Brain computing may take up where eye gaze has left off. From rather erratic beginnings we now have eye gaze systems which let people move and drag cursor around the screen and select or 'click' on images by looking at them a little longer. This means people who do not have use of their hands can still navigate round a computer and play games. Take that to the next level and you have a system which can convert thoughts to actions. It may sound far fetched but we are already familiar with one form of brain computing in our schools. It is called the cochlear implant.

Apparently NASA has a prototype which reads electric signals from the nerves in the mouth and throat area and successfully performed a web search by mentally 'typing' the term 'NASA' into Google. Researchers at Japan's Keio University have developed a system which passes signals through to the computer which are then translated into commands within the Second Life.

'Brain computer interfaces are now where eye gaze was a few years ago,' says Paul Hawes. 'They are almost working. It is likely to extend the possibilities of access for people with exceptionally complex disabilities.' A few years down the line it could also be a winner for children with degenerative conditions such as MS, muscular dystrophy and chronic fatigue syndrome.

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Apps for Good
appsforgood.org
Read&Write Gold
texthelp.com
Ian Bean
ianbean.co.uk
Sensory software
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NEARLY THERE

What is definitely on the horizon is Google Glass. Basically this is a smartphone you wear on your face — integrated into a pair of glasses. It has a small screen projecting in front of one lens and a speaker that transmits sound. Educators are excited by the possibilities of real time support. You could use the augmented reality features for trips out, for example; see the landmark, have your own guided tour and have all the key facts displayed before your very eyes.

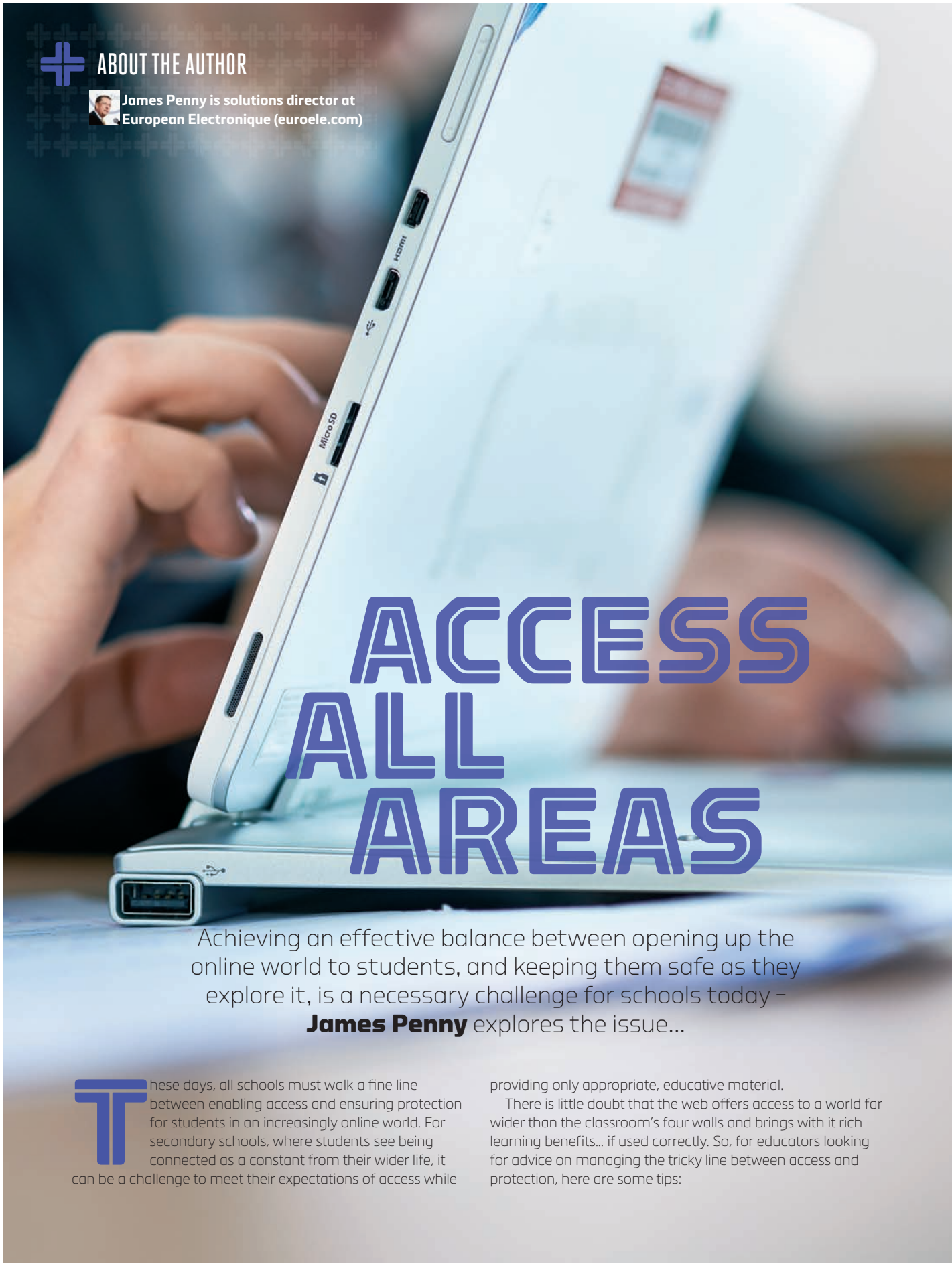
It has many possibilities for people with special needs or disabilities, too:

+ It offers discreet subtitling for deaf people and for those who cannot get meaning from speech but cope better with the printed word.

+ It will also read out handwritten notes, printed text and signs for people with limited reading skills

+ It can be a personal assistant for those with acquired brain injury who have impaired memory or slow processing skills

+ It can help people with poor wayfinding skills to travel more independently.



ABOUT THE AUTHOR

James Penny is solutions director at European Electronique (euroele.com)

ACCESS ALL AREAS

Achieving an effective balance between opening up the online world to students, and keeping them safe as they explore it, is a necessary challenge for schools today – **James Penny** explores the issue...

These days, all schools must walk a fine line between enabling access and ensuring protection for students in an increasingly online world. For secondary schools, where students see being connected as a constant from their wider life, it can be a challenge to meet their expectations of access while providing only appropriate, educative material.

There is little doubt that the web offers access to a world far wider than the classroom's four walls and brings with it rich learning benefits... if used correctly. So, for educators looking for advice on managing the tricky line between access and protection, here are some tips:

1 Make students aware of their digital footprints

Social media can be very positive for sharing and expressing opinion. More and more education organisations are looking at how they can use it to engage students and improve learning. However, information that students might post on social media sites is permanent. In a recent survey it was found that employers used social media sites to supplement information about a candidate. 43 per cent of those surveyed said they had seen something that might put them off making a job offer, so it is important to help students understand the benefits and potential downside. Why not hold an exercise where you ask students to identify, in private, three things that they wouldn't want a future employer to see? Asking them to consider their digital profile from a different viewpoint could make them think twice about what they post.

2 Educate students on the benefits and the dangers of social media

According to the Nominet Trust 'Cloudlearn Report' (2011), schools should not assume that if social media is banned, students won't use it. Simply stopping access to social media can send students 'underground' where they may be more at risk. Educating them on social media etiquette and how to spot any dangers can help them to appreciate – and encourage - proper use. There are a number of organisations that offer advice and workshops to help students understand the risks and benefits. Why not have regular events to help bring the issues into the open for discussion?

3 Establish what will be accessible information on personal devices

Managing the content that young people can access on school devices has been relatively straightforward. However, the growth of Bring Your Own Device (BYOD) schemes means that students using personal devices to access a school network don't necessarily have the same access protocols in place. Systems are available that can identify the person logging onto the network and apply tailored rules, such as only teachers being able to access YouTube. You might also want to consider creating policies for specific individuals who repeatedly try to access restricted sites and therefore might block access for all students, enforcing that such behaviour is not tolerated. Mobile Device Management (MDM) solutions are available, so if you are looking at a BYOD scheme these systems are important.

4 Raise awareness of cyber-bullying

One of the most significant issues to consider is cyber bullying, and the rise of social media has increased this risk further. This may see students receive email, chat or text messages that make them feel embarrassed, upset, depressed or scared. Raising awareness on how students can identify cyber-bullying, deal with it appropriately and speak to about it can help to stamp out a problem before it starts. Look at it in the same way as you look at other forms of bullying, ensure that it is discussed and there are ways for students to report any instances.

5 Prepare digital resources and websites

Use of the web should be planned just like any other lesson, advises the CloudLearn Report. According to a survey by Netcraft, there are more than 644 million active websites. When asking students to carry out research, there is therefore a seemingly unlimited wealth of information available, some of which might not be correct or appropriate. Most educators now draw up a list of sites for a particular task where students can find the information they need in the same way as they would for traditional resources. Helping students recognise good quality digital resources is very important.

6 Draw up and implement an Acceptable Use policy

Start by getting the students to agree to a policy of ethical access for use of content; debate and discuss with students what it should contain to draw up a policy that they feel ownership over and get them to agree to its terms of use; this should encourage them to abide by it. Also, ensure that students understand the penalties if they break this charter, or that if things go wrong, that they know who to speak to. The Nominet Trust advises that this should be tied into other school policies, to reaffirm that activity that could be defined as inappropriate has not changed just in the act of moving online.

7 Make the most of free tool-kits

Creating resources is time consuming and requires research, so make the most free downloads to educate and demonstrate best practice. Try Childnet's 'Know it all secondary kits', Safer Internet for its Safer Internet Day secondary resources schools pack, or the NSPCC's 'internet safety in schools' resources for professionals as starting points. The CEOP's 'Thinkuknow' programme also offers a range of free resources on keeping children safe online.

By following these steps, schools can provide their students with the information and skills that they need to use technology responsibly, with a process in place should any issues occur. Striking the balance is key; the balance between delivering a safe online environment for young people, and not restricting them from enjoying the benefits such an environment can offer.

> "The internet is like the world. It can be horrible, it can be amazing but you choose which way or path you take."

Year 8 boy, quoted as part of Tablets for Schools' Safer Internet Day research, 2014 (tabletsforschools.org.uk)

Share ALIKE

You can't stop young people from engaging with social media – but why would you want to, asks Jennifer Begg...

As a teacher you know only too well the challenges of keeping students switched on. Sometimes it's better to go to them than to try and drag them into your world. This is why it's handy to have a bit of social media in your teaching toolkit / arsenal (let's face it, sometimes it can feel like a bit of both...).

There are a number of platforms you can use (safely) as a teaching channel – from Facebook to Twitter, Pinterest, Instagram or even Vine. It all depends on what you want to achieve, and your understanding of the boundaries involved for student safety.

Facebook

Let's start with Facebook. This is my favourite when it comes to project work and just straightforward student communications. By using a Facebook Group you can share with the whole class and have lively discussions online between sessions. Here is my top advice for using Groups:

1. **LAY THE GROUND RULES.** With my students (age 16 - 18) I had a rule that if they posted anything inappropriate I would simply delete it and they would lose 10% of their marks for that term. No negotiation and no arguments or reprimands, just reduced grades with no opportunity to make it up. They were also told there would be no clarification on what was inappropriate as they were now old enough to decide that for themselves.

Of course, you will have to find rules that work specifically with the group you're teaching but part of getting to grips with online safety is letting students learn for themselves what they should and shouldn't share. This is a great way to get them thinking about this in a safe environment as your group will be either Closed or Secret depending on the settings you choose.

2. **MAKE IT A CLOSED GROUP.** You can choose between Secret or Closed if you don't want to have a public group. I would go for Secret because that means no one can even search for your group on Facebook, they need you to share the link and invite them.

3. **GROUPS DON'T MAKE US 'FRIENDS'.** You do not have to "friend" anyone to be in a group together. Again, this is why Facebook Groups for me are a great start to using social media for teaching as you don't have to blur that line between your private and school lives. This is important for you and the students.

It also means you can see group members' profile pictures and start to talk to them about what's appropriate. You don't need to be friends to do this and as a bonus, it serves to remind them what is available to anyone searching on Facebook for them publicly.

4. NO MORE "BUT I DIDN'T SEE THAT MESSAGE". When you post in a group you get a list of who has viewed your update. This, as you can imagine, is incredibly handy when you share documents or assignments. As students can see these updates on their mobile devices they always have access to the information you share that they need to complete their work.

5. SHARE VIDEOS, WORD DOCUMENTS, PRESENTATIONS AND SPREADSHEETS EASILY. Facebook Groups work like mini intranets but without the bells and whistles and with the added bonus that your students are already on there. All. The. Time. Use this to your advantage when you want to share any file that is too large to email or might end up being caught up in a spam filter.

If you want to really showcase your students' successes and processes then maybe a more public Facebook forum is in order. Something like a Facebook Page can work as a great shop window for student progress. In the same way that Skittles use their Facebook page to showcase their top fans, you could use a free tool like Canva.com to create images congratulating your students on work well done. Or better yet, let the students upload their own pictures and updates to share what they are proud of. There are no end to apps and online tools that they have access to on their mobile devices to create great things to share.

Tools I would recommend for creating:

+ **Canva.com –** Great templates for you to use, which are already sized for different social media platforms. You can choose from thousands of images and icons for free.
+ **PicMonkey –** touch up your images and add text and graphics to better tell your story.
+ **Instagram** (these can be posted to Facebook so that they can share the images and videos they've created).
+ **Notegraphy** (phone app) – Use this app to illustrate a quote or tip. We connect with images often much better than words so this can be a very powerful learning tool.
+ **Rhonna** (phone app) – Like Notegraphy, you can use this app to illustrate words in a creative way. This app also gives you the added bonus of access to hundreds of icons and images to use with the text.
+ **Capture** (free app from YouTube for creating and editing video on your mobile) – Video on the go with a smart phone is a no brainer when it comes to learning. Using this app makes it very easy to create, edit and upload to Youtube.

This might be something you want to use straight away or wait until the class have shown they understand what should be shared publicly while using a secret Facebook Group.

Twitter

There is a reason twitter is beloved of journalists and writers. It makes you far more succinct. Trying to get your point across in 140 characters without resorting to text speak or bad grammar is both challenging and incredibly satisfying.

You can do this publicly using the students' own twitter feeds or you could set up a private twitter feed and give all the students a login with the proviso that they sign off each tweet with their initials. This is used by some primary schools already as a way of facilitating live spelling tests with the twitter feed running on the classroom interactive whiteboard.

Another, more adventurous way you could use twitter in the classroom is to encourage groups to use the channel as a way to reach public figures. Why not set up a research project where students have to contact academics, politicians, musicians, actors, writers, whoever seems appropriate, and conduct some market research? It would also be a fantastic way of carrying out some career development advice. Go directly to a prominent figure they want to emulate and ask how they got to where they are.

Pinterest

Pinterest is a brilliant way of creating a multimedia mood board for any group project. They have also recently introduced mappable boards so that you can pin images to specific locations. This would be a great addition to a geography or science project or anything where you are tracing the evolution of a specific idea or development in human invention.

The other useful thing about Pinterest is that you have the choice to either upload your own images or just pin images already available online, say from National Geographic or any news source.

EXAMPLE
http://www.pinterest.com/universitiesuk/uniweek-2014-events/

Vine

This mobile application lets you create 6-second animations which run in a loop. It's fascinating to see how different individuals and organisations have already started to use these. Most surprisingly, DIY company Lowes – who use it to create 6-second 'how to' clips for gardening and home improvements

EXAMPLE
https://vine.co/Lowes

Your students are more than likely already familiar with creating stop motion animation. Without having to go into the detail they're used to, they can now create the same thing on a smaller scale outside of their usual art projects. You could use it to visualise maths problems, science experiments or dramatic sketches.

Instagram

With Instagram you have the choice of creating images or 15-second video clips. This is a great progression from creating Vine animations to support your subject or simply for taking a snapshot of the process. Like twitter, by searching users' profiles and hashtags, students can also reach out to see what others are sharing and learn from them.

With all of these platforms, by using them with students privately and then as a more public tool, you are teaching them to understand privacy better. Just like students need to learn how to communicate and network in person, over the telephone and of course by email; they now also need to fully understand the best ways to communicate using social media. Not only will using social media for teaching help you to reach more learners, it will support their social skills in all mediums by making them think more carefully about the information they share.

Above all, this will give them and you the opportunity to learn about the sheer joy of experiencing the potential and opportunity afforded to us by these tools. Never before have we had such access to information and individuals without having to worry about geographical borders or social hierarchy; it's an exciting prospect.

ABOUT THE AUTHOR

Jennifer D Begg is a social media trainer and coach www.livefreerange.com

epraise.co.uk

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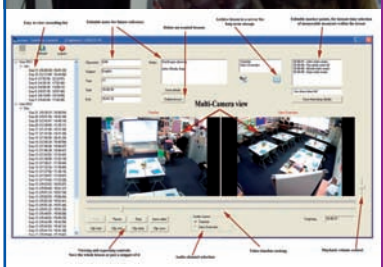

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1 REWARDING

epraise is an online rewards system designed to motivate students and teachers, leading the way in online rewarding. Feedback from teachers who are already using epraise is certainly positive: "The best idea for years", "A terrific system" and "Transformational" are just a few examples the company has been hearing recently.

epraise is always adding new features and innovations to its site; seating plans, behaviour monitoring and student group analysis are some recent examples.

The focus of epraise is quite simply to give schools the tools and support they need to make rewarding their students and creating a positive environment as easy as possible.

To find out more, visit www.epraise.co.uk, or email info@epraise.co.uk

2 LOOK, LISTEN AND LEARN

Exciting new audio and visual teaching aid eyeTeach – a 2014 Technology & Innovation Awards Runner-up and 2013 Havering Business Awards winner – allows teachers to see themselves in the classroom environment to review both their own performance and their students'. Additional applications include class presentations, one-to-one student reviews, as a website resource and in-house training purposes.

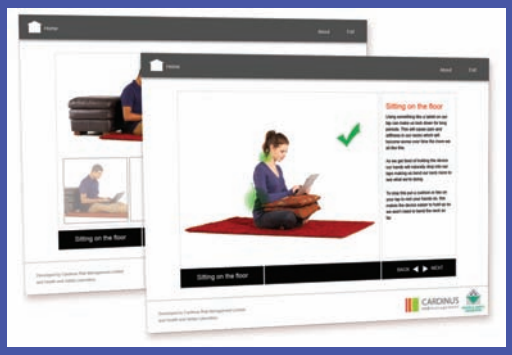
Using sophisticated Megapixel cameras and high-definition audio recording, video can be played back while eyeTeach is still recording, eg to speed up class explanations or show a student where they can improve – replaying an oral exam, for instance.

Important built-in safeguards ensure teachers retain full control over the recordings.

www.eyeteach.net, tel 0843 3824 999, info@eyeteach.net

IN THE SPOTLIGHT

Take a look at these outstanding examples of technology and innovation developed for your school...



3 HEALTH MATTERS

Over two-thirds of school children have suffered back or neck pain in the past year. X-rays of 15 year olds show posture-related arthritic changes. Young people are starting work with technology-related musculoskeletal injuries.

Children spend more hours a day using technology than adults. However, adults using technology at work are supported by specific regulations to keep them safe.

In response to the increasing use of technology and the corresponding increase in musculoskeletal injuries in children, Cardinus has developed the heavily endorsed and award winning Health Working MOVE, which includes free e-learning for students and resources for teachers.

Web: www.ergonomics4kids.com
Email: info@cardinus.com Tel: 020 7469 0200

4 MIND YOUR LANGUAGES

Vocab Express is an online vocabulary learning application for schools designed to motivate students into independent vocabulary learning for foreign languages, sciences, geography and business studies. Pre-loaded with vocabulary from the major exam boards and leading publishers, this constantly updated, motivational resource for KS3 to KS5 learners reinforces and advances learning completed in lessons, offering a tool that extends learning at the student's own pace. Students are motivated to achieve through a fun process of learning, revising and testing, with an innovative points and scoreboard system that allows them to compete against their peers and see their progress at a glance.

