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# TECHNOLOGY + INNOVATION

**bett** The Bett Edition, 2018

## PREPARE TO BE INSPIRED

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- + disruptive speakers
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Why you  
**NEED**  
a school  
blog

How to get creative  
with computing

**Hands-on learning**  
for better outcomes

**SMARTER  
SEND  
SOLUTIONS**



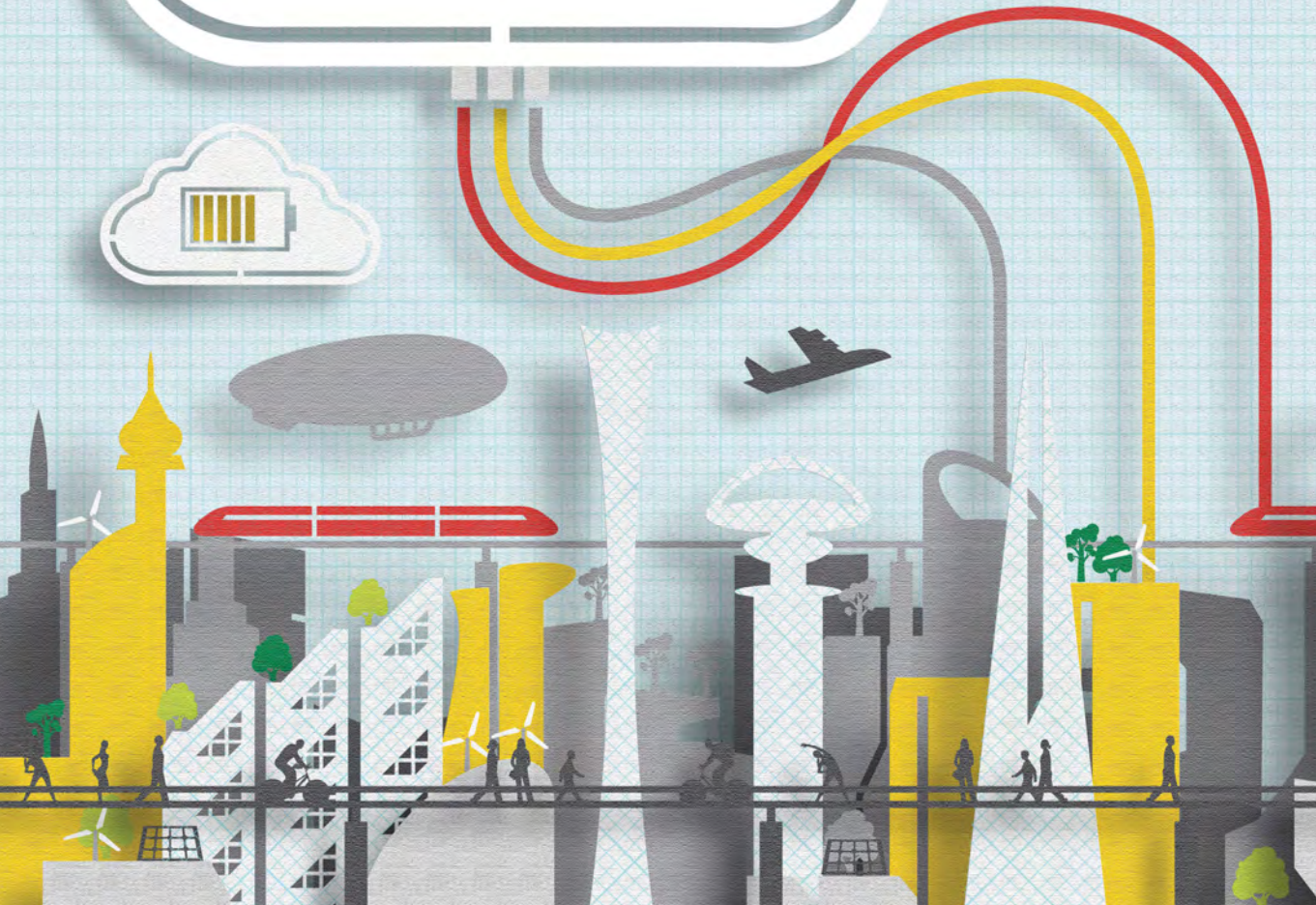
TECH FOR  
TEACHERS  
THIS YEAR'S  
**EDTECH  
WINNERS**  
- REVEALED!