As part of its offering, Vocab Express' assignment module allows teachers to set specific vocabulary exercises as homework and track student progress and attainment levels in real-time using various metrics. A break-down of key information includes how long the assignment took, how many questions were answered correctly, and how many wrongly, helping teachers identify where students are struggling and excelling, so that teaching material can be adjusted where and when appropriate. This can be easily set up with no preparation or marking overhead, minimising teacher workload.

www.vocabexpress.com

Are they sitting COMFORTABLY?

Lorna Taylor explains why technology can be a real pain in the neck for young people – and what schools can do about it...

Recent research shows that 72% of primary aged children and 64% of secondary aged pupils have experienced back and/neck pain in the past year. Back pain is becoming more common in children – but it should never be considered normal, and all episodes lasting more than two weeks should be reported to a GP.

The findings underline a growing concern among the medical community about the effects computers, games consoles, smart-phones and iPad-style tablets are increasingly having on young people's developing bodies.

As a society we have become increasingly sedentary. ICT now plays a huge part in our children's lives both at school and at home. However, very little consideration is given to the postures children frequently adopt – sitting over handheld mobile devices, working at laptops whilst sitting on the floor, sitting on one-size-fits-all furniture (despite 11-year-olds now often varying over half a metre in height), and spending more time sitting in the car going to structured activities and to/from school because of safety fears. For younger children, there is less opportunity to simply play and develop the strong core muscles they need to maintain a healthy spine.

"Back pain is a rising problem, causing great concern. It is often under-reported and multifactorial in cause, " says Helena Webb, a paediatric physiotherapist from NHS ABMUHB, Swansea. "While talking with patients during treatment sessions, I gain an insight into the situations pupils feel contribute to their pain – sitting on the floor, in assemblies, uncomfortable school furniture, working at computers and carrying heavy bags in the absence of lockers."

The spine is a vulnerable structure as it needs to provide strength to keep us upright, but also flexibility to help us move. This helps explain why it is prone to damage. As the leading cause of sickness absence from work, back pain costs the UK economy £37m every day (BackCare.org.uk). Studies show that children who suffer back pain are four times more likely to experience it as an adult. It's vital we instil healthy habits so children can be comfortable, concentrate, reach their full potential and play and learn, and not be limited by discomfort, pain and preventable disability. We need to make sure that children's backs are fit for their future.

How schools can help

Schools play a vital role in instilling in good habits and learning through observation. It's important staff are on board with the concept of back health and how to support it.

1. Flexed, curved postures should be limited for children and staff where possible, and regular changes of position and movement should be encouraged. Have in mind a '30:30 stretch and wriggle' – every 30mins, move and stretch for 30 seconds.

72%

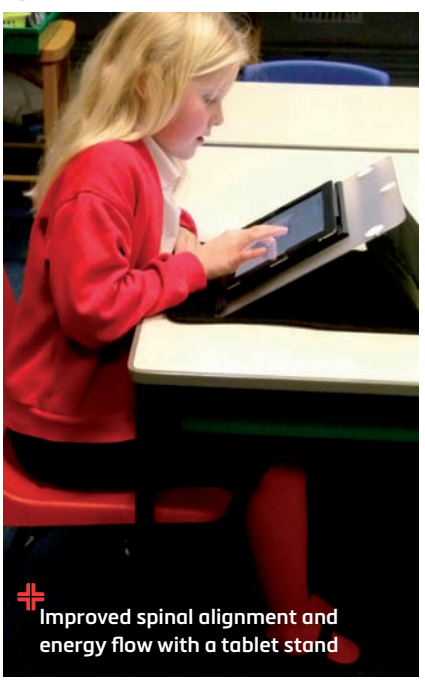
of primary school children have suffered back or nexk pain in the past year

2. Physical activity and healthy movement are fundamental to the back health – helping to build up muscle strength, maintain flexibility of muscles, tendons and ligaments, and improve circulation which helps nourish the spine and removes toxin build up from poor postures. Physical activity will already be an integral part of your day in school – keep up the good work and keep promoting its benefits at home too!

Fig. 1

Damaging, curved posture, reduced circulation as pressure behind knees

Fig. 2



Improved spinal alignment and energy flow with a tablet stand

Fig. 3

dlb MAX II

The dlb Max II chairs offer superior ergonomic lower back support, good ventilation and have a waterfall front seat design to improve pupils' circulation, sitting posture and comfort. These chairs can help contribute to a healthier, learning environment.

3. When purchasing tablet equipment, budget for a protective case with stand or raise the tablet up so it is at an angle for viewing (see edu-ergo.com for further advice and ideas). If used on a flat desk, a damaging, curved posture will be encouraged. (See images, left)

4. Laptops maybe more portable but best practice suggests children and adults should use computers with the top of the screen level with their eyes. If using a laptop on a flat desk or table, raise the screen (on books or a stand) and use a separate keyboard and mouse. If is not possible for children and adults to safely use a computer screen set at the same height for a sustained period, take time before starting to make the correct adjustments to protect both children and staff. This applies at home too.

5. Participate in and share the new free Health Working MOVE eLearning course. Developed by Cardinus Risk Management in conjunction with the Health & Safety Laboratory, Healthy Working Move explains to young people how using electronic devices, carrying school bags and adopting different postures when working and relaxing can affect their bodies. It teaches them how to use technology in a healthy, comfortable and safe way. There is a version for primary, secondary and post-18 aged young people and free advice sheets for teachers and parents. It takes about 20mins to complete and can be accessed via ergonomics4kids.com

64%

of secondary school children have suffered back or neck pain in the past year

6. Encourage children to have a sight check if there are concerns with pupils flexing over and looking very closely at a screen.

7. Learning to touch type reduces repetitive neck movements when looking between the keyboard and the screen, and benefits computer users.

8. Correctly supporting 'ergonomic' school furniture should be seen as a good investment in both pupils' health and attainment. A new study has found that by improving sitting posture, pupil concentration, behavior and attainment have also improved. For further information and ideas see dlb.co.uk.

9. As our shock-absorbing spinal discs are over 80% water, adequate hydration is essential for optimum back health. Schools can help by providing accessible water stations for pupils.

10. Children and young people should not carry more than 15% of their body weight as studies have suggested that this causes spinal damage. Young, growing spines are especially susceptible to injury from twisting forces which occur when pupils re-adjust their bags whilst wearing them. Additional damaging forces can occur through awkward postures when pupils pick up and put down their bags. A healthy aim is for pupils to carry 10% of their body weight. Encourage them to re-pack their school bag each night so they only carry what they need.

Children as young as

15

have shown posture related early arthritic changes on x-rays

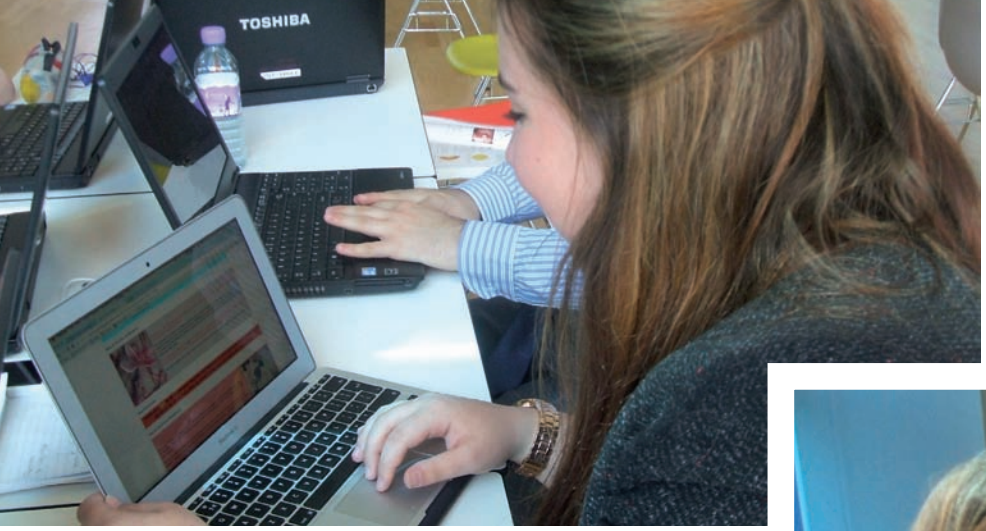
If lockers can be provided, that's a great solution. Just to note, if schools have budget or space restrictions, lockers will benefit Year 7 pupils the most. These young people can vary over half a meter in height, can be starting puberty (which causes ligaments and tendons to become more elastic and therefore be more prone to injury) and are often lighter in terms of body weight (therefore are able to carry less weight as a percentage of their body weight before damage occurs).
Advice covering healthy school bag design and correct adjustment for pupils can be downloaded at ergonomics4kids.com.

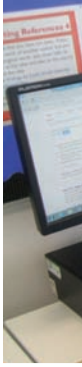
11. Could healthy and safe use of ICT be included in your school's good practice / policy guidelines to help ensure improved practices continue?

"Back pain is a rising problem. causing great concern"

ABOUT THE AUTHOR

Lorna Taylor is a paediatric physiotherapist with over 12 years' experience. Known as a passionate and active campaigner for improved back health and ergonomics within the education sector she is the founder of Jolly Back. If you have any question or queries, please get in touch via jollyback.com





GLOBAL, AMBITION

Alex Hendry explains how online learning is opening up a whole new world for students at St Benedict's Catholic School in Warwickshire...

St. Benedict's sixth form opened in September 2011 and we incorporated online learning with the International Baccalaureate Diploma Programme (IBDP) from the start. We were very keen on the opportunities that it would give us. It enabled us to increase the range of subjects we could offer to the students, particularly psychology, economics, and business and management because we had no teachers who were specialists in these fields. We also believed the online learning experience would help to prepare our students well for the learning and communication approach of university and the workplace.

Three years on, our opinion hasn't changed and the increased popularity of the online subject courses suggests that our students are recognising the possibilities and the benefits that the online learning experience is giving them. Last year, one third of our Year 12 students selected to take a subject course online, and of our Year 13 students, over half of those who studied online went on to pursue their online subjects at degree level.

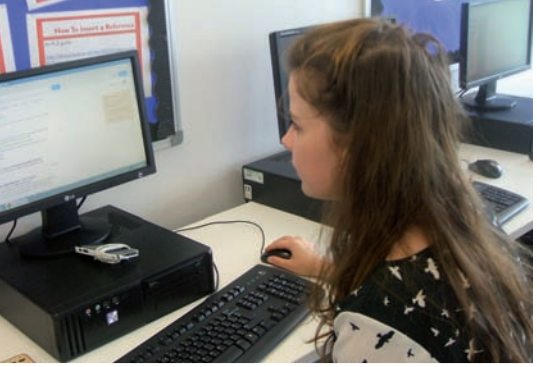
Reaping the benefits

The online learning experience is giving our students an interesting and different learning dimension away from the traditional face-to-face classroom. It's an innovative, exciting and relevant learning approach for many of them. It uses technology and communication tools they can relate to, and that they'll need to be skilled at using – and proficient at selecting – in university and the workplace. It's helping them to develop independence in their learning and confidence in their self-management.

Without a doubt, the online learning experience is benefiting our students when they move on to higher education. One of our past students, Claire (currently studying business and management at Birmingham University) has said that, not only was the content of her course relevant for her degree, but the way she learnt and was assessed throughout her online subject course has made the independent learning approach of university so much easier for her. She's the reason so many of our current students selected an online subject course; the experience oozed out of her! She felt it had had an impact on every part of her life.

Word is getting out about our online learning options; parents talking to other parents, online students talking to their brothers, sisters and friends. Families are

St Benedict's International Baccalaureate Diploma Programme online courses are delivered by Pamoja Education. Students learn in small groups alongside online classmates based in other schools around the world. Their teachers are qualified, experienced IBDP teachers trained in online pedagogy who guide students throughout the course via a range of e-dialogue. This includes live online lessons allowing students synchronous time with their teacher and classmates, weekly assignments including online group discussions and blog entries, and learning activities that students work on either alone, with their classmates or with their teachers. Last year 1,400 students from over 300 schools participated in IB Diploma Programme online courses. Find out more at pamojaeducation.com.



now seeking out St Benedict's because of the IB Diploma Programme and the online learning experience.

During interviews with parents and students, we very thoroughly go through the benefits but also the challenges of online learning. It requires an ability to learn independently in a self-managed way. For some, this comes quite naturally, for others it's more challenging, but the experience of online learning helps students to develop these skills if they have the right mind-set, support from their online teacher, and the encouragement of our Site Based Coordinator. Certainly, online learning is not for students who think they're getting an easy option away from the teacher; online students need to be very motivated to get the work done.

Walk around our school and it feels relaxed and easy going; but this is because the students know the learning expectations, and we reinforce these week after week. Our online learners have a structured yet flexible weekly learning schedule, which they can complete where and when they choose. We make absolutely sure they have time, support and the resources available to them. There are computers always accessible; both desktops and laptops, and Julie (our Site Based Coordinator for the online learning courses) and I frequently walk around the school to check the online students are on task and progressing with their learning. Any issues, such as technical access problems, are dealt with immediately. We aim to deal with such situations at that moment in time and so, usually within five or ten minutes, a student is back on task.

Could it be you?

For schools considering introducing an online subject learning option, I would say do your research; check your technology and any restrictions that are put on the school at a county level so that you can make sure all online resources are accessible to the students. Make sure you have plenty of communication with the online students at every stage of the course but particularly at the beginning. They will need lots of support early on; encouragement as they learn to communicate, not only in a virtual but global classroom, appreciation of the new digital learning challenges they're facing, and reassurance as they develop the skills of being responsible, independent learners. The students also need to know that you're there to respond if they have a technical problem. You've got to be there for them.

The timetable needs to allocate periods for online subject learning. Yes, students do have flexibility to do their learning when and where it suits them, but there does need to be a time and a place within the school day for online learning. Don't ignore your online students and leave them to it; their learning is still very much a part of school life. It really helps the students if they know you're interested and supportive of their online learning and that you provide the resources they need.

I love the online learning experience! I'm sold on it 1,000%. I'd like to see more state schools in the UK take it on in the future. I think, if schools – particularly new schools that have the benefit of taking a really fresh look at their approaches to learning – don't incorporate online learning into their curriculum, then they're really putting their head in the sand.

I'M AN ONLINE STUDENT

ONLINE STUDENTS FROM ST BENEDICT'S SHARE THEIR OWN FEEDBACK:

"With online learning you can learn at your pace; you take the time you need, at a time and in a place that's best for you." Haydn Wiles is studying economics online

"Having people all over the world to work with, talk to, and get different opinions from, is one of the best things about the online learning. I have people in my class from China, South America, India." Hannah Hendry studied IBDP psychology online

"Online learning teaches you how to manage your time. For me it's really enhanced the idea of taking control of your own learning; that you're in control of it. That's very empowering." Ailie Rennie is studying psychology online

"Every fortnight I have an individual Skype conversation with my online teacher when I talk in Mandarin and we're given sessions to prepare for our next conversation. Sometimes the time zone differences can be a bit of a challenge. But for me the benefits of being able to learn Mandarin outweigh the challenges." Christine Ng is studying Mandarin online

"My online learning experience definitely taught me self-motivation and that's been so important for starting university. At uni no one is behind you telling you what to do. If you don't get your work done, no one cares; it's totally up to you and that can be hard for many people. I already have that [self-motivated] mind-set." Hollie Smith studied psychology online and is now studying psychology at Universityof Sussex

ABOUT THE AUTHOR

Alex Hendry is Head of Sixth Form, IBDP coordinator and geography teacher at St Benedict's Catholic School in Alcester, Warwickshire. St Benedict's students are using online subject courses created and delivered by IB approved online course provider Pamoja Education.

Your school needs a Learning Management System (LMS)

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my Big Campus

"As well as the children learning how to use social networking, the children have their own online storage space and a library of resources to use. They love the independence they have and that they can organise themselves online."

James Brown
Assistant Headteacher
St Michael's CE Primary School

"My Big Campus is similar to falling into the biggest most exciting library in the world, with the most incredible resources all collected together under one easily accessed centre."

Caroline Barry
Director of ICT
St Leonards- Mayfield School

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- ***Community*** – Join an active community of teachers and learners for the best PD and professional learning networks.
- ***Creation*** – Go beyond consumption and get students writing, creating, and collaborating.
- ***Control*** – Let teachers manage device policies, control web access, and report on activity—all from right in the LMS.
- ***Safety*** – with Bob Campus, our 24/7 site mentor, not only do teachers/students get help every step of the way, but students' inappropriate online behaviour is flagged and reported

Find out more about how schools in the UK use My Big Campus and for further information: *Lightspeedsystems.com/TSMBC*

Lightspeed Systems

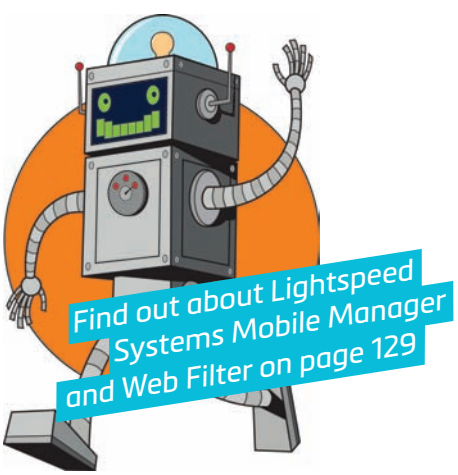
WHAT'S THE BIG IDEA?

T&I takes a look at an exciting learning innovation that connects students with the Web, their teachers and each other in a way that genuinely reflects the world in which they live...

How much use do you make of your VLE or Learning Management System? For many teachers, the response to that question tends to involve rather more shuffling of feet and averting of eyes than might be considered ideal. As ever when it comes to matters technological, the issue is largely one of progress, and the phenomenal rate at which it is happening – meaning that a system that was cutting edge five years ago is already likely to be looking dated and tired, and therefore less and less likely to be used to its full potential, if at all.

So what might a genuinely modern virtual learning environment or learning management system look like right now? Well, as we all know, a large part of the way that young people interact with each other these days involves social media. It's how they access news and information; arrange social events; chat with friends and make new ones; and occupy a good deal of their free time. It makes sense, therefore, to incorporate this understanding of their world into the way we expect them to interact at school – and that's where My Big Campus comes in.

Part social network, part learning environment, and part content management system, My Big Campus brings together education and socialising in a way that's innovative, and seems entirely logical as soon as you start to explore it. At its heart is an incredible virtual library, which is a massive collection of educational files – documents, videos and other resources, organised into 'bundles' which can easily be searched, accessed and downloaded (not to mention shared, recommended and rated) by teachers and students, according to what they are studying.



Find out about Lightspeed Systems Mobile Manager and Web Filter on page 129

MORE INFO

My Big Campus is available to schools worldwide on a 'per pupil, per year basis'. Find out more at www.lightspeedsystems.com or download a free guide www.lightspeedsystems.com/mbcis

"It's such a hub of content that you can use it for whatever you need," enthuses MBC Advocate Helen Ruston. "If you type 'Hamlet', for example, you'll find pages of relevant content. As an educator, that's a lot of your work done for you. You can 'follow' certain teachers as well, if you find yourself liking 'bundles' that they've uploaded. It's a fantastic tool for collaboration."

Naturally, as you'd expect from a Learning Management System or VLE, My Big Campus can be used to track students' progress, organise classes and timetables, share important announcements, manage homework and engage with parents. And its bright, engaging design and user-friendly interfaces link seamlessly with Lightspeed Systems Mobile Manager and Web Filter. But there's an added element to My Big Campus that sets it apart – social networking can be embraced safely for greater academic achievement.

"We know that collaboration and communication make for great teaching and learning," observes Helen Ruston. "However, when schools try to use sites like Facebook and Twitter, it can become problematic, because of the divide between home and school, and people's personal and professional lives. Social networking with My Big Campus is different, because it's specifically designed for education. As a safe environment where children can learn how to behave and interact online, it's a safe platform, but one with so much to explore that users don't tend to feel restricted at all – and the school can decide just how much to open things up, too, so communication can be limited to a single class, or opened up to all My Big Campus users across the globe."

One of the main reasons that Helen is able to be so confident about the online safety of the four million or so young people who are already using My Big Campus is the existence of Bob Campus, a 'robot assistant' that is available 24/7 to offer help and advice, monitor activity, and report and/or resolve potential issues. Bob keeps a watchful eye on what is going on, responding to questions (both serious and playful) from users, and following up any suspicious language that's flagged up by the system's automated filter.

"The way we respond to an issue depends on how serious it is, and what the particular school has told us to do," Helen explains. "So, if it's bullying, we might contact a staff member; whereas if a student uses obscene language in a private message, 'Bob' will probably send a private message reminding him or her that this isn't acceptable. We're not the Samaritans – but of course, occasionally serious issues will arise, and when they do, we have systems in place to help refer users to where they need to be.

Helen is clearly proud of My Big Campus, and excited about how it's likely to develop over the next few years. "We don't march into schools and tell them exactly how this product will magically improve teaching and learning," she concludes. "Instead, we show them a portfolio of tools, developed with education solely in mind and designed to enable teachers and learners to do what they need to do, to be the best they can be, in the context of a rapidly changing world."

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SMART THINKING

Creating a genuinely collaborative learning environment in your school could have a powerful impact on students' progress...

SMART amp
collaborative learning software

Pedagogy has changed considerably over the last few decades. The focus used to be on the individual and learning was mainly done by rote. If you had a good memory you could swot up the night before an exam and still pass it well without really understanding the subject matter. But in today's world, this is no longer acceptable. We must prepare our students differently if they are to succeed in today's more sophisticated, global society.

Our students will enter the world of work where, in every industry, technology plays a key role and collaborative working is the norm. In fact, collaboration is one of the most sought after skills in today's workforce. In a recent CEO global study by IBM*, collaboration was ranked as the number one trait that CEOs seek in new employees as part of their efforts to embrace a more connected culture. Creating collaborative learning environments is therefore an essential part of preparing students to take advantage of the opportunities that they will face in an increasingly global economy.

SMART Technologies has redefined pedagogy by supporting a more collaborative style of teaching and learning for over 25 years. Over 3 million active users around the globe use the world's #1 SMART Notebook™ collaborative learning software to bring learning to life. SMART Notebook™ lets teachers create high-impact lessons, access high-quality education content and engage students with unique interactive learning.

SMART Notebook™ has been created and refined based on feedback from educators, with features that help deliver engaging and dynamic lessons. SMART Notebook™ is built to support a variety of different teaching approaches, from large classes and small groups, to individual student learning. The latest version, SMART Notebook™ 2014, comes with a wealth of features to enhance teaching and learning including:

+ SMART Response VE – Seamlessly transition between lesson delivery and assessment. Students can respond to planned and spontaneous questions and quizzes from any Internet-enabled device, anywhere
+ SMART Notebook™ 3D tools – Provide truly immersive learning through the use of 3D objects right in your SMART Notebook™ lesson
+ XC Collaboration Basic – Stimulate collaboration and discussion while incorporating mobile devices into your SMART Notebook™ lessons in new and exciting ways
+ SMART Notebook™ Math powered by Geogebra – Improve math functionality for all grade levels with more than 55,000 math content objects and interactive activities for geometry, algebra, calculus and statistics. It supports both Mac and PC.

Getting connected

Supporting collaborative learning and creating lessons that encourage social interaction does more than give your students a better and more engaging way to learn together. It provides them with the skills they need to shape their future.

SMART amp™ collaborative learning software is a revolutionary cloud-based solution designed specifically for education to enhance teaching and learning experiences by simplifying how teachers, students, displays and devices come together.

The use and cost of disparate devices on different software platforms is a serious dilemma for education establishments. The browser-based software answers this problem. It helps teachers ensure that students have a consistent collaborative learning experience no matter what SMART Board® system, PC, laptop, tablets or mobile device are available to them. It connects a variety of different devices to a collaborative workspace where students can work together and teachers can upload lesson material and conduct real-time assessments.

SMART amp™ puts students at the centre of their own learning. It is designed for the pedagogical needs of today's classrooms. It provides teachers with the flexibility to engage students in all learning modalities – from whole-class instruction to collaborative group work to individual student projects and presentations.

SMART®

SMART is offering a free 90 day trial of SMART amp so that you can fully appreciate how you can work with your students to solve problems and understand concepts in huge shared workspaces, easily building on existing ideas and creating new thinking. Simply download the software at www.steljes.com/mysmartspaces/cloud

MORE INFO

For more information, please contact Steljes on 08450 724810, email us on info@steljes.co.uk or visit our website www.steljes.com/education.

*SOURCE:IBM C SUITE STUDIES (2012) LEADING THROUGH CONNECTIONS; INSIGHTS FROM THE GLOBAL CHIEF EXECUTIVE OFFICER STUDY

PTA social

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Secondary schools often struggle to foster a sense of community and get parents more involved in school life, sharing ownership for the success of the school.

PTAsocial is a private social network and volunteering platform for your school community that boosts community spirit, fundraising and parental involvement.

Our innovative app makes volunteering tasks manageable, inclusive and accessible. PTAsocial removes barriers to participation and helps communities flourish, both online and offline!

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Try PTAsocial FOR FREE!

Easy online setup in 2 minutes

"PTAsocial offers an exciting opportunity to unlock that massive army of volunteers to support our schools."

Lord Knight of Weymouth
Former Minister for Schools

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"I want my teacher to know more about technology than I do!"

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"Good quality training is the ultimate differentiator in getting the most out of technology..." Sanjesh Sharma - MD

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Q&A PTAsocial

Tes Macpherson, Founder of PTAsocial.com, considers parental engagement...

VISIT: WWW.PTASOCIAL.COM CALL: 0845 299 6406 EMAIL: HELLO@PTASOCIAL.COM

T&I: What difference does a thriving PTA make for a school?
TM: When parents look at a new school, they usually look at academic results first, but also search for one with families who are sociable, proactive and passionate about helping their school provide an excellent all-round education. Thriving PTAs raise more money for the school, providing pupils with fun activities and experiences they might not otherwise enjoy. Getting parents more involved in school life leads to better home school partnerships. Ultimately, PTAs lie at the heart of what makes a school unique – its community.

Why did you think that a special social network would be useful for PTAs?
Many PTAs suffer from poor communication, and are run by five or ten people who do almost everything. Facebook increases awareness, however schools and parents can worry about such a public forum. PTAsocial connects parents with other parents or teachers, while protecting their privacy – no sharing of personal profiles, all that's needed is an email address and password. Furthermore it handles the organisational aspect of fundraising activities, saving time and increasing participation. More parents help because tasks are manageable, and they just click and tick to volunteer!

Do PTAs tend to be more active in primary schools than secondaries?
It's common for PTAs to be active in primaries, when parents are keen to meet each other and ease their child into school life. Secondary schools can find it harder to unite the parent community, as children often travel great distances and parents no longer get playground contact. It's usually just a few very proactive parents who get together to organise events. Secondary schools would benefit enormously by leveraging online opportunities to build community spirit and facilitate fundraising via the PTA.

What kind of feedback are you getting from schools that are already signed up to PTAsocial?
The biggest benefits according to our customers are that PTAsocial saves time when planning events, delegating tasks and monitoring progress; that they have vastly improved communication and reach; that people are more engaged and more (new) volunteers are coming forward. Committees say they love being able to manage everything remotely, from their home computer or phone. They also tell us the feedback from their school parents is enthusiastic. The most gratifying comment from one PTA community manager was "We had no community before and without a doubt PTAsocial has given us one." Music to our ears!

Q&A NEW WAYS TO LEARN

Sanjesh Sharma, MD of New Ways to Learn, discusses a vision of technology...

VISIT: WWW.NEWWAYSTOLEARN.COM CALL: 0844 66 55 745 EMAIL: SANJESH@NEWWAYSTOLEARN.COM

T&I: How important is it for schools to have a clear and distinct 'vision'?
SS: A clear vision is crucial and must be fully aligned to other development plans so that ICT does not feel like a bolt-on. It needs to be one that has a suitable blend of tried and tested approaches, as well as a little blue-sky thinking to drive innovation and encourage the development of a dynamic 'sandpit' area. The vision should avoid talking about technology and instead focus on how a new and existing breed of digital tools will support the school's wider vision.

Do you think that schools are currently making the most of technology?
I don't believe they are! The main barrier to use is a good training programme that is fully aligned to the wider CPD schedule for every teacher. Plenty of schools are buying shiny new kit and leaving little in the budget to get the most out of it. After years of investment in ICT in schools, we are still yet to see a paralleled level of usage and education transformation with ICT.

What can the team at New Ways to Learn offer an experienced school SLT?
New Ways to Learn are like an extension of any school SLT; each team member has senior leadership experience in successful schools with ICT at the heart. The team can offer schools a glimpse into 'the art of the possible' through hands-on demos, trials and showcases with staff and students. By combining this with our natural affinity for innovation and creativity, we can highlight the combination of tools that can create new and enabling experiences. We can work with SLT teams to develop strategies that map to new curriculums, meet Ofsted priorities, and promote extended learning and parental engagement.

What advice you would give to any school considering the adoption of 1:1 tablets?
A 1:1 rollout needs considerable planning and a solid strategy that takes into account e-safety, sustainability and effective training for teachers. Moreover, 1:1 devices are at their best when connected to a good wireless internet network. It's worth checking the connection speed and the bandwidth capabilities of your school's network to make the most of immediate information exchange allowed by the devices.

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Simon Pluckrose, IT Network Manager
Ullswater Community College

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Q&A
Schools Broadband

SCHOOLS BROADBAND

Talk Straight's Managing Director, David Tindall, discusses the importance of having the right broadband connection for your school...

VISIT: WWW.SCHOOLSBROADBAND.CO.UK CALL: 01133 222 333 EMAIL: INFO@SCHOOLSBROADBAND.CO.UK

T&I: What are the advantages for schools when they buy their broadband from a specialist supplier?
DT: As an award-winning ISP, we are 100% focused on providing internet connectivity to schools. Our specialism means that we can source broadband from a number of providers on a wholesale basis, so schools get the fastest connectivity for the best price.

Our unique, cloud-hosted infrastructure, which utilises systems from industry leaders Fortinet and Lightspeed Systems, gives schools the reassurance of security and web filtering from companies who are specialists in what they do. This system is much more sophisticated than local authority broadband and gives schools the flexibility to tailor web filtering by year, group or even individual pupil, and filtering can be applied and released for set periods of time. The system meets with Ofsted's recommendation that schools move towards more managed systems to help pupils understand how to manage risk and to provide them with richer learning experiences.

Can you increase a school's broadband service even when Superfast broadband isn't available?
We can run a check on the local street cabinet of every school to see when Superfast broadband is available. If it isn't available, we can install an ADSL connection which we'll then upgrade for free as soon as Superfast broadband arrives. For secondary schools and larger primaries who have high internet usage we will install a leased line, giving them their own fibre connection that they won't share with anybody else.

How easy is it for schools to move away from their local authority broadband?
Once a school's broadband contract expires they are free to decide who provides their broadband and are not obliged to stay with the local council. We've helped hundreds of schools transfer their service to us and we can assure schools of minimal disruption

during the changeover. We'll also ensure that schools can access any local authority systems, such as AVCO or SIMS on their new connection.

Is your broadband more expensive than local authority broadband?
Since the cut to the Harnessing Technology Grant in 2011, we have found that we've been cheaper than local authority broadband in about 40% of cases. We don't charge on a per pupil or user basis so schools know upfront how much their broadband will be for the duration of their contract. We can also offer a discount to Academy Trusts, clusters and families of schools when they join us at the same time.

What level of support can schools expect from your team?
When a school moves over to us, one of our engineers will manage the changeover. They receive a walk-through of the Fortinet and Lightspeed Systems interfaces and functionality via webinar, giving them full knowledge of how to change their policy settings from day one.

Our one-day training workshops, which are held across the country are available for free for up to three members of staff from each school. If training is desired for all a school's staff, we can host an individual training session on a particular school site for a minimal charge.

In addition, our in-house technical services helpdesk is available to all of our customers for free and is open 8am to 6pm Monday to Friday.

What other services can you offer to schools?
We can offer a number of complementary services to schools to help them make the most of their broadband. For schools that use laptops or mobile devices, we can install wireless access points and we include free, unlimited mobile device management licences for the first year of a school's contract.

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CASE STUDY: ST JOHN PLESSINGTON CATHOLIC COLLEGE

Discover how cloud-based assessment is making life easier – and assessment more enjoyable – at one Merseyside school...

As the world becomes more web-based, the need for desktop software is diminishing. With Google Chrome, Firefox, Internet Explorer 10/11 and especially mobile devices such as tablets, the World Wide Web has moved into a new, more interactive era.

In the simplest terms, cloud computing means storing and accessing data and programs over the Internet instead of your computer's hard drive. The cloud is just a metaphor for the Internet. It goes back to the days of flowcharts and presentations that would represent the gigantic server farm infrastructure of the Internet as a white, cumulonimbus cloud.

Most education software needs to be installed onto a machine, or maybe even 20 machines within a school. Because of high levels of security this can sometimes take a little time and usually needs be done by an IT Department. Additionally, when there are updates needed, you have to go through this process again and it can get frustrating.

A cloud-based service removes the need for this installation and updating process, which makes life quicker and easier for schools and their IT Departments. It also means you can access test data from a tablet or other mobile device.

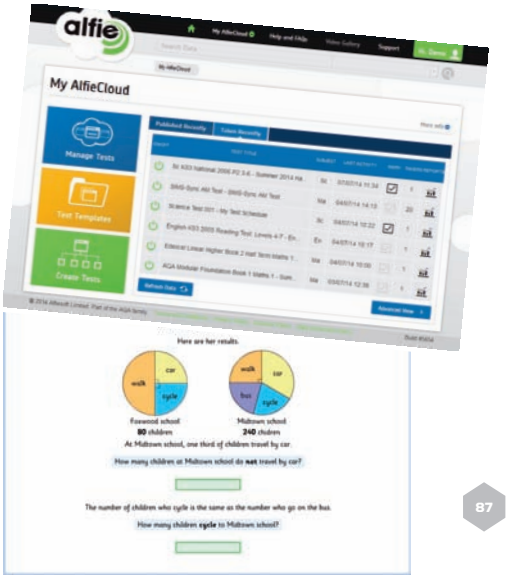
Introducing Alfie

The AlfieCloud is the first fully cloud-based assessment system and allows you to create and take tests, perform data analysis and generate formative feedback at school or home. It enables schools to improve their assessment practices, reduce photocopying costs and marking time while improving feedback to learners, ideal to help navigate the uncertainty of curriculum and level changes. The system contains some 10,000 questions spanning Key Stage 1-4 and includes SATs as well as AQA and Collins sourced material.

St John Plessington Catholic College is an outstanding Voluntary Aided Catholic 11-18 College of over 1400 pupils. The college serves the population of the Wirral and is oversubscribed in all year groups. In 2010/2011 the college was awarded the Times Educational Supplement's Outstanding Secondary School of the Year award. The college has the status of a High Performing Specialist School and as a National Support School, a Leading Edge School and a National Leader of Education, provides services and support to other schools in the local area and the wider region.

Prior to this year, the college had used paper-based SATs style exam questions to assess pupils in Key Stage 3 at regular intervals throughout the school year. This meant a considerable number of teaching hours were taken up by pupils completing assessments in class, which ultimately led to a high marking workload.

So far, the college has used Alfie for Key Stage 3 end of unit assessments on an alternating basis with longer written assessment papers. The data from the Alfie assessments has contributed to the departmental monitoring of pupil attainment which in turn has informed pupil and parent reports and set changes within science. The Student Reports generated by Alfie have been particularly useful to Key Stage 3 pupils as they have allowed them to identify areas of strength and areas that require further work and



development. In some cases, these have motivated pupils to repeat the test in order to improve their score. This was straight-forward to do through the 'Manage Tests' option within the Alfie program.

The college has also used Alfie for science at Key Stage 4. Teachers have used this to set tests as homework to assist with revision as well using it as a tool to consolidate knowledge and practice examination technique.

What the school says:

"Alfie has proved to be a popular method of assessment with both pupils and staff. Pupils enjoy being able to revise and complete online assessments at home. The immediate and personalised feedback is very effective in guiding pupils to develop weaker areas in their knowledge as well as enabling staff to address these areas in future lessons. Alfie has saved us a lot of marking time for end of topic tests. Impressed so far!"

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OKI Mobile Print app is fully compatible with a wide range of OKI printers and multifunction printers.

Google Cloud Print

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Q&A

PRINTER SOLUTIONS

Andrew Hall, marketing manager at OKI Systems UK, discusses the too-often overlooked issue of print management in schools...

VISIT: WWW.OKI.CO.UK **CALL:** 01784 274300 **EMAIL:** ANDREW.HALL@OKIEUROPE.CO.UK

T&I: In your experience, do secondary schools tend to pay enough attention to the issue of managing printers and printing?

AH: Historically, the answer is no. In the past, printing has often been seen by schools as little more than an add-on to the overall IT budget. It has rarely received much focused attention as a topic in its own right. However, this situation is now starting to change and we are seeing an increase in a more considered approach to procurement. Schools are increasingly looking at cost savings and management of print.

What are the potential problems of not doing so?

By not properly managing their printers and printing, schools will inevitably end up printing much more than they need. There is likely to be very little visibility into the printing process. Colour printing may well be unrestricted. Some departments may well be printing particularly high volumes. The right devices are unlikely to be being used and without an effective approach to managing print, any genuine insight into the overall status of printing within the school will be difficult to achieve. Costs are likely to be uncontrolled as a direct result.

Do you think that many schools are aware of just how much they spend on printing?

No. Many schools don't have a clear view of spend or total cost of ownership in this area and they are therefore not able to tap into the benefits of a managed print approach while also driving efficiencies.

What's the first step towards making savings – is it necessary to invest in the short term, in order to reduce costs in the long term?

It is not necessarily the case that schools need to raise their capital expenditure on printing in order to make long term savings on operational expenditure. For many schools, a managed print service contract is likely to be the best way forward.

Controlling the print environment and monitoring who prints what through managed print services will not only save costs but raise the awareness amongst pupils of the need for a sustainable approach to not only print but also cost savings in general. Managed print services typically start with an audit which shows exactly what the current print costs are. A tailored proposal can then be developed to demonstrate print efficiencies and cost savings that can be achieved.

Quarterly reviews are often carried out within managed print service implementations in order to ensure that costs are being effectively controlled.

Are you able to factor in an environmental benefit when suggesting print solutions for schools?

Yes, absolutely. OKI is committed to providing the greenest most efficient printing solutions across the educational sector. It is a popular misconception that green printing has to be more expensive. In fact, the reverse is often true. Many schools simply do not appreciate the money they could save from adopting a more environmentally friendly approach to document output.

The Carbon Trust UK recently estimated

smart
MANAGED DOCUMENT SOLUTIONS

that schools could save around £70 million per year by reducing their energy consumption, green printing and document management has moved higher up the agenda within schools and colleges across the UK.

Through smarter, greener printing and sustainable print procurement, OKI has helped a number of schools reduce their print costs by at least 25%. All OKI products have been designed to make the life of their users easier at the same time as balancing environmental impact. Today, OKI ensures all its printers have 'Deep Sleep' mode cutting power consumption to the minimum. In addition, some of the latest OKI printers also offer 'Auto-Power Off' technology, which automatically turns off the printer after extended periods of non-usage.

Society is increasingly moving towards 'paperless' business models – how do you factor this into your conversations with schools?

While we believe there will always be an intrinsic need for printed output within schools, we are starting to see growing interest in mobile printing and this is helping facilitate more of an emphasis on paperless processes.

We are today seeing increased interest in Wi-Fi enabled printing. Apple's AirPrint is proving a viable option for any schools with access to an AirPrint-enabled printer. In education, where iPads and other tablets are beginning to be used extensively, teachers and others are storing their documents in the cloud or central server and using AirPrint and their iPad to access the document and trigger its printing. Indeed, at OKI we have recently seen a growing number requests from schools and other educational establishments for our AirPrint enabled A4 colour and mono multifunctional printers.