**HAVE YOUR STUDENTS EXPLORED  
VIRTUAL REALITY?** (because they really should...)

# THE BRIGHT IDEAS CHALLENGE

**What will  
cities look like  
in 2050 – how will they  
be powered to be vibrant, healthy  
and clean places for people to live?**

We're looking for students' bright ideas to power future cities. To find out more, including how your school could win up to £5,000 and a VIP London experience at Make the Future Live, visit [shell.co.uk/brightideaschallenge](http://shell.co.uk/brightideaschallenge)



## Teacher Information

At Shell we're committed to inspiring the next generation of scientists and engineers. That's why we run The Bright Ideas Challenge – our cross-curricular schools' competition. It invites secondary students across Great Britain, aged 11-14, to imagine creative solutions to power cities of the future. We've developed a suite of resources to support your teaching and spark students' imaginations, including a step-by-step Teacher Toolkit, Student Workbook, mini videos and more. You can download the resources and find out more about the prizes online. Full terms and conditions apply. See [www.shell.co.uk/brightideaschallenge](http://www.shell.co.uk/brightideaschallenge)







# Let your students be inspired by a bright idea

Want to get your learners excited about STEM? Like the idea of winning £5,000 for your school\*? **Gareth Thistleton** has a suggestion...

We've officially entered 2018 – the Year of Engineering – designed to inspire the next generation of engineers. By 2025, it's predicted we will need 1.8 million new engineers and technicians (Engineering UK 2017).

So, what can already time-stretched STEM teachers do to help address the issue? Does a need to prepare for exams, amidst other priorities, mean teachers are sometimes pressed to think of new, creative ways of inspiring students to explore careers in science and engineering?

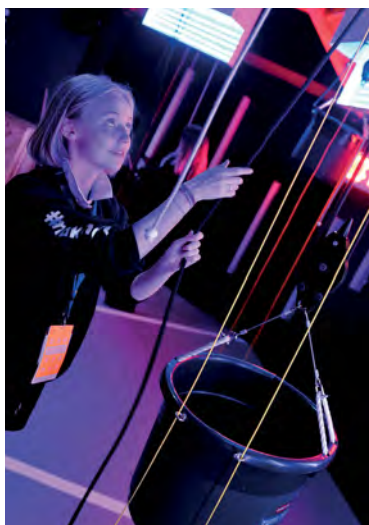
It's an ambitious ask and one teachers shouldn't face alone. That's why we created our national schools' competition, The Bright Ideas Challenge. We believe the answer to mobilising the UK's future generation of scientists and engineers needs input from both inside and outside the classroom. Young people need to go beyond studying the hypothetical and conceptual, and see how STEM skills and knowledge help solve real world issues, and shape a brighter future for everyone.

## Real-world creativity

The Bright Ideas Challenge, now in its third year, invites 11-14-year olds to combine their creativity and STEM skills to come up with 'bright ideas' to power the cities of 2050, and make them vibrant, healthy and clean places to live, work and play.

It's exactly this type of open-ended investigative project that the recent Gatsby Good Practical Science Report (September 2017) recommended UK students need more opportunities to engage with. Why? Because projects like this not only provide hands-on insight into what engineering and science careers are all about, but also equip students with real workplace skills that employers are finding increasingly hard to find.

The latest Employer Skills Survey from the UK Commission for Employment & Skills (2015) discovered that 39% of employers find it hard to locate candidates who can solve complex problems, 33% find it challenging to recruit people with strong team working skills, a third can't find enough candidates who are strong at encouraging and influencing others and a quarter (26%) cannot recruit enough candidates who are able to read and deconstruct reports.