Schools are also beginning to show an interest in Google Cloud Print. We recently announced that a selection of our multifunctional colour printers are now Google Cloud Print-ready. This means that users can wirelessly print documents to cloud-connected printers from any mobile phone, laptop, tablet, PC or other web-connected device. They can also connect to traditional printers that are plugged into a Windows, Mac or Linux computer with internet access using the Google Cloud Print connector in Google Chrome.

At the moment, Google Cloud Print integrates with Chrome, Gmail for mobile and Google Docs for mobile and can also print to third-party native mobile apps on Android and iOS platforms.

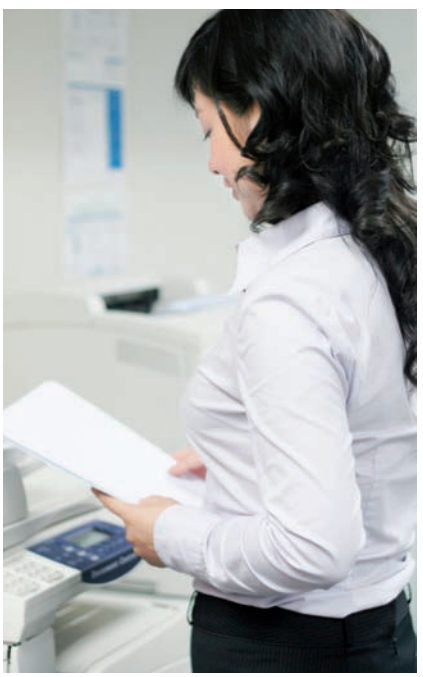
What about ongoing support? What can schools expect from you by way of aftercare and maintenance?

OKI has a local team available to support schools and help resove their printing issues. It also has a European Technical Support team based in Poland.

Can you give us an example of a school that is currently benefiting from having come to you for a print management solution? What do staff and students say about the new arrangements?

To drive efficiencies and enhance the learning environment, Manchester's largest high school, Parrs Wood High recently decided to opt for a managed service approach to its printing - from OKI. According to Anthony Cumbor, ICT Support, Parrs Wood High School: "The benefits of the scheme were compelling – from the convenience and cost-effective perspectives in particular... We pay a set price per page. This gives us tight cost control and predictable budgeting because we know exactly how much printing is going to cost. The approach also streamlines administration by giving us the option to charge back costs quickly and easily to school departments."

The decision to standardise on OKI printers and migrate to a managed services approach has changed the school's approach to printing. Previously it considered it as an expensive necessity that was difficult to manage and control. Today, it regards printing more as a cost-effective enabler, helping pupils to produce high-quality work and streamlining the whole administrative process while delivering value for money and a significant reduction in costs.



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Windows 8

Apps from Windows Store; vary by market.

Windows 8
Microsoft

Windows 8.1

Windows 8.1 provides the platform for anywhere, anytime learning to help schools improve educational outcomes, and deliver the best computing environment for students, teachers and administrators. Windows lets students and teachers use the powerful learning tools of Office, reach valuable educational content in apps, and safely and securely browse the web.

To find out more, or to request an evaluation unit, get in touch with an Educational Specialist Account Manager on **023 9232 2700** or visit **novatech.co.uk/ntab**

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CASE STUDY:
"ICT TEACHERS NEED TO FOCUS ON THE TEACHING, NOT ON THE ICT"

It might be a surprising sentiment to hear from a PC manufacturer, but Tim LeRoy of British technology supplier, Novatech, believes that great teaching isn't about staying one step ahead of your pupils in a technological arms race – it's about knowing how to encourage them to learn and expand their horizons...

We're lucky enough to work with thousands of passionate teachers and some of the best are those who look at their technology simply as tools to facilitate teaching and learning. They know that it's not the devices or even what they do that matters, but what they can do to enable the students to achieve.

Chris Monk, a retired computer science teacher, said that he became a 'real' teacher "because one day a student got ahead of me". He wrote in the Guardian that, "of course, some people think that being one step ahead of the kids is an essential characteristic of a 'good' teacher. But I think truly brilliant teaching lies in another direction. You cannot stay ahead of them – all those kids with their endless enthusiasm, energy and countless hours of hacking.

"Instead, we teachers need to get clever and think about what we bring to the table: you are an expert in learning first and the subject second, so stop feeling you have to compete with them. Help them; communicate their successes, focus on what they achieve, not on what you don't know, and enjoy helping them to explain what they have done.

"A real teacher recognises that many students are brighter and will achieve more than they ever will. A real teacher starts from the premise that they don't know everything and celebrates learning new things with students. A real teacher gets a kick out of the unexpected and loves to be challenged."

At Novatech our most important job is to understand how teachers want to teach and how the school wants to deliver its education. Only then can we start to discuss the kind of hardware and services that will enable them to do that – and it has to be a collaborative process where we learn together. We start with the assumption that the teachers will know far more than us about the right tools for their classrooms, so we try and develop a relationship with the whole staff room – not just the network managers.

Lance Bartlett teaches design and technology at Beechen Cliff School in Bath. He uses Auto Desk inventor – professional engineering and design tools – to teach Y7s to develop and build their own 4-wheel drive that can negotiate across a specially designed track for the Jaguar-Land Rover Schools Challenge. He readily admits that some of the things his students are achieving challenge him and reckons that the tasks they are completing are up at degree-level engineering.

One of the problems Lance, like many teachers, faced was the amount of time it took to log a class on to a network, particularly if they were using complicated software. The limited amount of time in any given lesson means that the technology needs to be reliable, as losing precious time isn't an option for Lance and his students.

With the help of their Novatech account manager Shayne, Beechen Cliff have designed an ultra-small form factor PC that can handle the CAD software and still log the whole class on in less than a minute – a radical improvement on the previous PCs which took up to quarter of an hour to get going.

Making sure that Beechen Cliff don't need to worry about their ICT is important, but only a small part of what we do. For us the real success is that Lance is enabling 11-year-olds to become degree-level engineers, and we are delighted that they are all pushing us to find the right tools to let them get way, way ahead of us.

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Q&A ISIS

Nick Topliss, MD of Isis, discusses an aspect of the 21st century classroom that is all too often overlooked...

VISIT: WWW.ISISCONCEPTS.CO.UK CALL: 01844 280123 EMAIL: INFO@ISISCONCEPTS

T&I: How much difference can furniture really make to teaching and learning? Isn't it just about aesthetics?

NT: Furniture can make a huge difference. Having adaptable furniture that really works for your space allows the teacher to vary lesson plans to include different ways of working and keep childen engaged. Gone are the days of rows of desks all facing the front. Furniture can now be used to help support different learning styles. With modern adaptable classroom furniture you can move from a large group set up to small group working right down to individidual tables. We have found that when children are comfortable in the classroom they really do learn better.

For a school with a very tight budget, what would you advise as the single most transformative furniture investment that could be made?

Adaptable tables like the Isis t41. These allow you to change your space quickly and easily. You can arrange them in circles, waves, ovals or as individual tables. They are strong and stable to deal with school life and have a robust compact top that is long lasting. When you want to clear you space you can easily flip up the table tops and store them at the side. Tables like this are also great for using with technology and if you use iPads or laptops you can integrate a power hub to ensure that you don't run out of juice mid lesson!

Many schools are moving to a BYOD/1:1 policy at the moment. What does this mean in terms of furniture requirements?

If you are moving to support devices that allow students to learn anywhere, then your furniture needs to reflect this too. Device charging and syncing is also a challenge. We offer solutions to help with cabinets and trolleys that are designed to charge overnight, and sync too if you want them to. Then there are hubs in case you need a midday top up, or if a student has forgotton to charge his or her device. We also sell lockers that are designed to support a 1:1 policy.

How bespoke are the solutions offered by ISIS?

Isis solutions are tailored by customer; our consultancy service is totally free and we will come and visit your school, talk through your requirements and see how the space is currently being used. Our talented designers will then put together some plans, visuals and recommendations to show you how you could get the most from your classroom. When you are 100% happy we then manage the whole installation process. Leaving you with a classroom that really does make a difference.

SAVING GRACE

So you've invested in iPads – but how can you make the most of them? Here's one solution to get you started...

For many schools, iPads have become as familiar as PCs or laptops. Yet the reasons for purchase, and how they are used, have left some with equipment they are not taking full advantage of. Whilst most have gone through a full assessment/ planning process before implementation, a few have found that due to pressure from staff, parents or even governors, they have purchased equipment that they are not fully utilising.

iPads are great for consuming information, and there are many apps that allow pupils to demonstrate their creativity. But how do you save that work for later? This is a key question that prevents many schools from fully embracing the technology available to them.

There are a few solutions available, but they tend to be costly and / or complex to set up, and often have limited compatibility with apps.

AirCatch changes that. It's an easy to use solution that enables schools to save from virtually any app to their existing network folder structure. AirCatch works by generating email addresses for user or group folders on the network. Users email their work to the AirCatch server, which automatically saves it in the correct folder. Because email accounts are automatically generated using existing folder structures, setup is simple, and requires no on-going administration.

AirCatch can auto-generate Apple Profiles for easy configuration, and will create and deploy contact information, meaning users do not even have to type the full folder name, just select from a list.

"I thought I'd update you on our progress with AirCatch. Everyone is really pleased with it. The children are using it independently and teachers are saving work straight to the server without any problems. Thanks so much for all your help – you made me very popular!"
Juliette Rogers, ICT Co-ordinator, St Paul's C of E Primary School, Chessington, Surrey.

MORE INFO

To find out more, call 0203 258 4020, email info@bits.uk.com or visit the website www.AirCatch.co.uk

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INSPIRING CHEMISTRY

Discover free resources for the new school year on Learn Chemistry, from the Royal Society of Chemistry...

Learn Chemistry, the Royal Society of Chemistry's award-winning education website, is an innovative platform of free resources that support chemistry teaching and learning.

Teachers and students can explore thousands of resource downloads, substance pages, articles and activities. Using videos, simulations, games, worksheets and more, teachers can enthuse and inspire their students. These teaching materials relate content to everyday life and real-world challenges in areas such as: medicines; air quality; scarce natural resources; energy; lifestyle; and agricultural productivity. They are designed to encourage students of all abilities to approach challenges through problem solving and analytical thinking.

Bringing the periodic table to life

The interactive periodic table is one of Learn Chemistry's most popular features. It combines element data with a variety of interesting facts – including history, alchemy and scarcity – and links to fun and informative podcasts and videos.

On this day in chemistry

Learn Chemistry's calendar is a potent reminder that important chemical discoveries and events have happened, and continue to happen, every day of the year. Linking lesson plans to timely historical facts can stimulate students' interest and bring a real-world relevance to the learning outcomes.

Advancing achievement

New to Learn Chemistry for 2014, online assessments are now available to help improve student attainment. Launching with GCSE to A-level (and equivalent)

transition, the assessments provide students with feedback to support their learning.

Experiments at your fingertips

Everyone will be able to participate in chemical investigations even if they don't have access to a laboratory, thanks to Learn Chemistry's online experiments. The online experimentation site will feature practical resources, interactive screen experiments, citizen science projects, global experiments and more.

Connect with the world's leading chemistry community

Learn Chemistry Partnership is a free programme that connects teachers and schools with the Royal Society of Chemistry – and all its tools and resources to shape and inspire future generations of chemical scientists. By registering as the advocate for chemistry in their school or college, teachers can become part of a national network of teachers and institutions. Learn Chemistry Partnership includes a variety of benefits, including free Royal Society of Chemistry membership and copies of Education in Chemistry magazine.

The 'one-stop shop' for chemistry teachers and students

Learn Chemistry's wealth and variety of resources make it the first point of call for anyone teaching or studying chemistry. "Learn Chemistry has become one of the most important tools in my chemistry teaching toolbox," says Peter Banks, Head of Chemistry at The Purcell School. "When time is tight, the ability to simply pull up the Learn Chemistry page and find something quickly is, frankly, a lifesaver!"

MORE INFO

To be kept up-to-date about new resources, sign up for the Royal Society of Chemistry's monthly education newsletter on the Learn Chemistry website: http://rsc.li/lc-14

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KEEP IT SIMPLE

IPEVO combines intuitive, unfussy design with a clear understanding of educators' aims to develop teaching tools you and your students will love to use...

IPEVO's interactive teaching tools empower educators and teachers with cost effective, compact technology that is simple, intuitive and flexible – saving precious time, and allowing resources to be wholly dedicated to teaching. IPEVO products are developed with a unique 'experience-driven design process'. The first step is observing frequent tasks or common goals in the teaching process and how they fare with available classroom equipment on the market – then rethinking

NEW TECHNOLOGY PRODUCTS

entire products from the ground up to provide the simplest and most efficient tool for achieving those tasks and goals. IPEVO's design mantra "do more with less" means that every product's essential purpose – what it does — is never interfered with by complicated operations or cumbersome features. IPEVO products are easy and intuitive to use so educators can focus on teaching... and not teaching equipment.

For example, the iZiggi-HD is the next evolution in affordable doc camera technology. Traditional doc cams often need to be USB connected to a computer. But with the exciting rise of tablet computing in more and more classrooms, it's time to harness the full educational potential of the iPad. Iziggi-HD connects wirelessly to iPad and skips the computer to stream live, high-resolution images of documents, textbooks, handwritten notes, pictures, devices and more.

Features include:

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- resolutions up to 1600 x 1200 wirelessly on iPad, tablet, Pc or Mac
- full autofocus lens
- up to 30fps live video capture
- multi-jointed stand and swivelling head for easy and versatile image capture
- exposure toggle, autofocus switch, built-in battery and other smart features
- wireless freedom
- max shooting area 315 x 230mm

Q&A

POINT2PROTECT

Ian Skeels, Director, Point2Educate Ltd, discusses the future of e-safety...

VISIT: WWW.POINT2PROTECT.COM CALL: 01235 841546 EMAIL: POINT2PROTECT@POINT2EDUCATE.COM

T&I: Why has Point2Educate now decided to launch an e-Safety service?

IS: Child protection is one of the biggest issues facing society today and the education community has a key role to play in tackling it. Point2Educate always aims to apply technology in innovative ways to provide schools with great value services. So we welcomed the e-Safety aspects of the new Computing Programmes of Study and immediately began to think about how schools will teach students to use technology "safely, respectfully, responsibly and securely" and whether we could help. This led directly to the development of our new Point2Protect service.

How has the issue of e-Safety evolved over recent years?

Over the last ten years it seems that schools have been encouraged to tackle their pupils' e-Safety needs by aggressive blocking, stopping and filtering – a Canute-like attitude that says 'if we block access to all the nasty stuff in school everything will be okay'. Of course, we all know that telling children they mustn't look at something only makes them more curious. And today those children have instant access to mobile devices, apps and web content that their parents' generation couldn't begin to imagine. This creates an immense challenge for schools, but we think we have a way to help.

What is it about Point2Protect that sets it apart from other e-Safety services?

Point2Protect works on those mobile devices that schools are investing in so heavily today, providing on- or off-domain web filtering and scheduling of app usage, plus easy-to-use reporting into a central dashboard. So schools can see at a glance, for example, how effectively their year 7 tablet computers are being used. Then detailed reports can be used to inform the school's e-Safety teaching.

Our guidance and template libraries, created in partnership with the UK Safer Internet Centre, help schools effectively communicate and involve their staff, parents and students in a new and exciting strategy. Point2Protect is a complete peace-of-mind service that we're sure schools will welcome.

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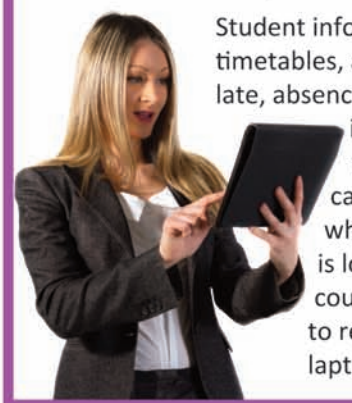

Student information including timetables, attendance, minutes late, absence notes, medical information, behavioural and achievement data can be accessed wherever the teacher is located (even in another country) without the need to rely on a desktop or laptop computer.

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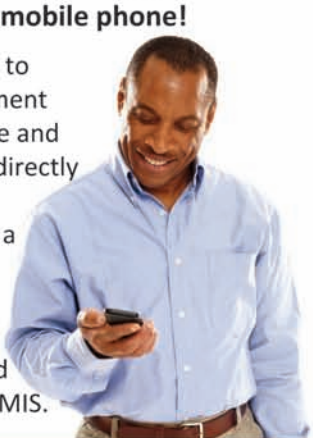

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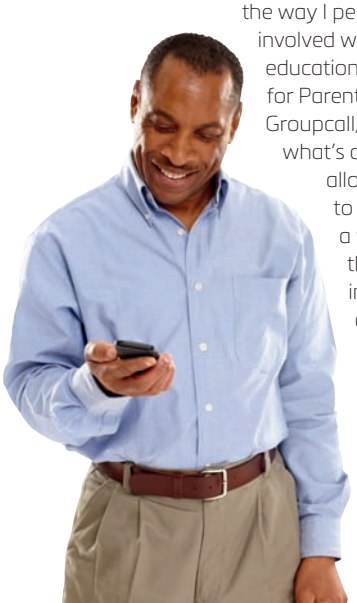
GROUPCALL EMERGE

Contact: **www.groupcall.com** Reviewed by: **John Dabell**

When I first heard about push notifications I thought they must have something to do with be-hoodied youths giving out an advance warning before shoving me over and walking off with my phone (having first used it to film me for YouTube, of course).

That was until a helpful computing teacher, Mr Robbins – who looks about 12 – explained all. In case you're in the dark too, push notifications are in fact a nifty trick used by apps to alert a phone to content updates, messages and other events of interest. You only get a push notification when you install an app that uses them; the notification is pushed to the user by sound, on-screen alert or badge. This is great for a footy fan like me, for example, because on a match day I can be sent the latest scores even if the relevant app isnt running. The notification sends me a message and when I touch it, I'm directed back to the app for more information. Beyond football, though, why else might I need such a service? Well, being very much like the overprotective and well-meaning Jack Byrnes from Meet the Fockers, I'm more than interested in push notifications concerning my daughter and what she gets up to at school.

Like most parents, I find that asking my offspring, 'What happened at school today?' usually results either in silence, or an answer thats deliberately empty of anything of use whatsoever – so an app that would allow me to receive and view information in close to real time, pushed directly to my phone, could really change the way I perceive and get involved with my child's education. With Emerge for Parents from Groupcall, this is exactly what's on offer, allowing parents to drill down into a fair portion of their child's information and get to know far more than they might face to face. Of course, they don't actually get to see everything – that would be insane from a data protection point of view. The school chooses what information parents may view and quite rightly, too – so who has been bullying whom, and how many more more marks Eliza and Callum got in their maths test compared to my pride and joy would remain the school's business until or unless I might need to be brought into discussions.



By clicking on the app, though, I can see information on attendance, assessment results, behaviour and a timetable. This offers real peace of mind when it comes to my child's activities and daily schedule. It's essential information and should be a basic given – but remarkably isn't for many parents. What Emerge is especially useful for, though, is getting push notifications about any absences from school, as well as key achievement and behavioural events. And the great thing about this resource from a teacher's point of view is that the system is completely automated. All information is extracted directly from the school's MIS (currently available for SIMs), so there's no extra work required, which is always back of the net stuff.

Groupcall says that this is a unique service. I'm not entirely convinced about this, as a quick internet search reveals other companies offering something similar – but nonetheless, Groupcall is already in the top three of the Premier League when it comes to home-school communication, so you know they've got the quality, strength and depth to win you over.

Cost-wise, there is a sliding scale for schools wishing to purchase this innovative resource – from £125 for an estalishment with up to 100 pupils to £2,000 for one with over 1500 pupils. The price is worth it whatever your size, because this sends out a message that you are serious about communication, working together and keeping parents in the loop. What right-minded school wants to keep the parents at arm's length? Indeed, communication technologies like this are worth their weight in gold and should be high on the agenda of school management and spending plans.

I have no hesitation in recommending this new app as it strengthens the connection between home and school and empowers parents in a positive and dynamic way by involving them in their child's day to day learning at the push of a button. Mobile technology changes the way we communicate and personalises the educational experience – with Emerge for Parents, Groupcall has exploited this to the full. And if you need any more convincing about just how good Emerge is then it's worth knowing that Groupcall Ltd is a 2014 Bett Award winner for its ICT services and support.

groupcallemerge
it's all in hand

VERDICT

This is a powerful and intuitive app that is just the job for parents. You don't have to keep asking about what your child is doing and when, holiday dates and term times are a doddle to check, and you can easily find out and update what contact details the school has for you.

KYOCERA [k{ey}-o-sée:ra] noun

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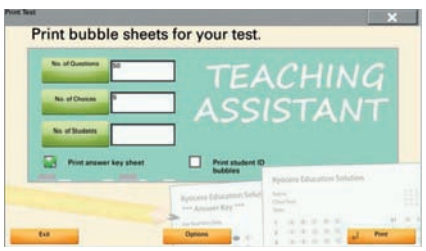
Document Solutions

WHAT'S GETTING TEACHERS TALKING?

Understanding what educators need to help them drive improvement is at the heart of KYOCERA's range of waste-reducing solutions for schools...



As teachers make plans for the next academic year, what is getting them talking? Improving their students' experience and the facilities offered by their school is of paramount importance. And when you add buzzwords like BYOD, mobility, driving improvement and of course the constant need to save time, money and resources, identifying the easy-to-use products designed to meet the needs of education is vital.

In a recent KYOCERA survey of over 500 teachers, a third of respondents (33%) believed that 'improved BYOD and mobile working' would improve their school's technology in the next year. However we know that when students of every age arrive with their own laptops, smartphones and tablet computers, printing from these devices to the school printers can be a challenge. **EveryonePrint** solves the challenge of student printing. When installed on a school's print servers, it lets students securely print to designated printers simply by sending an email or uploading a file with a web browser using nearly any computer or mobile device whether a student is onsite or not.

KYOCERA's survey also highlighted the importance of apps in education. Apps are more prevalent in higher education, with 51% of teachers in colleges and universities saying that they use them. Teachers across the UK are split down the middle on this issue, with 42% agreeing they do currently use apps in their schools and 42% saying they don't. Of those using apps, the North East (54%) proves to be the leading region, closely followed by London (52%).

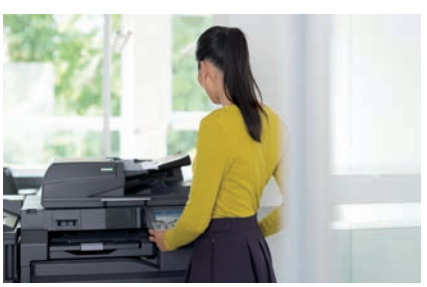
If you need a simple app for class printing then KYOCERA's **Mobile Print App** gives a truly mobile experience for those who just want a simple way to print and scan quickly from their mobile devices. The app lets users simplify their everyday document workflows making it much faster and easier when using iOS and compatible Android smartphones and tablets in the education environment.

Driving improvement in schools systems is a major challenge but with KYOCERA's **SIMS Connector** – the simple, fast and secure storage of documents and information in schools just got easier.

A SIMS Accredited Technical Partner, KYOCERA developed its SIMS Connector in conjunction with **Nsi Autostore**. The Autostore element within SIMS Connector can scan a document directly to SIMS.net from the Multifunctional Device, ensuring a copy is always held and retrievable. The SIMS Connector has a simple licence model, charged by device and can be considerably cheaper than other SIMS products, largely because there is no additional hardware required. The embedded connector allows the seamless integration of Autostore with SIMS.net and provides significant cost savings, improved security and increased compliance.

The KYOCERA survey also showed that security is a huge issue for schools across the UK, yet just over a quarter (27%) of schools currently use biometrics in their schools, with that number increasing to 40% in London. **BioStore**, KYOCERA's biometric printing technology offers a unique, simple and secure method of identification which saves money and is environmentally friendly. Users scan their fingerprint using a BioStore IDPoint connected to the KYOCERA MFP. The fingerprint information is then sent via the network to the server software, where it is referenced in the database and verified as a user on the network. If the ID number is successfully verified then the user is seamlessly logged into the embedded software on the MFP.

And for those educators who need a little help with their class-test marking, KYOCERA's latest app, called **Teaching Assistant**, is at hand to automatically mark student papers on the MFP, ensuring accurate test reporting and allowing teachers more time to focus on their students. The intuitive app streamlines the marking of multiple-choice tests so that when combined with a KYOCERA MFP you can automatically print, scan, mark and analyse students' tests and get detailed reporting on test results. It saves time and avoids errors and goes some way to make the pressurised lives of teachers a little easier.



MORE INFO

For more details on KYOCERA's offering for the education sector and to get your copy of the KYOCERA survey please visit: www.kyoceraineducation.co.uk or call 08457 103104.

Are you ready to use teacher and pupil created video to **stimulate learning outcomes?**

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Q&A
Video for teaching and learning

SCHOOLVID

Andrew Goff, COO at Digital Learning Delivery, explains how SchoolVID can engage students, and provide learning opportunities...

VISIT: DIGITALLEARNINGDELIVERY.COM **CALL:** 01608 664476 **EMAIL:** ANDREWGOFF@DIGITALLEARNINGDELIVERY.COM

T&I: Why is video such an important medium for teachers and learners?

AG: Video is an incredibly rich medium by which to communicate information for teaching and learning. It's now the preferred medium that the majority of society chooses to use in all aspects of their lives; entertainment, research and communication. It is not only the consumption of video that is important but it is also about facilitating students to express their creativity and ideas by making video that is hugely important. Watching video has many merits in allowing for different learning styles but ultimately, from our experience with different schools, students unknowingly immerse themselves in learning when they have to create a video on a subject area.

Why do schools need a hosting and delivery system for video? What's wrong with accessing it straight from the local school servers?

School IT provision is going through another massive change, in moving to the Cloud, and one ultimately, that I feel based on my 20 years of working in schools, will finally bring about the significant changes in education that many of us have always believed that technology could help deliver with good teaching practice. The majority of schools recognise the need for their staff and pupil resources to be available over the Internet, remotely wherever they may be, and increasingly on whatever mobile device is available. Driven also by improved internet connectivity and pupils' increasing access to their own devices. So it is a natural progression, based on teaching and learning needs, that schools now need to invest in Cloud based video hosting and delivery systems that are fit for purpose and can deliver learning through a quality video experience as needed, anywhere.

How can SchoolVID help change the way that learning happens in schools?

As with all developments in schools it is about exploring, planning and deploying what is right for your own school community. We have seen some excellent teacher and student

activities in the last 12 months as we prepared SchoolVID for launch. For example, teachers recording short instructional videos for homework and revision, video feedback on portfolio work and more traditional teacher demonstrations filmed by the students. Short student 'news' reports on subject topics are very popular and demonstrate the amazing ability of our young people. Video recordings on school trips and visits, green-screened presentations and sports match reports are very popular. All of the activities mentioned here create really great learning opportunities for teachers and students, very much enhanced and facilitated by SchoolVID allowing all video to be uploaded, archived and viewed by different audiences for different purposes. The full potential of video in learning has always fallen short as it has not been simple to share it as SchoolVID permits. We see some schools are already using the videos that their students have created in the classroom as parent engagement materials. In doing so, it also increases the self-esteem of the students that created the videos.

How easy is your system to set up and use?

The system is incredibly simple and we have tried to remove as many barriers to start up and ongoing use as possible. When a school expresses interest in SchoolVID we can set up an account for them by return and with a few instructions be up and running quickly. The majority of schools that have expressed interest have wanted to start by doing some form of 'online TV channel' for their school; something that they can be completely in control of and which doesn't have any advertising or any other potentially detrimental materials associated with it. It is simple for school personnel to set up the branding on their SchoolVID portal and as such once they have uploaded some of their own school videos achieve an 'online TV channel' for their school relatively quickly. IT network managers like SchoolVID because of its Single Sign On (SSO) provision and its easy user management integration with established systems.

What are some of the main elements of its functionality that make it unique?

SchoolVID is based on technologies that handle significant amounts of today's mainstream professional broadcast industry video content. It is this pedigree of technology that SchoolVID brings to education to underpin the delivery of teaching and learning through video. Making the uploading, searching and linking to materials as simple as possible for teachers has been our first goal with SchoolVID. We have an extensive development roadmap that will integrate many other technologies and continue to focus on supporting teaching and learning.

What is your vision for SchoolVID in the future?

Our vision for the future is really quite simple; provide a great service based on school needs through professional broadcast systems, innovating and testing with schools as needed so that all parties can be the best that they can be.

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Review your school's use of technology and its impact - www.naacesrf.com

The Self-review Framework (SRF) is a cost effective and powerful online tool to support school improvement planning. You assess where you are now and get support through the tool for school development planning. Fully up to date and supported by the inspection agencies including Ofsted and Estyn.

Celebrate your success –www.naace.co.uk/ictmark

The ICT Mark is the Award for schools with good use of technology to support teaching, learning and school administration. Deservedly popular with schools wanting to demonstrate both effective and mature use of technology. Schools use this to drive change and many go onto be outstanding.

Naace
Learning in a connected world

www.naace.co.uk, office@naace.co.uk; @naace, +44 (0) 115 7484362

frontrow

JUNO

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www.soundforschools.co.uk

Q&A Naace

Roger Broadie, Director, Broadie Associates, and member of the Naace Board of Management, has some helpful advice for all decision makers in schools...

VISIT: WWW.NAACE.CO.UK CALL: +44(0) 115 7484362 EMAIL: OFFICE@NAACE.CO.UK

T&I: What is the most important in making technology spend decisions?
RB: Schools use technology in diverse ways. Without a clear vision you can easily buy technology that works really well in other schools but not in yours. The head and senior leadership team have to be really clear what kinds of learning activities they want the technology to improve. To help with this, the Naace Self-review Framework helps schools find the gaps in the use of technology across all the areas of the school's work. The Naace 3rd Millennium Learning Toolbox provides quick and effective ways to establish a clear vision linking technology to the school's teaching and learning imperatives.

Naace
Learning in a connected world

What else is essential as well as buying the new kit?
What the people in the school do with the technology will dictate whether the spend is worthwhile. Research shows that technology used well has huge impact, but used badly is a real waste of money. Schools and teachers become members of Naace to be in touch with the ways education is developing in our connected world. Members join in discussions, get training and learn from each other.

What about the return on investment?
The school's vision states what is most important that the pupils get from technology. Schools need to ensure that teachers develop the way they teach to enable the pupils to make best use of technology. Naace, through the Impact Awards, ICT Mark and 3rd Millennium Learning Award has a huge evidence base on the diverse ways schools get maximum impact. Is it most important for your pupils to be able to collaborate in learning beyond their time in class? Or most need access to the diverse tools and resources available on the internet? Or the chance to put their work in front of audiences to get constructive feedback? Technology can enable all of these, but the choice of which to do first has to be yours.

Q&A JUNO

Irene Rutherford Sales Director - Education PC Werth Ltd has some seriously sound advice for teachers who want to be heard...

VISIT: WWW.SOUNDFORSCHOOLS.CO.UK CALL: 0208 772 2700 EMAIL: IRENE@PCWERTH.CO.UK

T&I: Why should schools be thinking about investing in a sound field system?
IR: Soundfield is a wonderfully simple concept: easy to install and operate, economical in daily use and effective from the moment it is switched on. True soundfield uses specialist speakers and speaker positioning that delivers speech signals equally to all pupils in the classroom, no matter where they sit or what direction they are facing. Frontrow soundfield is the only system with Adapto digital intelligence and Optivoice – clarity of speech at all times – which helps all children hear clearly what they are being taught.

What does JUNO offer that other sound field systems do not?
Juno is the world's most advanced classroom communication tool, combining the convenience of installation-free audio products with sound quality of installed systems – and far exceeding the capabilities of ordinary sound device, with sophisticated voice control, an intuitive lesson capture feature that captures all voice, PC video and whiteboard interaction throughout the lesson for archiving and/or later distribution, and which will also help to reduce incidence of teacher voice-strain

How easy is the system for teachers to use?
Juno is a digital amplification system that is installation-free. One-button design lets you wake it up, mute, and give voice commands to adjust volume and record. The ultra-thin lithium-ion battery makes for a lighter, smaller, faster-charging device. Priori-Teach gives priority to the teacher's microphone by reducing the volume of other devices. With Juno, just one voice command is all it takes to record teachers' speech together with all visuals and media displayed on their active whiteboards.

What can schools expect by way of ongoing support, if they invest in JUNO?
Juno comes with a five-year warranty. PC Werth prides itself on offering on-going support, with lifetime telephone support and regular visits from the regional managers, who are always at the end of a phone for support and advice.

26th-27th February 2015 Manchester Central

education innovation

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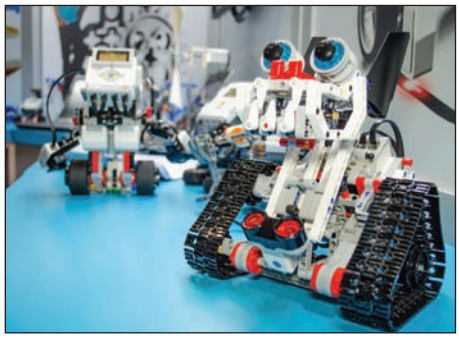

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Education Innovation, Manchester Central: 26th-27th February 2015

FOR YOUR.... CPD

Discover how technology can help you take your teaching skills to the next level...

Tweet wise

Twitter can be an incredibly useful tool for CPD; especially if you take a few tips from social media training and coach Jennifer D Begg (livefreerange.com)...

+ Don't get overwhelmed by your twitter feed. Use a tool like tweetdeck.com or hootsuite.com to separate audiences into columns. For example, have a column following the #journorequest hashtag, another following #ukedchat and one following a list of parents who you know are active on twitter. This is a great way of listening to the community you serve and makes it easier for you to know what they want to see you share – what's important to them?

+Think about who you're trying to engage with and plan your updates around them. If you want to build a community of parents, spend time listening to what they share. When you share things you think will be relevant to them keep an eye on how many clicks you get.

+ Remember your followers aren't sitting around looking at their news feed all day so it's ok to repost the occasional update if you know they'll be interested. Tools like tweriod.com can help you decide what time of day is best for you to share with your audience.

+ Make your life easier – schedule! If you're reading an article that you think your audience would find interesting, use Google Chrome extensions for Hootsuite to just click and share. A tool that can help you is feedly.com. I use it to follow Education Guardian, TES, SecEd and other publications without having to go to each website seperately – on my phone too!

+ Use tools like trendsmap.com to see what people are talking about on twitter in your area, especially if you want more local community engagement

+ Find out what people really like by keeping an eye on which of your tweets they click on / respond to and RT. If that's not happening for you, go back to listening. Retweet, and reply. I understand that you won't always have time to do this but trust me, it will lead to a much more powerful and fulfilling twitter presence and relationships, especially with your followers.

82%

of teachers regularly work more than 10 hours per day

(source: knewton.com)

CLASSROOM SNAPSHOT

Mat Pullen, of the City Academy, Bristol, has been using the commenting facility in Google Drive to great effect on iPads in his BTEC PE lessons. He has created a system where department documents are stored online on Google Drive, which all members of his team can access to update and comment on. He has also shared these files with his pupils across various classes, who can read and copy them.

When a pupil completes an assignment, teachers (and pupils) can comment on the work. Teachers are able to respond to pupils' work quickly and efficiently on their iPads when on the move. The benefit for the pupils is that they can immediately see what progress they have made, note any improvement they still need to make and whether or not they have passed specific sections of their BTEC assessments.

Extracted from Perfect ICT Every Lesson, Mark Anderson (Independent Thinking Press, £9.99)

Turn it AROUND

Keen to flip your classroom, but unsure of how to go about it? Take some tips from two teachers who are already reaping the benefits of this innovative classroom approach...

It's a phrase that's heard with increasing frequency in educational circles... but what exactly is 'flipped learning'? Well, if we look at it in its most simplistic form; where technology allows teachers to impart information to students outside of the classroom so that face to face time in the class can be spent more meaningfully, then it is clear that more and more of us are already adopting this approach in our classrooms. Moreover, a large number of teachers who don't are nevertheless very much in favour of it, and simply unsure how to go about putting it into practice.

Often translating an ideology into practice in the classroom can prove to be a real stumbling block, which is why TS has spoken to two teaching professionals at Droitwich Spa High School in Worcestershire who have successfully flipped their classrooms, to find out how they went about it and pick up some practical tips and advice for anyone hoping to do the same.

Danny Hilditch is a senior leader responsible for SMSC and ethos, and Charlie Tubb is head of religious studies. Both teachers work at Droitwich Spa High School – a larger than average secondary with a sixth form, which converted to Academy status in July 2011 and serves the town of Droitwich Spa and its surrounding villages. The school as a whole has not adopted flipped learning, although the two teachers are fully supported by the head teacher and other colleagues are beginning to explore the idea.

TS Why did you decide to use this approach?

Danny: As part of my responsibility for SMSC and ethos in the school I am focused on development of students and I find that reluctant learners or those who are disruptive often believe they lack the knowledge of some of their peers. I had read lots of studies from the USA about how flipped learning can help to eradicate such behaviours by enabling students to come in to the classroom on an even playing field.

The idea is that the students are given the basic factual information about a subject or topic in advance of the lesson so that when they arrive in class they already have a knowledge of the facts. This means that contact time with the teacher is more about helping them to develop a deeper understanding, along with the skills they need to embrace the subject.

So about five years ago I began to gradually introduce aspects of flipped learning into my lessons. Just slowly at first, by preparing simple audio podcasts for the students to listen to in advance of the lesson and using them to stimulate a discussion.

Charlie: I had always taught lessons the way I was taught – I delivered the content, the pupils asked and answered some questions on the content, usually answering the same questions, then they did the same homework.

I realised that what I was doing was what most teachers do, teaching to the 'middle of the room'. But this approach prevented me from talking to every pupil, individually, in every lesson, which is what I knew I needed to do to get the best out of every student.

I spoke to Danny about 'flipping' learning and how we might be able to use technology to help." I then did some research and read the Jonathan Bergmann and Aaron Sam's book Flip Your Classroom: Reach Every Student in Every Class Every Day which I would recommend to anyone thinking about giving it a go.

TS How did you go about introducing it? Do you create your own podcasts or use existing material?

Danny: I researched some options for simple technology solutions to create podcasts and realised that it was a simple process. Record a sound file and upload it to the internet.

There are some simple to use, both free and paid for software programs available, such as www.showme.com and www.audioboo.fm which enable you to make simple podcasts that the students can download on to their own devices. And should you still feel unsure of producing your own material, some high quality content is ready available. As a school we subscribe to www.gcsepod.com helping teachers who want to introduce flipped learning but don't have the confidence to produce their own material, could use this ready-made content.

Charlie: I quickly realised there was little ready made material available for Religious Studies, but this wasn't a deterrent for me as I wanted to ensure that my material was personal and opted to use Camtasia Studio – so that I could actually record myself. This really makes the pupils feel that it is me who is teaching them still – and they like that!

TS How does it shape your lessons?

Danny: It by no means replaces the teacher which has been widely misreported. Flipped learning for me is about getting the most out of my time with the students. Traditionally teachers spend lesson time disseminating the facts and then set students off with more in depth problem solving as homework. They often struggle with this and don't have their classmates and teacher to turn to when at home. I found that pitching the challenge at the right level for all students at home was a tricky thing to do. Some students would produce great homework assignments, some would go down a long road the wrong way which I would have to correct in the next lesson and some would struggle, give up and make up an excuse when they returned.

I decided to turn this approach on its head and use technology to provide student with the facts before they come in to my class so that I can quite quickly establish knowledge levels giving me more time for interaction and personalised contact time with the students.

TS What sort of response have you had from the students?