Being a scientist and engineer isn't just about technical skills; the jobs of tomorrow require creative problem solvers who can collaborate effectively.

The Bright Ideas Challenge develops and nurtures these attributes. Young people are encouraged to enter in teams of up to five, and are required to demonstrate real collaboration and teamwork in their methodology. The students' entries are also measured on the creativity of their idea and its practical workability, helping them develop problem solving skills, resilience and accountability. Finally, their 'bright idea' must be demonstrated in a persuasive and imaginative presentation, supported by sound STEM theory and research.

## Advice and support

Ingenious ideas generated by previous competition entrants include piezoelectric sensors in pavements, that convert the vibrations of pedestrians' footsteps into electrical energy, salt-water powered vehicles and bacteria generators that convert food waste in future homes into a source of heat, light and power. I can't wait to see what students come up with this year!

Additionally, there's a host of free curriculum-linked resources, videos, warm



up challenges and inspiring peer-to-peer tips from previous entrants on our website, giving even the most tentative students the guidance and support they need to submit an entry they can be proud of. Register at [shell.co.uk/brightideaschallenge](http://shell.co.uk/brightideaschallenge) to get started and learn about the cash prizes and VIP experiences up for grabs\*.

Together, let's make this – the Year of Engineering – the year that we enable young people to explore and be motivated by real world issues. Let's help them see they have a positive role to play in addressing these issues, using the STEM skills they're learning in your classroom.



## ABOUT THE AUTHOR



**Gareth Thistleton is UK head of Social Investment at Shell. For more information about The Bright Ideas Challenge go to [shell.co.uk/](http://shell.co.uk/)**

**[brightideaschallenge](http://brightideaschallenge)**

\*The deadline to submit an entry is 24/04/18. Open to teams of 2-5 of students aged 11-14 resident in England, Wales, and Scotland. Promoter: Shell International Limited. Full Terms and Conditions available at [shell.co.uk/brightideaschallenge](http://shell.co.uk/brightideaschallenge)



# “Non-compliance with GDPR will incur stiff penalties”

**Raj Patel**, B2B sales manager UK & Ireland for Buffalo, explains how to ensure your school’s data is as secure as possible.



being seriously affected. Schools currently need to comply with the Data Protection Act; GDPR compliance will require schools to enhance their procedures in a number of areas. Full details should be available from the Department of Education.

## How can Buffalo help schools ensure they are GDPR compliant?

We can help with providing robust backup solutions to help schools meet their data retention requirements. We can work with schools to understand their current backup solutions, and ways in which to enhance these where necessary.

## What about where they have a BYOD policy?

Where schools have a BYOD policy, Buffalo can help ensure that these devices have restricted access to any backup data, depending on the school’s own policies. That way we can help ensure schools have secure copies of data as defined by their own data retention policies.

## You say your NAS solution is ‘the most secure on the market’ – what’s the evidence?

Unlike some of our competitors we don’t allow third party apps to be installed on the NAS, thus protecting you from any possible unauthorised access. Also the local setup of the TeraStation NAS with passwords strengthens security, and with the encryption of the hard drives themselves, ensure that the data is safe.

## How important is great customer service to your company?

Great customer service for Buffalo is the primary goal of our business. We understand that customers’ data is one of their most vital assets, and by offering great service both pre and post sales we want to build a long term partnership with our customers.

**BUFFALO**™

## T&I Why is the GDPR something that should be on every school’s radar at the moment?

**RP** Non-compliance with GDPR will incur stiff penalties and could result in Ofsted ratings



To find out more, visit [buffalo-technology.com](http://buffalo-technology.com)



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## Welcome...



...to the latest edition of Technology & Innovation magazine, especially produced to coincide with this year's Bett Show.

And why? Well, because we have always felt a real connection between our magazine and the UK's biggest edtech exhibition. After all, we have a lot in common – not least our passion for sharing the latest and most exciting technological developments for teaching and learning with the people who are absolutely best placed to assess their potential impact where it matters, in the classroom: you.