Danny: The response has been hugely positive and I believe we have created an environment where students are more engaged and take responsibility for their own learning. By quickly ascertaining knowledge levels at the beginning of lessons through Q&A sessions, mini tests or just simply asking students to tell you what they know, the different knowledge levels amongst the students it is easy to design appropriate classroom activities which in turn helps the students to learn faster and more efficiently.

Charlie: Response from my students has been mixed; pupils who want to fly love it, some fly too fast and have to be reined in, whilst others don't like it as it requires them to really take ownership of their own time and learning. It is very different and often not what they are used to. Many, however, come to love it after overcoming initial resistance.

TS What benefits does it bring?

Charlie: It helps to create independent learners. Pupils have to be responsible for their own learning and can no longer 'play school' in my lessons – jumping from test to test without being involved in their learning.

Danny: It allows you to spend more time teaching to a higher level with every student. From a personal perspective, I feel I have more free time outside of school hours as my preparation is very much front-loaded and I create my podcasts in the summer holidays so that my lesson preparation is more or less done for the entire year.

TS What do you think stops more teachers from taking this approach?

Charlie: Fear!

Danny: Yes, fear of the unknown is most definitely the main reason but there are some practical obstacles too. ICT skills and reliability of internet connections can create uncertainty too. Personalised content is the Holy Grail but existing material such as GCSEPod can be easily and effectively used and indeed many of our staff and students use these easy to access resources to support learning both at home and in the classroom.

TS What advice would you give to teachers considering flipped learning – do you have any top tips on how to make it work?

Charlie: Students are all different and all want different ways to access the information. Some like the videos and love the way they can pause and rewind, whereas others prefer to simply listen and others (more than I thought) just like to read text – so no one style suits all.

Before you give it a go:

+ Read Bergmann and Sam's book
+ Flip a class to start with! Analyse their responses and take on board what they say
+ If it is for you – and you want to flip more – prepare all resources in advance – it might take you a long time but you will be glad you did!
+ If you make your own videos/podcasts – don't make them too long. I find about 5 – 10 minutes to be the best
+ Don't think it's a 'cure all' for all educational problems – it isn't. Teaching is all about relationships, though, and flipped learning can advance and help this.

96% **of teachers who have flipped a lesson or unit would recommend that method to other educators**
(source: sophia.org)

Development plans

If you're not already using the internet for CPD, you're missing out on some fantastic collaborative opportunities, says **Dr Nicola Davies**...

To fulfil their role as educators, teachers are being encouraged to enhance their professional development by accessing internet-based knowledge and expanding their online network. Social media such as Twitter, blogging, and online communities, in particular, are valuable resources for CPD. They encourage discussion and provide teachers with access to resources and contacts they wouldn't otherwise be able to utilise.

"The best teacher CPD comes from learning communities," says @MyPEExam, Assistant Principal and PE teacher, "and Twitter is, perhaps, the best current example of this. I have received more CPD in the past year on Twitter than I have during my entire sixteen year teaching career via any formal development sessions."

Simon Warburton, Deputy Head Teacher at Hitchin Boys' School, concurs. "I use Twitter daily," he observes. "I can use the #SLTChat to communicate with UK-based school leaders, #Scichat to communicate with science teachers and a whole host of other hashtags such as #edchat and #ukedchat." In the Twitter world, hashtags are keywords or phrases prefixed by a # that allow users to group messages according to topic. "From the comfort of my own desktop/phone/tablet," elaborates Warburton, "I can develop a thought with tens of thousands of experts into a kernel of a great idea, or I can repay the favour by developing someone else's thoughts."

Rachel Jones, an e-learning coordinator and teacher of classical civilisation and computing at King Edward VI School in Southampton, even found her current job on Twitter. She says, "I have no doubt that my CPD activities online have made it possible for me to pursue new opportunities in teaching. I have built my confidence to speak at events, and to be a much more active participant as part of a reflective community."

Thomas Bennett, who teaches philosophy and religious studies at Raine's Foundation School, East London, adds, "Twitter has been a platform that has enabled me to reach an online community of thousands, most of whom I would never have the chance to meet in real life. It also allows instant outreach to people in high status roles in a way that breaks down traditional avenues of access."

Like Jones and Bennett, Warburton credits Twitter for many of his recent achievements, including writing his own blog and getting involved with Google Apps as a learning environment. "This led me to becoming a Google Certified Teacher with the Google Teacher Academy," he explains. The Google Teacher Academy is a free global professional development event for educators, where teachers gain experience with Google tools, instructional strategies, resources, and access to a supportive community.

If all of this doesn't tempt you to embrace online CPD, maybe this will. "My blog and Twitter resulted in an invitation to write for the Guardian Network," says Warburton. "I have also presented and attended teachmeets – informal gatherings where teachers can share their insights and innovations – and I have taken part on an advisory panel for teacher recruitment."

What next?

While social media is currently the most popular technology-based CPD, more formal CPD portals are the next step towards online professional development. The Open University (OU) is at the forefront of developing such online portals, providing specialist-led learning platforms that allow flexibility for busy teachers.

One example of an online portal set up by the OU to aid teachers in their CPD is the Vital project – a portal on the OU network through which teachers from subscribed schools can learn a range of IT skills. Additionally, in collaboration with Trinity College London, the SoundEd CPD Programme has been created. Here, music teachers can join interactive workshops and other e-learning courses. The program also provides access to a number of forums, articles, and music resources.

Technology-based CPD is here to stay and is likely to become a vital part of teachers' personal and professional development. As Bennett says, "Technology can potentially revolutionise CPD, as long as the personal, face-to-face element of learning isn't ignored."

"Teaching is like having two separate careers," points out @MyPEExam. "First you learn to cope and then excel in the classroom before leaving the classroom behind and learning to manage. IT allows us to blur the lines of this transition, making CPD resources available to everyone at every stage of their career."

ONLINE CPD RESOURCES

Edutait - an education/CPD blog: edutait.co.uk/education-blog
Teacher Toolkit blog - CPD webinars and other resources: teachertoolkit.me
Going beyond CPD, LinkedIn group: linkedin.com/groups/Going-Beyond-CPD-Developing-outstanding-4316385
The Guardian Teacher Network - resources, CPD opportunities and blogs: theguardian.com/teacher-network
Pedagoo - an online community for teachers: pedagoo.org

ABOUT THE AUTHOR

Nicola Davies is a psychologist and freelance writer with a passion for education. You can follow her on Twitter (@healthpsychuk) or sign up to her free blog: http://healthpsychologyconsultancy.wordpress.com/

How to be a PowerPoint SUPERHERO

It gets plenty of bad press, says **Glen Gilchrist**, but add creativity and ambition, and this standard presentation tool can result in some exceptional teaching...

When I started in the classroom you could just about still find a Banda machine lurking in a reprographics room, huddling under boxes of OHP acetates and carbon paper. Around 10 years ago, though, things started to change. I remember how we rejoiced when we had a Bromcom wireless register system installed and we were freed from the tyranny of paper mark books. Eight years ago, laptops for staff were unveiled as an "aid to productivity and communication" – we finally had email addresses! We felt like genuine educational superheroes.

But, with great power comes great responsibility. Little did we know that lurking inside these devices would be pedagogical kryptonite, able to sap the strength from the most well planned lesson; PowerPoint – or more accurately, the ill-conceived, superficial manner in which this powerful tool is often used – is in my opinion responsible for more 'non-learning' than any other well-meaning education intervention or technology.

PowerPoint was conceived as a business tool, replicating the linear nature of OHP acetates. And boy, us educational superheroes loved OHPs. Like Batman's endless gadgets, OHPs. We could sit at our desks and teach sitting down; we could use different colours; we could 'borrow' other teachers acetates. Companies even sold them, pre-made to support the curriculum.

So we did what most early adopters of technology do: we took our existing practice and 'techied' it up. We simply replaced OHPs with PowerPoint.

Little did we realise, that when you reduce pedagogy to bullet points - you tend to fire blanks.

So, fellow superheroes, it's time to regroup and revitalise our PowerPoint pedagogy; starting with these four, simple rules:

1 Ditch the bullets The number one top PowerPoint tip is to stop using it as a presentation tool. No slides of bullet points or canned information. Instead, think of it as a container to hold your granular lessons resources – and you craft the 'presentation' as a response to learner feedback.

Slides comprised of embedded images, audio/video clips, photos of student work, experimental apparatus and prepared questions (not answers) all make for a far more interactive and enriching experience than pages of text / bullet points.

2 Embed rich content Once you get into the mind-set that PowerPoint is a container for rich content the sky is the limit.

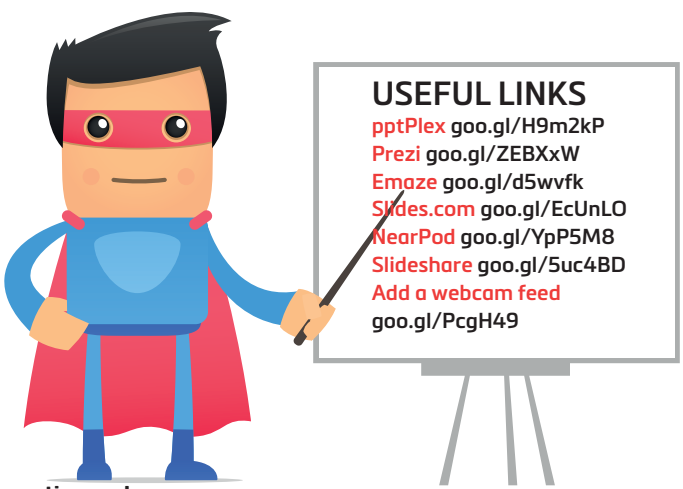
a) Add a web cam feed to another class, experiment demo or make a 'bird box cam'.
b) Add an interactive poll to get class feedback via iPads, tablets, laptops and even texts.
c) Add a web site to a slide. Useful to bring Google, Bing, padlet, Office365 – in fact any website – inside your presentation.
d) Add a noise meter or clap-o-meter to judge a completion or background noise
e) Create nonlinear, branching presentations with pptPlex (like Prezi)

3 Consider the alternatives Importantly I don't mean a feature equivalent tool such as KeyNote or OpenOffice – go for interactivity instead:

a) Try Prezi, which offers branching presentations, embedded media and web access.
b) Emaze is more linear than Prezi, but simpler to use and visually appealing.
c) Slides.com is designed to make more traditional presentations in HTML5 format – which means that they work well on most platforms.
d) NearPod allows you to control a presentation (with embedded images, videos, web links, quizzes and feedback) from an iPad, android device or laptop and to synchronise the viewing across multiple devices.

4 Present properly Finally, if you really, really must use PowerPoint to present, follow these guidelines:

+ Three Bullet points using text in font 30
+ One slide per 10 mins of lesson
+ High contrast colours (white/yellow) on (black/dark blue)
+ No Comic Sans. Ever.
+ No transitions / spinning text / typewriter special effects
+ Frame each slide with your WALT / WILF
+ Share your PowerPoint on Slideshare so everyone can access it before / after the lesson
+ Update your slides regularly – no canned lessons please.



ABOUT THE AUTHOR

Glen Gilchrist is the Secondary Science Advisor to Central South Consortium. He is working on delivery of the Welsh Government's "Qualified for Life" project, tasked with raising the standards of scientific literacy for all learners. Find him at glengilchrist.co.uk and @mrgpg

Try, try again

Tom Starkey has some advice for teachers who are increasingly (and understandably) hesistant when it comes to experimenting with new technology in the classroom...

I have a fairly ambiguous relationship with technology at times. At this moment I have 12 ongoing vendettas against a series of rogue printers and I currently hold the national record for standing underneath a projector and pressing a button with a remote control with no result (3hrs and 22mins – now that's dedication). Having said that, I love things that make my life and the lives of my students easier; technology has a funny old way of doing that.

A lot of the more zealous promoters of technology in education seek to frame teachers who have doubts as luddites who want nothing more than to hold their students back from the 21st century. It's a fairly ridiculous assumption usually made by those who don't spend an awful lot of time in front of kids. I've been a teacher for ten years and I completely understand the hesitancy. Tech can be unreliable, inaccessible and it's often the case that schemes from on-high with paradigm changing intentions often turn out to be completely unworkable in the classroom. For a frontline teacher this can often lead to 'tech fatigue' and an unwillingness to try something new due to past experience dictating that it will probably turn out to be a massive pain in the server.

Then again, this same hesitation could be stopping you from finding an app that'll save half an hour's marking time every night or a website that'll go some way towards getting a disparate group to engage in romantic poetry. The benefits can be absolutely massive. So I thought I'd put together a few hints and tips that I've learnt during my time as an educator who simultaneously loves technology but also worries about the upcoming cyborg takeover:

ABOUT THE AUTHOR

Tom Starkey is a teacher in a FE college in the north of England. He blogs at stakofmarking.wordpress.com

Find things yourself

Being told by others to use tech in the classroom that you know isn't right for the environment or the students can be massively frustrating. One of the ways that you can combat that sense of frustration is by finding things that work yourself. A well-phrased internet search for an hour on the weekend may be all you need to get your hands on an app, game or piece of equipment that's truly useful to you and yours. You're the expert in your class; you know what's best for them – see if you can find it. And if you can't...

Ask around

You don't know what you don't know, right? You may have an inkling that there's something out there that would be really useful but you're damned if you can find it. Or if it even exists. This is where social media comes in. Now, I know that this is a piece about being hesitant with technology but platforms like Twitter are a great way of asking people who may be a lot more clued up than you are. I liberally nick a couple of good ideas a day and people don't actually seem to mind. If you can be a bit brave about it give it a go – it's like a staffroom of millions (but without those tea cup ring stains on every available surface).

> "I liberally nick a couple of good ideas a day and people don't actually seem to mind..."

Give it a chance

So you're made up with yourself because you're going to use an online note board to collect feedback from the kids and put it up on a big screen. Pretty snazzy right? Only it doesn't work. At all. And you're stood there in front of them like a complete lemon. The first (perfectly understandable) reaction is to swear off all classroom technology forever, throw the PC out the window and go and live in a cave.

Or...

You could tweak things a bit and give it another go. Bring the students in on it. Tell them that there might be a chance that it'll all go to pot but let's see what happens. Ok, this might take infinite patience but the end result could well be worth it. Just because it doesn't work now doesn't mean it will never work. However...

Don't waste your time

There are only a two questions you really need to consider when using technology in the classroom. 'Does it help me?' and 'Does it help them?' If the answer to either is 'yes' then it's worth persevering. But if you've given it your best shot and it's still not going to plan then don't bother carrying on – life's too short. There are hurdles out there and if the hurdles get too big to get over without some form of rocket pack then just walk away. There might be something else, just around the corner that really does work.

Assume nothing of the kids' knowledge of technology

The 'digital native' myth has been a harmful and pernicious little theory that has had swathes of seemingly sensible adults believing that every kid out there could hack into NORAD in their break time because they knew how to take a selfie and send it to 'Fit Kyle'. This, of course, is utter, utter tosh. Familiarity doesn't mean skill; sometimes the kids might know a bit more than you and sometimes they won't. Think about who you've got in front of you when you introduce a new bit of tech. Try to visualise some of the problems that might occur in its

use and then see if there are any simple ways to overcome them. A bit of forethought can mean that a class doesn't come to a crushing halt because the web address for the site you want the kids to use is so random that most of them type it in wrong and spend the next 10 minutes huffing 'because it's broken'. Spending a bit of time thinking it through means a greater chance of success and greater success means less hesitancy next time.

Mix and match

So what do you do if there isn't one thing to solve your problem? Well, a combination of different technology can sometimes offer a perfect solution. Padlet coupled with Google Docs could go some way to resolving your revision materials nightmare. A Wordpress blog in partnership with a text-to-speech app could help that reluctant writer who has a visual impairment. The possibilities are endless but this in itself can be extremely daunting. So...

Start with the problem, not the technology

There's no point spending hours looking at the next new shiny thing in ed-tech and wondering if it will be applicable in your classroom. The classroom should be your starting point. Identify a specific problem or a specific student that may benefit and then look for technology that might help. That way it's easier to disregard the sheer volume of products out there because you'll always be focused on student need.

Share the good stuff

If it works and it goes well then tell someone about it. I know teachers have a seemingly built-in capacity for modesty but if something works for you get it out there. Not only might someone else find it useful but a little bit of praise and validation does wonders for your motivation and might want to make you find other things that'll help you in the classroom. Also, once word gets around you'll be surprised at how quickly others will start coming to you and asking for your advice. Then you'll get to pretend like you know loads about it, which is my favourite bit.

So there you have it. A few quick pointers that'll hopefully steer you in the right direction. The bottom line is that technology is a tool that can help you do your job. Keep that in mind and you won't go far wrong. I'm off now to see if I can't get my staffroom printer to work. Now, where did I put that sledgehammer?

Let's get IT RIGHT

Technology can definitely make for better teaching and learning, says **David Morgan**, but there are a few traps you need to avoid...

As we move out of the world where technology is a novelty, it is really important that we minimise certain mistakes in its usage that could actually turn students off to the content that we're trying to teach.

In my experience there are five common errors made when trying to use technology in your practice that can have disastrous impact on your lessons, but which – happily – you can avoid with ease...

1 Not having ambition

One of the most disappointing things that a teacher can do is lack ambition in technology use in his or her classroom. I'm not expecting all educators to be wearing Google Glass and looking like they're in Minority Report when they stand in front of a group of students, but what you should avoid at all costs is the 'now do a PowerPoint' lesson.

When you teach and use technology, why not have lofty goals? Expect more out of your students that even you, yourself, could produce. After all, they have more time on their hands than us to create amazing end products.

If your lesson revolves around 'doing a PowerPoint' then students are not going to be engaged by the technology alone – it's old hat to them. Let's put a stop to it and allow them to create the wonders that modern technology allows.

2 Not planning for failure

When you're in the middle of marking and your pen runs out of ink, what do you do? I'd hope that a spare pen, pencil or the like

ABOUT THE AUTHOR

David Morgan (@lessonhacker) is a moderately internet-famous teacher who excels at pedagogy and everything digital; he is also the author of Stop Getting I.T. Wrong! (lessonhacks.com, £9.99)

would be at hand. In the case of tech this isn't always the case – it's difficult to recover from an enormous technical failure; especially if you're in the middle of demonstrating something to a class of expectant children and the power dies.

Teachers who don't have a backup plan to work from if the tech goes south almost always can be seen on the telephone to the technician whilst their classes catch up on the latest gossip.

So plan for 'epic fails'. What is going to happen in your lesson if the computers don't work? Make sure you've got a second strategy, an offline 'go-to' just in case, because the very worst thing you can do in a lesson is wait for the IT guys to come along to fix things – you'll lose your class' attention almost instantly if they have any downtime.

> If your lesson revolves around 'doing a PowerPoint' then students are not going to be engaged by the technology alone...

3 Abandoning tech because it's 'hard'

Let's face it. You're probably not a computing teacher, so you may find some of this technology intimidating or confusing. Well, that's not an excuse to abandon it. And it's definitely not a reason to still be lugging a ton of books home every night when you could do it all electronically and save your aching back.

Any big change will be difficult initially, because it involves having to do something different. If that something is key to your effectiveness as a teacher it can be daunting to change, but change can sometimes be for the best. You'll never know if you don't give it a go – and a reasonable one at that.

Even when you're using a bit of tech in the classroom with your students there's an overhead in terms of having to actually teach students how to use it before they can incorporate it in their learning. So if you're having to teach a bit of software anyway, then why not get a good return on your investment?

Use the same tech three or four times, at least, which means that students stop asking you how to use it, and ask you what to use it for. Trust me, it will stop becoming 'hard' in just the same way that joined up writing stopped becoming hard for the students in junior school.

4 Games as a reward

If you're in the habit of letting students spend time on their favourite flash-game website if and when they get their work done, then you're doing something wrong.

I've got nothing against games, they can be a great learning tool, but when they're used as a short-term reward it causes low level Pavlovian conditioning of the students that is detrimental to their learning. Imagine the long term implications of this, where a young person is driven to complete a piece of work as quickly as possible just to get on games. Picture a world where students fire up games in your lesson because they're 'finished' and simply haven't asked you what to do next. Do we already live in that world?

We need to combat this. Unless you have a genuine, pedagogical reason for gameplay in your lessons avoid it at all costs. Students need to associate technology with work as much as they do with play, and we need to contribute to that. Quite simply, do not allow students to play games regularly as a reward for finishing their work. Not ever. Not even once.

5 Doing too much, too soon

I once had a year 13 student ask me, exasperated, if "we could just do things on paper today sir?" I had fallen into the trap that many enthusiastic teachers do with technology: I'd used it too often and in too many varied forms.

You might be like me, always excited by something new appearing on twitter and with an ever-lengthening list of apps and tech that you'd love to use in the classroom – but students can get technology fatigue, especially if you're jumping between tech from lesson to lesson. We know learners like consistency, so why then would you continually bombard them with new techniques and platforms?

What you need to do is pick specific examples of software and hardware that you really want to use, and use them consistently. Every new technology choice comes with an overhead of teaching how to use it, so by being selective you can improve teaching and learning on a larger scale and avoid the 'novelty' effect being the sole reason for using technology in your lesson.

In short, we shouldn't expect every lesson to be an all-singing, all-dancing, digital learning machine. Technology is just one more piece of your teaching arsenal; it's there to be used just as paper, pens and books are.

One day soon, I fervently hope that we'll stop talking about 'digital learning'. It's always just 'learning' – regardless of the skills and equipment you utilise to get the students doing it.

That's the attitude that embeds tech properly in your teaching and stops you making the mistakes that turn learners off to the content you're trying to teach.

We're all teachers of literacy. We're all teachers of numeracy. Maybe we all need to be teachers of technology too?

Naace prepares schools for the new computing curriculum

Naace
Learning in a connected world

Naace have developed a new series of professional development training events to help guide schools through the new computing curriculum

Naace's **'Getting to Grips with Computing...'** series looks at a range of topics; from introducing the new curriculum; what does it mean for schools?, through to providing teachers with the right knowledge to implement it successfully, using various tools such as coding and physical computing.

Naace's **Self-review Framework course** provides support for schools who are progressing through this framework with the aim of achieving the ICT Mark accrediation.

The **Naace annual conference** in March 2015 is the cpd event for teachers and educators with inspiring keynotes, practical breakouts and teach-meet style sessions as well as invaluable opportunities to network and share experiences.

For details of all Naace cpd opportunities, please visit www.naace.co.uk/events

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COMPUTING AT SCHOOL

EDUCATE · ENGAGE · ENCOURAGE

In collaboration with BCS, The Chartered Institute for IT

Computing At School (CAS) is the Subject Association for Computing Teachers, a free membership organisation for those interested in promoting computing in a school environment.

From September 2014 ICT/Computing teachers will be teaching the new programme of study for Computing. If you are looking for support, training and resources to help deliver the new curriculum then join Computing At School! A nationwide network of teachers and professionals committed to supporting Computing and especially Computer Science in the classroom

We can help you!

CAS Membership offers access to an online community of like-minded individuals sharing discussions on forums, access to CPD events, and face to face regional Hub group meetings. Join us now!

www.computingatschool.org.uk

Q&A Naace

Naace's Tim Scratcherd has advice about delivering the new computing curriculum...

VISIT: VISIT: WWW.NAACE.CO.UK CALL: +44(0) 115 7484362 EMAIL: OFFICE@NAACE.CO.UK FOLLOW: @NAACE

T&I: What's so special about Naace's approach to CPD?
TS: Naace professional development events are special because they are strategic – they address not just how to do things, but why. They empower delegates to take away tools and ideas to adapt and implement in their own schools. They draw on national and international expertise, and are interactive – Naace acknowledges delegates' different starting points and varying needs and expertise is then shared. Support is provided before, during and after the event through blended components such as event communities and the provision of supporting resources.

How can you support teachers in delivering the new computing curriculum?
In addition to Naace events and training courses, we also have provided information via our website. The site includes Naace's curriculum framework, guidance, schemes of work criteria and a guide for both primary and secondary school teachers. There are several documents which you can download at naace.co.uk/curriculum.

Are you able to answer individual teachers' questions about the computing curriculum?
Naace events are interactive and we encourage delegate participation. Any specific questions raised by delegates are answered and if needed, further support can be offered. We are also launching a new helpdesk for the autumn term to assist teachers with any questions, including those related to the new computing curriculum.

Are there any events coming up that teachers should be especially aware of?
Naace has developed its 'Getting to Grips with Computing...' series, which will focus on various aspects of the new computing curriculum, from introducing and understanding the new curriculum, to providing useful information and tools to deliver and implement the curriculum successfully and how to successfully use physical computing in the classroom. We also have our annual conference in March 2015 – an event not to be missed by anyone with a passion for advancing education through the use of technology. It's a great place for teachers to hear inspiring keynotes, discussion panels, take part in practical breakout sessions and teach-meet style sessions, as well as share ideas and experiences with their peers. Find more details at naace.co.uk/events.

Q&A COMPUTING AT SCHOOL

Simon Humphreys, Computing At School's National Coordinator, shares CAS's vision...

VISIT: WWW.COMPUTINGATSCHOOL.ORG.UK EMAIL: INFO@COMPUTINGATSCHOOL.ORG.UK

T&I: Why was CAS first established?
SH: The Computing At School group (CAS) was born at Microsoft Research Cambridge, in 2008. Our goal was to establish computer science as a rigorous, high status school subject discipline and to build a network to support teachers. CAS is a grass-roots group of individuals, not of institutions or companies. Membership is free, is open to everyone, and includes teachers, parents, governors, exam boards, software professionals, members of professional societies, and university academics. We are a collaborative partner with BCS, The Chartered Institute for IT through the BCS Academy.

What are the benefits of membership?
CAS is a truly remarkable community, with participation from experts in the fields of computer science and education willing to support us all as we embark on the new curriculum. We have 13,500 members and growing, and over 100 local hubs, which are face to face, teacher-led groups aimed at supporting classroom professionals. Our community website has 2000 member submitted resources and lively discussion forums. Our termly newsletter (SwitchedOn), is packed with practical articles and lesson ideas from teachers to inform our practice. And there's a whole lot more!

What would CAS like to see happen in schools over the next five to seven years?
We want to see Computing grow and flourish in all schools – our journey has just begun! Already, Computing is a National Curriculum subject, Computer Science has EBacc status, and there are teaching scholarships for new graduates. This is great but our goal remains the same – supporting teachers with training and resources in both subject knowledge and pedagogy. We have launched the Barefoot project (with BT) to help primaries prepare for the new curriculum and also Quickstart Computing (with Microsoft). These projects will develop high-quality, practical cross-curricular resources to support primary and secondary schools to help get them started.

Tell us about the Network of Excellence?
The NoE is both a network of professionals working together and a wide-reaching programme of professional development, based on building communities of practice that includes local, face-to-face, peer-to-peer training. Good professional relationships between supportive peers underlie the best and most effective CPD and this is provided in the NoE through our growing network of Master Teachers, for both primary and secondary, with active support from our universities. The NoE has over 1000 registered schools and over 200 Master Teachers available to run courses and provide much-needed advice, guidance and support to schools in their area.

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A question of confidence

Teacher awareness of tablets is decreasing: can this be true? The 'Tablets and Connectivity' research recently released by the British Educational Suppliers Association (BESA) certainly suggests that this is the case.

"The headline finding of the research was as expected," says BESA director Caroline Wright. "The adoption rate of tablets and apps in schools continues to rise. However the finding which was a surprise was the decreasing level of awareness of the technology; taking secondary school respondents as an example, 18 per cent fewer secondary teachers stated that they had a high awareness of the technology. Surprising, until we look at the normal technology adoption life cycle, which shows that for the first few years of using any new technology there is a slow increase and then a sudden decrease. Once teachers begin to realise that the potential for the technology's usage is far greater than they anticipated or had experienced, they feel less confident about their capabilities and knowledge.

So it's full steam ahead for tablet technology in schools, but there are still barriers to overcome in terms of adoption.

"90 per cent of surveyed schools gave funding and budget allocation as the main barrier to their adoption of tablets," confirms Wright. "Other reasons considered to be a significant obstacle included the management and security of the technology (85 per cent). To a certain extent, these hindrances could be applied to investment in any product, however in the case of tablet technology the high placing of management and security as a barrier to procurement, is specific to mobile technology and something that schools and suppliers must consider. Overall, though, the outlook for the technology appears to be very positive and certainly when we consider the teaching opportunities realised by mobile technology the future is very bright indeed."

39%

of secondary schools have wi-fi in "only a few or no classrooms"

(source: bbc.co.uk, Feb 2013)

CLASSROOM SNAPSHOT

There are often many 'untapped' learning spaces in schools, such as blank walls. At Clevedon School in Bristol, plasma screens were installed around the site as information points for pupils. The subject leader for art, Kelly Hawkins, sees the screens as an opportunity for an added learning space and has created a series of PowerPoint presentation slides. Each slide is branded with a consistent layout: on one slide she includes information about an artist of the week, and on the other slide an art-related word of the week. These slides are then displayed on the various plasma displays around the school. In this way, Kelly is using ICT to extend the learning for her subject area outside of the classroom. Learning is taking place across the whole of the school landscape and she is reaching pupils who may not even study art.

Extracted from Perfect ICT Every Lesson, Mark Anderson (Independent Thinking Press, £9.99)

IT AIN'T WHAT YOU GOT...

Technology is key to progress at Neale-Wade Academy, says Director of Digital Strategy Andrew Field – not least because everyone understands exactly why it's being used

I am privileged to be part of the extensive progress at Neale-Wade Academy in March, Cambridgeshire; a school I've worked in since I was an NQT in 1999. The school became an Academy with the Active Learning Trust in April 2013 under its Principal Jason Wing, a former Neale-Wade student himself, who also played professional rugby league and represented Great Britain in the Winter Olympics.

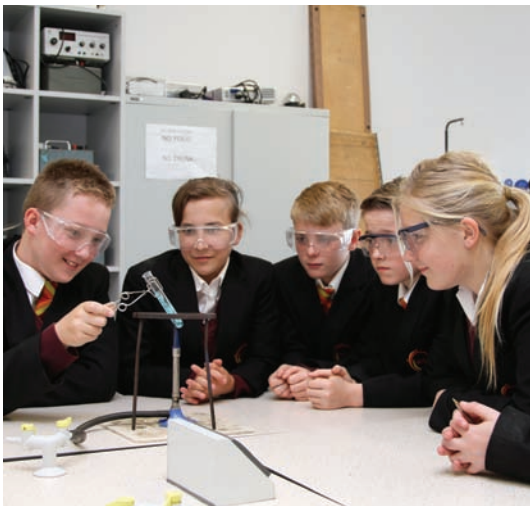
My role as Director of Digital Strategy encompasses being Head of Faculty for Business, Computing and IT, together with supporting colleagues to make effective use of technology for learning and helping to coordinate our technical support.

The ethos of Neale-Wade is clear:

> "Technology is as much a tool for learning as is a pencil case..."

supporting every student to make the very best of him/herself within a challenging learning environment that encourages high expectations for success. It is about an extensive focus on progress over time, effective feedback and outstanding learning.

Technology has a huge role in the growth of attainment at the Academy. Yet this is not some vague notion of '21st century learning'. Instead, it is about the effective use of technology in the most appropriate ways and times. Combined with a whole range of improvements at Neale-Wade we expect to see a 22% rise in results since converting as a result of a rigorous re-focus on teaching and learning.



In their own hands

One prominent feature this year has been the use of students' own devices. BYOB (Bring Your Own Browser) encourages students to make effective use of their own technology. The behaviour at the Academy means that students are willing and focused on their learning ensuring that, under direction from their teachers, they can access information, apps and online tools. The focus is strictly on the learning, not the technology.

We are fortunate to have an effective wi-fi cloud that covers the entire Academy site. This means we can provide students with both a safe and secure connection but also a significantly faster connection than on 3G. Thus students have the incentive to log in to the school wi-fi, which then provides us with the security and ability to restrict access should we have any concerns. Each student uses his or her network login to access the wifi. E-safety is also of critical importance and I see a major part of my role as ensuring that all students and staff are not only aware of the positive impact of technology but also of the potential implications. Everyone at the Academy knows what to do if faced with any e-safety concerns; there is no place for any form of complacency.

Every second counts

In any day at Neale-Wade both students and staff will have numerous positive encounters with technology. In addition to computer suites and access to laptops, the real power is in allowing use of devices. Daily this could include anything from research in a lesson where they previously they would have had no access to devices at all, to permission to take a photo of a resource on the board or instructions for a task, to recording a performance or explanation to review and revise outside of the lesson. All participants, staff and students, are determined to make every second count, and technology has become an integral part of what we do. The rigorous monitoring of attainment and progress through tracking and reporting tools such as Go4Schools, together with our weekly Principal's and students' blogs, all are technology-driven, but with everything focused on student attainment. Simple pieces of hardware such as docks in every classroom mean that when teachers move between learning spaces they don't have to mess around with wires and settings; instead they are able to dock their laptop and are ready to begin teaching.

For example, within a Computing lesson we gather student feedback using Socrative. The teacher can set up an open answer survey and this allows us to gain immediate student feedback on specific activities during the lesson. My personal favourites for this include asking students how they would have taught the lesson better and to identify aspects they feel they have mastered together with areas where they need more help. This is using technology to foster more effective learning. As they can complete these surveys on their own devices I gather particularly personalised feedback, and students' learning has evolved to enable them to be confident to share uncompromising thoughts about what they require to improve the quality of their work.

Again – this time within English - colleagues use 'Today's Meet'; an online message board that the teacher can set up at the start of the lesson to gather a stream of thoughts from the class. This can be used in a multitude of ways. For example, in English Literature it can be used to gather ideas about a character. Students may be asked to read a page and then suggest three pieces of evidence to support a point of view. The power of this is in the interaction of the entire class and collaboration of ideas. Anonymous contributions allow freedom of expression and encourage reticent learners.

Next steps

Reflecting on what we have learned so far, some of the findings are obvious. Technology is as much a tool for learning as is a pencil case. Giving students technology without thought into the practical application is a waste of resources and time. Our focus on encouraging students to use their own technology is working because it isn't any form of quick fix or over-the-top gimmickry. Rather it is about putting learning and progress at the forefront of everything that we do. It concerns embedding technology into standard lessons without fanfare or showing off. Students know that if they ask permission they are allowed to make effective use of their browser.

This is only the start of the process, and we are constantly looking for new ways to innovate and implement further ideas and findings, as well as sharing our own with the wider education community. We are proud of the work and progress at Neale-Wade in this regard and this is testament to the positive attitude and determination of all at the Academy.

ABOUT THE AUTHOR

Andrew Field is Director of Digital Strategy and Head of Business, Computing and IT at Neale-Wade Academy, part of the Active Learning Trust.

THE HELP DESK

Roger Broadie and Allison Allen of Naace answer some of your queries about technology for teaching and learning...

Roger Broadie is a member of the Board of Management of Naace. He has very wide experience, over more then 30 years, helping schools and policy makers in the use of technology to take education to the next level.

Allison Allen is Director of Outstream Consulting (outstream.co.uk), Trustee of the Board of Management of Naace and a MirandaNet Fellow; she is joint author of Naace's Curriculum Framework and specialist in raising attainment and e-safety. She is a keynote speaker and offers consultation to UK and international schools and organisations; exceptional, unsolicited client feedback is testimony to the quality of these activities.

Q I have been a teacher (of RE) for nearly twenty years – during my career I've seen a lot of changes, but nothing to compare with the incredibly rapid increase in the use of technology in the classroom recently. I've always done my best to keep up with advances in educational theory and so on, but this trend is leaving me bewildered. How can I possibly keep up when technology moves so fast, and when my youngest students know so much more about the latest developments than I do?

ROGER SAYS...

Focus on what you want the pupils to do, not on the technology. And then think about how technology could enable the pupils to do it better. For example, if you want the students to discuss a topic, could they have some of the conversations online so that in the lesson you can focus on the important areas and get higher level debate going? If you want them to present their thoughts on a topic, would they be more engaged with this if you gave them a choice of whether to write, make a screen presentation, create a video or maybe produce an animation? Tell them that you have to be able to assess what they produce in no more than, say, five minutes and let them be creative about how to present their ideas.

ALLISON SAYS...

Well done for keeping up with new directions in education – including those enhanced or made possible by technology! It's important to understand that your students have more time to try out new technology and learn how it works; however it's teachers who understand higher thinking skills and can develop these in their students. You need to focus on the learning outcomes for RE, then consider how technology might help students achieve these or go even further. Perhaps students could brainstorm available technologies and suggest ways they might make learning more effective as well as being e-safe. You may even have 'Digital Leaders' in your school - selected students developed to be experts and advocates of using appropriate technologies, allowing them to act as ambassadors and peer mentors.

Technologies offer a range of powerful tools to help pupils to learn and to achieve high standards in RE. They can be used to find, develop, analyse and present information, as well as to model situations and solve problems. Computational thinking encourages a logical, systematic approach; and technology enables rapid access to ideas and experiences from a wide range of people and cultures, allowing pupils to collaborate and exchange information on a wide scale. Technology does not have to be expensive – blogging for example is a great tool, usually free. Look out for online sources of ideas – reonline.org.uk is a good example.

Q I teach science in a large secondary modern in the N. East. I've always had really strong, positive feedback on my teaching, and my pupils get great results – but my head of department has now told me that I have to 'flip' at least one of my lessons every week. This is not something I've ever expressed a desire to do... can you convince me that it really will make me a better teacher?

ROGER SAYS...

The first thing to do is to have a conversation in the department about what 'flipped learning' is. Most people think of it as pupils learning content at home so that you can then use class time to discuss the content and generate greater understanding. However the pupils at Lipson Community College have a much broader view of what flipped learning is – see their video at tinyurl.com/naacevideo. They talk a lot more about collaboration and working cooperatively out of class and use of their own time to be more creative in their learning.

ALLISON SAYS...

I'd be asking for information about this opportunity – flipped learning has effected some remarkable changes to the dynamics of teaching. Consider the work of Dr. Eric Mazur, Professor of Applied Physics at Harvard University: "You teach by questioning rather than telling."

The main points are:

+ Pupils prepare at home by watching video, listening to podcasts, reading articles, or considering questions accessing prior knowledge.
+ They reflect upon what they have learned and sort out questions/areas of uncertainty, posting questions on a Learning Platform or blog.
+ The teacher develops material and scenarios for areas of uncertainty, not for what the class understands.
+ Socratic teaching is used in class, questions and problems are posed and pupils collaborate to answer questions or solve problems. The role of the teacher is to listen to conversations and engage with individuals and groups as needed – traditional roles become fluid.
+ Consider these questions regarding conventional and flipped learning:

Where is the balance in providing students with answers, and having them discuss and apply reason to get to their own answers?

+ Consider your reaction to; "The more you understand something, the harder it becomes to imagine what it's like to be a beginning learner."

How practical is it for any teacher to apply a flipped learning model, where students explore content at home and blog questions before coming to a class where this material is then applied at a deeper level? If it's not practical, what are the barriers? If Flipped Learning is new to your school, look at tinyurl.com/naaceflip.

Q As an NQT, I was delighted to be offered a position teaching English in a really lovely secondary school from September 2013. My colleagues are great, the students are keen and friendly, and I get on really well with the whole SLT. It's almost perfect... but there's a fly in the ointment. I am really excited about using technology (especially apps) to teach my subject – but my head teacher flatly refuses to let me experiment. We have enough laptops for everyone to have one in class, which is great; however, whenever I raise the idea of using other personal devices, like students' own smartphones, for teaching and learning, it's dismissed out of hand as 'unnecessary', 'faddy', and 'just an excuse for learners to mess around'. How can I change his mind?

ROGER SAYS...

There is such rapid change happening that it is very easy for headteachers not to realise how far behind their school is slipping. It's very hard to see what is happening in other schools unless you go and visit, but the Naace 3rd Millennium Learning Award is building a great evidence base of short videos, with teachers and school leaders (and pupils!) talking about the benefits of using mobile technology. You can see the videos the schools make for their parents at tinyurl.com/naacevideo2, but what your Head really needs to see is the educational commentaries the schools also produce, for which you need to be a Naace member. It's probably only when the Head sees other Headteachers talking about this that he will start to change his mind.