Bett has never just been about flashy gadgets and fancy software solutions – it's a show that's always as much about opening conversations as closing deals. And that's exactly what we try to do at T&I, too – testing ideas, sharing experiences, and giving teachers and leaders a chance to discuss what does and doesn't work for them and their students. For example, in this issue Shanneila Saeed considers whether we need more creativity in the computing curriculum (p.34); Terry Freedman makes the case for starting a school blog (p.40); and both virtual reality (p.46) and 3D print technology (p.36) are put through their paces in an educational context.

Talking about what works, we are thrilled to be able to reveal in this issue the winners of our newly launched Tech for Teachers Awards – our expert judges have assessed shortlisted entries across seven curriculum-linked categories, and the result is a selection of profoundly useful and transformative products and resources, all of which offer superb value for money, and some of which won't even cost you a penny! Find out more from page 9.

Whether you're planning a visit to Edexcel London between the 24th and the 27th of January or not, we hope you'll find plenty to inspire and inform your thinking about edtech and its potential for you, your school, and above all, your students, within these pages. And if you are coming to Bett, do make sure to pop along to stand H100, and say hello!

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AWARDS 2018  
FINALIST



come visit us  
at stand C141

## providing a personalised learning experience for all of your students

Hello, we're Texthelp. Everyday we help millions of students achieve their potential, understand, learn and express themselves. We create literacy, language and STEM tools that provide the support each student needs for reading, writing, maths and research.



Find out more at [texthelp.com/BETT](http://texthelp.com/BETT)





EDUQ&amp;A

# “Technology companies are getting their act together”

**Martin McKay**, Chief Technology Officer and one of the founders of Texthelp, considers what's on the horizon for edtech in 2018, and Texthelp in particular



## T&I What do you think the year ahead has in store in terms of educational technology?

**MMcK** 2018 is going to be another great year for edtech. One of the things we are continuing to see is the cost of devices continuing to fall. We are also seeing the emergence of devices with a touchscreen or stylus. For education, being able to input in this way is more meaningful for the students and at Texthelp, we can start to build interfaces for touch and stylus into our products, which we are already doing. It's going to be interesting to see how Windows 10 S is adopted. It's a compelling offering from Microsoft.

AR hasn't really moved too far from the gaming world into education just yet but I would anticipate that happening over the next year. Also, teachers who might have been a little hesitant or reluctant to use technology in the past are now beginning to use cool web-based tools to allow students to turn in their homework and this is helping them

to realise the role and the potential that technology has to play in the classroom as well as allowing them to be more open to trying other things as well. The reason for this? Technology companies are getting their act together and making things easy for teachers to use.

## There is a big buzz around machine learning how big a role will this have to play in education in the year ahead?

Machine learning is a hot topic everywhere at the moment and it's going to be as relevant in education as it is anywhere else. If you look at medicine, people have been talking about how AI can be better than radiologists at spotting tumors in medical imaging, in the same way, I believe that machine learning is going to be able to spot trends in writing that might be able to pick up dyslexia, which is particularly relevant for us at Texthelp. What I see in the future is using AI and machine learning to observe

students' learning behaviours, identifying if they need support with reading and writing, and saying "it looks like you need some help with reading, do you want to try this text-to-speech tool/dictionary tool?" or even, based on their writing behaviours, offering assistance with their writing. Machine learning has the ability to be completely transformative this year.

## Will big data / learning analytics have a major impact on education this incoming year? What are you doing to incorporate them into your software?

At Texthelp, big data allows us to do two things: to observe how students are using our software (we've been able to do that for some time); but also to observe how students are learning. In reading, we can determine what reading age the content is that they choose in their spare time, what subject area it is, and what types of words they struggle with – that gives us an indication of vocabulary ceiling. In writing, we can now tell how long the average student's sentence is, how many syllables per word they would typically write, that means that we can really help the teacher, telling them if that child is on or off track for almost twenty different measures of writing, including text maturity, the number of sentences with subject, verb and object, and the percentage of spelling, punctuation and grammar errors. All of this gives us a really powerful insight into how students write and helps us to establish a set of norms for on-grade performance, which is really going to help teachers to identify where their students are in comparison to their peers, as well as across the nation.