Q It's all very well for academies with great infrastructure and a generous sponsor – but what about schools like mine, which are still operating with the most basic broadband, no wifi, and no prospect of any budget for significant investment in ICT in the immediate future? How are we supposed to prepare our young people for a 'digital future'?

ROGER SAYS...

Some schools with very low budgets compared to other schools still manage to fund the necessary ICT. It's all about the priorities of the Head and governors. Schools should be spending at least 2% of their budget on ICT every year, and really ought to be aiming for 4%. How does the head find this? By being creative with the staffing budget and by realising how much more effective everyone can be when well supported by technology. For a start, just think about how much the school will save on paper if everyone can access the school's online platform easily - at least £10,000 annually in a secondary school and maybe £20,000 annually. Make a noise about this, because if you and your colleagues are not getting proper experience in use of ICT in teaching and learning, you are becoming progressively less employable and less able to get promotion to a better job in another school.

HAVE YOU FOUND THESE ANSWERS HELPFUL? NEED FURTHER HELP? CONTACT NAACE TODAY

Naace is a membership organisation for everyone promoting learning with technology in a connected world. Naace Helpdesk for schools is a new service offering specialist advice on the new computing curriculum and other areas of school improvement. More details coming in September – www.naace.co.uk; office@naace.co.uk

Naace
Learning in a connected world

Copy that

Andrew Hargreaves points out 5 key mistakes educational institutions can make when it comes to document and print technology – and, crucially, explains how to avoid them...

As those working in the education sector will know, a school's printing and document management requirements are often considerable – teaching staff and students need to produce a high volume of documents on a fast turnaround, placing a great deal of pressure on their printing devices. Being aware of some of the costly mistakes that can be made regarding print infrastructure is the first step towards ensuring your establishment doesn't end up wasting time and money as you search for the right solution.

Mistake 1: Desktop disasters

One of the fundamental issues driving up print costs across the education sector is the large number of ineffective desktop printers still in place across many organisations. In addition, many schools are still using a variety of different suppliers for their multi-functional devices (MFDs), which may not represent best value for money or the best service. This can result in large fleets of devices producing high volumes of wasted documents, hard to manage networks and very little transparency. Carrying out a detailed print audit and reviewing your print as a whole can increase efficiency and dramatically improve costs. Using one uniform supplier often allows schools to significantly reduce their fleet size and simplify the management of their print estate.

Mistake 2: Unprepared print policy

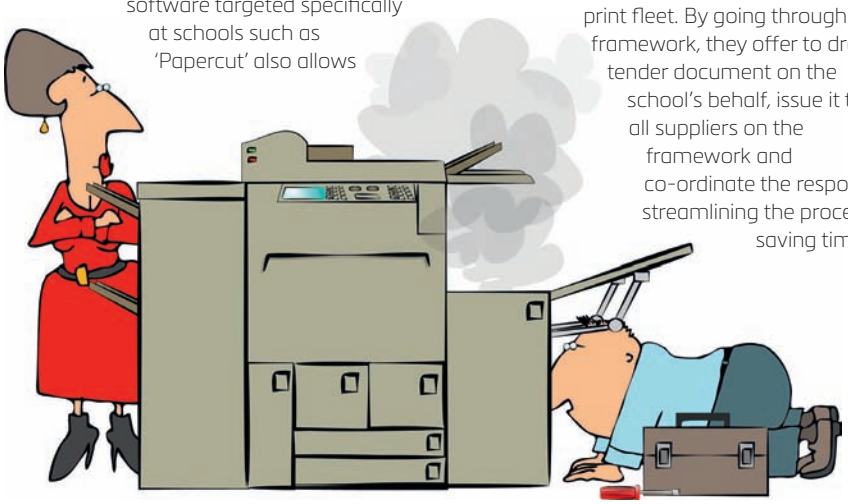
Despite the ever increasing pressure on educational institutions to cut costs from many angles, it's surprising how few schools have a dedicated print policy in place providing clear guidelines and setting rules around print procedures across the school, college or university. One of the main aspects of this is communicating the policy amongst staff and pupils to ensure everyone is aware of the organisation's print targets and the long term benefits of cutting down printing.

ABOUT THE AUTHOR

Andrew Hargreaves is an educational specialist at Altodigital, the UK's leading independent supplier of digital print and document solutions.

Mistake 3: Stale software solutions

Thousands of schools across the UK are still not using any type of output print management software, resulting in very little control, and ever increasing waste and costs. By introducing a print management solution – which can be linked to existing bio-metrics systems such as cashless catering – schools can save money and improve productivity. By enabling 'pull print' functionality from within the print management software, teachers and students can send documents to print to a variety of secure devices across a number of different buildings, resulting in confidential print collections and driving down wastage. Print management software targeted specifically at schools such as 'Papercut' also allows the schools management team to put 'rules' in place to ensure best practice printing is carried out at all times – ultimately driving down costs and reducing the school's carbon footprint.



Mistake 4: Confusing contracts

When reviewing their print infrastructure and going through the procurement process, schools and colleges should be looking at negotiating operating leases rather than standard leases with suppliers. These contracts usually offer a much lower rate of lending as well as prohibiting suppliers from carrying out costly mid-contract upgrades and providing hardware that is a certain percentage (usually 70%) over the RRP.

Mistake 5: Avoiding frameworks

Many schools we come into contact with at Altodigital don't have the resources for an in-house procurement expert and when they require new or replacement printing solutions they will often go to local or peer recommended suppliers. Though these suppliers often have first class knowledge and large product ranges, we would always advise going through an industry recognised framework. The Crescent Purchasing Consortium (CPC) is one of the largest education sector frameworks and it offers a lot of additional expertise and benefits for those looking to expand or adapt their print fleet. By going through the framework, they offer to draft the tender document on the school's behalf, issue it to all suppliers on the framework and co-ordinate the responses – streamlining the process and saving time.

10 STEPS TO SAVE YOU MONEY

How do you know you are making the right choices when it comes to future-proofing your infrastructure investment? **Caroline Wright** lists some key points to consider...

1 Define the scope

Before considering any investment schools should carry out a pre-purchasing review to scope the need, specification and evaluation process. In terms of the need, ensure you are not being sold add on features that are nice to have but really not necessary for your specific requirement. Once this has been done quotations can be collected.

2 Carry out an audit

It is very common for secondary schools to be unaware of products and resources that they already have stored away in various rooms and departments. Carrying out an audit of resources in the school prior to purchase could save you buying duplicate products.

3 Consider value for money

The next consideration before procurement is about overall value. The Total Cost of Ownership (TCO) looks at the complete cost including the initial purchase price, performance, fitness for purpose, warranty/service and support, maintenance, expected life of the product and even disposal. It's information you need.

4 Investigate suppliers

Included in the TCO calculation should be the company providing the product. Is it financially stable? Has it been recommended? Buying from a BESA member gives you the assurances you need. Although the saving may not be immediately apparent, buying from a good supplier can save you a lot of money over time.

5 Check about tenders

The next consideration prior to procurement in the public sector is whether the requirement must be put out to tender. The threshold values can be found on the Cabinet Office website (tinyurl.com/thresholdvalues)

6 Think big

Historically, Education Action Zones, local authorities and purchasing consortia have achieved economies of scale by 'bulk buying' for a number of schools. Your requirements may be the same as other schools in the area and therefore collaborative purchasing could achieve considerable cost savings.

7 Ensure an educational impact

Buy from experienced education sector suppliers (e.g BESA members) to ensure the product has been developed to fit the purpose for which it was designed.

8 Ask about training and support

Establish how the supplier defines training. High quality training can be vital for the effectiveness of the product in the learning environment.

9 Look at leasing

BESA is currently working with our members and the government to ensure contracts are straightforward, transparent, and cannot be altered by a finance company during the term of the lease. Make sure you read and fully understand the small print before signing any deal. And remember, if an offer appears to be too good to be true, it probably is!

10 Agree contract reviews

However good the relationship with your supplier, we strongly recommend agreeing an annual review of prices and service level agreements. Avoid signing unnecessary contracts that tie you into the same price agreement from the same supplier to give yourself the power to compare its service with others annually.

ABOUT THE AUTHOR

Caroline Wright is director of the British Educational Suppliers Association (BESA).

BEST PRACTICE PROCUREMENT CHECK LIST	YES	NO
Have you carried out a pre purchase review?		
Have you calculated the total cost of ownership?		
Does the supplier offer the stability required		
Does your requirement need to be put out for tender?		
Can you achieve savings by buying with other schools?		
Is the product designed to achieve the required learning outcomes?		
Is a high level of training and support included?		
Considering leasing? Check the small print		
Have you built in an annual contract review		

Lightspeed Systems

From blocking to access and to learning outside of the classroom, IT and Network staff need solutions to balance management in a safe and intuitive environment, but also with an ever-decreasing budget.

Mobile Manager

Take learning anywhere, anytime, on any device.

Blended learning, 1:1, BYOD. Learning is going mobile, and this comprehensive solution makes it easy. With powerful features made just for schools, you can roll out, manage, and safely utilise mobile devices for learning—balancing management between IT and educators and ensuring appropriate educational use, wherever your students go.

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- Restrictions on device and app use
- Remote configuration and device wiping
- App pushing
- WiFi Auto-join

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Students and schools protected

There was a time when content filtering was just about blocking inappropriate content. Times have changed. Today filters need to provide safe, fast access to valuable educational resources and connections. Focused just on education with customisable and scalable filtering, Lightspeed Systems Web Filter does just that.

- Flexible Profiles: Customise access to different users
- Education Focus: A solution made just for schools
- Mobile Filtering: For any device, anywhere, anytime
- Access to Content: Safe access without overblocking
- Teacher Trust: Smart features for teacher management
- BYOD: Filter student-owned devices on network
- Powerful Reporting: On all user activity
- Scalability: From the smallest primary school to the largest Grid

essa Academy

Transforms Learning with Lightspeed Systems

"We needed something that allowed us to deploy apps, manage the devices and make sure students are using them in a secure way and the Lightspeed Systems MDM has certainly given us the ability to do that," Abdul Chohan, Director of Essa Academy, tells us. Along with the right management tools for the devices, Abdul knew they needed to make sure they were kept safe too, which is why they chose Lightspeed Systems Web Filter. As well as seamless integration with the MDM solution, the Web Filter offers a number of tools to make life easier for himself and the staff. *"In the past it was a long winded process to get sites unblocked, now with the tools available to us with the Lightspeed Systems Web Filter, teachers can get quick and easy access to where they need to go."*

Find out more about our Web Filter and Mobile Device Manager at:
lightspeedsystems.com/TSmobile

Q&A
Mobile device management

LIGHTSPEED SYSTEMS

Mike Durando, EMEIA Sales Director for Lightspeed Systems, discusses the need for mobile device management and web filtering solutions that give everyone freedom to teach and learn, brilliantly...

VISIT: WWW.LIGHTSPEEDSYSTEMS.COM/EN-UK CALL: 01277 240630
EMAIL: EMEIASALES@LIGHTSPEEDSYSTEMS.COM

TS: Do you think that BYOD/1:1 is the technology route most schools will be following over the next few years?
MD: I would say yes – currently with BYOD, you have the political issue of the haves and have-nots, plus it's a lot to ask of a teacher to have to manage an iPad, and a Blackberry, and who knows what else at the same time. That kind of responsibility takes away from the teaching, so I suspect that most schools will eventually settle on having uniform devices, or at least, very strict hardware requirements.

Of course, that leaves schools having to make a decision on which devices to go for. At the moment it seems like Apple has the upper hand, but it's becoming more and more likely that other platforms will be considered, not least because of price differences. So eventually, even without BYOD, I think you will see networks in schools with a variety of devices being used. And that's when a great mobile device management system becomes a necessity, not a luxury. You need software that will manage all these platforms and enable teachers to, say, push out apps to everyone, and manage content, in a way that's both intuitive and flexible.

OK, so how does Lightspeed Systems Mobile Manager help teachers and students?
Well, the initial benefit for the IT coordinator is an incredibly easy and quick set up; it's cloud based, so within minutes – literally – we can have you up and running. Even more importantly, though, is the hierarchy structure for IT staff, which is a direct consequence of this product having been developed especially for schools. With an enterprise MDM (for a bank, for example) total security is essential. One individual can control it, ensuring that employees only have access to the specific apps and content they need to do their jobs.

With education, in contrast, it's increasingly the case that all or most of the content is online. You can't limit apps – teachers are finding new ones every day and they need to be able to access and share them. So we make it very easy for the Network Manager or IT staff to set the baseline policies (apps that everyone will definitely need, and areas that will always be off-limits) – and then individual teachers have admin rights, so they can decide what they need and when.

Moving onto your Web Filter, what would you say to those who argue that closing off parts of the internet for students risks leaving gaps in their communication technology education?
You know, the jury is still out on this. I've been fortunate enough to travel a lot with my job, and I've seen all kinds of different approaches to web filtering. For example, the Nordic countries, as a rule, don't filter the internet at all. That's their culture – they believe that parents and teachers are there to teach children how to be safe and behave online. Other countries or states might take a more restrictive line, feeling that children's security must be the top priority.

Coming up with a balance between safety and freedom is always going to be a necessity. A big selling point for our Web Filter is that we want to help schools ensure they're providing safe access without overblocking – it's up to each individual organisation to set the boundaries. Yes, we urge schools to block phishing and malware sites; but otherwise, you can be as progressive or conservative as you like. You can have different settings for different sessions, too – even down to specific adjustments for individual users.

It's on the fly, and in real time. With an old-style, locked down system, if a teacher needed a website unblocked or an app, they would have to contact the IT department; the request might need to go through the SLT, even to the local authority – it can take ages. But with ours, if, say, everyone's been brilliant in a maths class and the teacher wants to reward them, the teacher might say, "OK, everyone gets to play Angry Birds for fifteen minutes". The teacher pushes it out, everyone can access it for quarter of an hour, then it's back to work.

Is this a particularly exciting time to be involved in education?
I would say yes; I'm of an age that puts me firmly in the 'digital native' category – but even I have trouble keeping up with the amazing rate at which things are developing. When mobile devices become part of a teacher's world, he or she needs the right tools for control and consistency—and to make sure the devices are able to improve education by connecting students to the content, tools, and sites they need. And at the same time, the kids won't use their devices for great learning if they're not engaged. There's a lot to work out... but ultimately, it's a privilege to be part of a great company where everyone is trying to achieve the same goal: change education, for the better.

Find out about My Big Campus, Lightspeed Systems' innovative and engaging Learning Management System/VLE, on page 79

WHAT'S WRONG WITH PAPER AND PENCIL?

Education often means teaching people how to choose the right tools for the job, says our final, anonymous contributor – and the best way to do that is to give them access to as many tools as possible...

Five years ago, the school where I have worked for more years than I care to count decided to introduce a 1:1 mobile device scheme for learners. Of course, when such innovations are announced now, they barely raise an eyebrow – but, as anyone who has ever tried to impress a teenager with a year-old smartphone will confirm, going back half a decade when talking about technological development these days is a conversational anachronism that's more or less the equivalent of citing Pride and Prejudice as an example of 'one of those new, 'chick lit' novels that are so popular at the moment.'

Gotta have a gimmick

In 2009, with Gordon Brown's Labour party desperately trying to reassure next year's voters that it was, in fact, perfectly capable of managing the nation's finances for another four years – and some seriously challenging questions being asked about the BSF programme and a realistic upper limit for the cost of, say, a new roof – declaring that you were about to dip into your state school budget and hand over shiny, new iPads to more than 600 teenagers in order to 'help them develop as independent learners' was the kind of statement that could open a head teacher up to some criticism of a pretty 'robust' nature.

And sure enough, as soon as parents were told about our plans, the protests began. Why were we wasting taxpayers' money on gimmicky gadgets? How would we stop students spending all day flinging irascible avians at virtual swine? What made us think we could trust young people with such expensive and fragile equipment? And above all... what was wrong with paper and pencil, anyway? The local press sniffed out a story and stoked the fire of suspicion with hard-hitting editorial exposing the extent of competition between local schools, essentially accusing us of trying to bribe parents in order to get the best applicants.

The confidence trick

We held open meetings with current and prospective parents. We explained the wider context of independent learning into which the iPads would be introduced, and how confident we were that our students would be more than capable of using them with discretion and purpose. We were a little ahead of the game perhaps, we explained patiently, but we were convinced we were making the right move; keeping in mind the all-important rule that technology should never be brought into the classroom for its own sake, and its use should always be led by learning, not the other way around.

It's fair to say that the following years have amply demonstrated that our confidence back then was not misplaced.

Alongside the iPads, our students have access to laptops, PCs, and, if they choose, their own smartphones. They can also opt for an analogue approach to any learning task, and often do (we get through a lot of glitter glue, still). And meanwhile, tablets in schools are starting to become as commonplace as interactive whiteboards (and as likely to be replaced by the next big development).

A time and a place...

There's nothing wrong with paper and pencil. But nor is there any need to be afraid of bringing technology into the classroom with it. To set the tone, I always start my first session with a new cohort of Y7s by telling them about the time my dear old granny came to stay with me. The first morning of her visit, we were having breakfast, and she asked for a newspaper.

"Ah, gran," I told her, with a patronising chuckle. "We don't take newspapers in this house any more – why destroy all those trees in order to read something that's already history, when we have access to the most up-to-date news possible thanks to the internet? Here, borrow my tablet."

"I don't need a tablet," protested gran. "I want printed pages. Sometimes, nothing else will do."

"Rubbish!" I laughed. "My tablet can do anything a newspaper can – and much more, besides. Trust me, you'll never go back once you've tried it."

"It isn't what I need," gran insisted – but I was determined to show her the advantages of moving with the times, and pressed my beloved iPad into her reluctant hands.

Whereupon she used it to swat the fly that had been bothering her, and cracked the screen.

"Technology isn't always the answer," I point out to my class of 11-year-olds once they've stopped sniggering at my stupidity. "But in this school, as in the world outside, it is always one of the options – and understanding how to decide whether it's the right one for every new challenge you face is one of the most important things that you'll learn during your time here."

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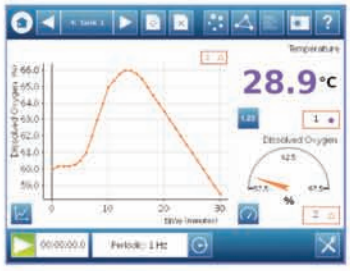

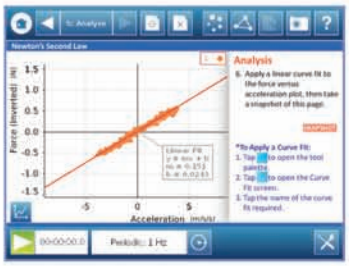

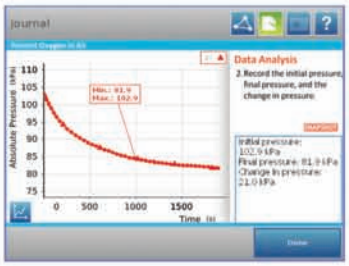

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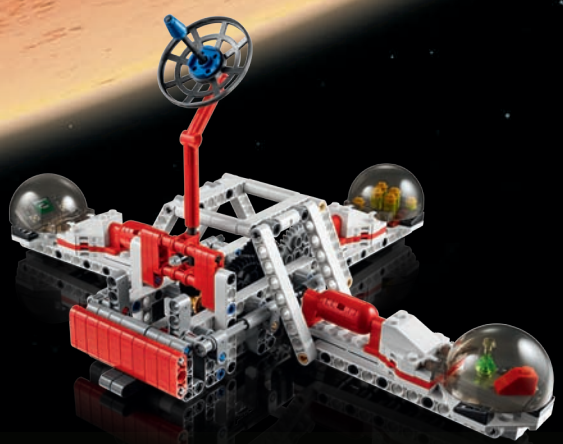

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