To find out more, visit the Texthelpers at BETT on stand C141 [www.texthelp.com/BETT](http://www.texthelp.com/BETT)



# Helping you comply with GDPR

Introducing the SIMS Parent Lite app - a simple tool to support schools with GDPR data accuracy.



You may be aware that in May 2018, the regulations regarding data protection in the United Kingdom will change, becoming the General Data Protection Regulations (GDPR). This means the way you manage all data and information within your school will also be changing.

Once the new regulations come into force, schools will have a number of objectives to meet regarding the accuracy and security of the data held on their pupils, parents and staff.

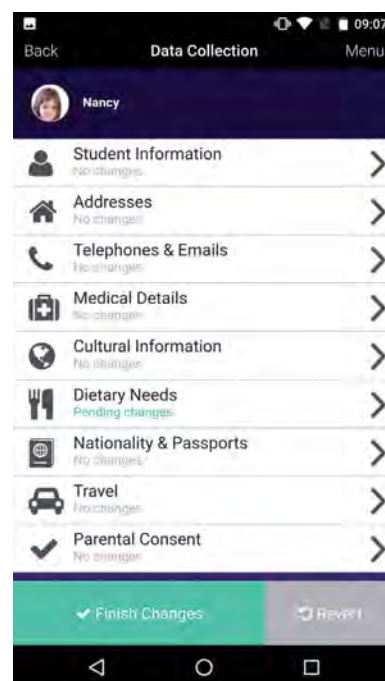
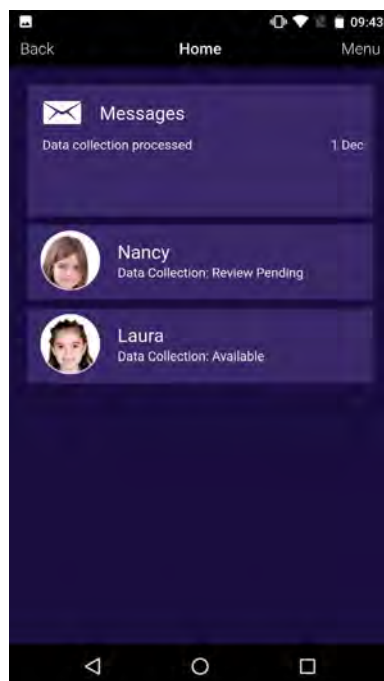
Often there are inconsistencies in the way that schools collect and store their data, with many processes being manual, paper-driven and time consuming.

Collecting and maintaining data can be an expensive and time-consuming process for the school office and the new requirements of GDPR could potentially add to the load. With school budgets being continually stretched and no additional financial support being made available to assist with GDPR compliance, school senior leaders will be looking to find cost-effective solutions to their challenges wherever possible.

## Introducing the SIMS Parent Lite app

To help schools comply with the new GDPR regulations around data collection, accuracy and maintenance, Capita has created an easy-to-use, secure tool to help streamline the way schools collect and maintain parent and pupil data: the SIMS Parent Lite app. This is included as part of the SIMS annual entitlement fee, incurring no additional cost to schools who hold a SIMS core start-up kit licence and is available on iOS, Android and via a mobile enabled website. The SIMS Parent Lite app aids schools in managing data accuracy, upkeep and security in transit by enabling parents and staff to confirm data and update changes as required throughout the academic year.

The app allows parents to review and request changes to information such as medical details and dietary needs electronically, and thanks to a high level of customisation schools have the ability to control which data areas can be modified



and add in additional free text areas to request further detail where needed.

Schools can use push notifications to alert parents when their input is required, and the electronic process removes the need for paper-based collection and storage systems, where records can easily be lost or damaged. This allows schools to be more proactive in the collection of data, and more responsive to information requests as they arise.

## Empower parents

By taking this process online, schools give the power to the parents as they can keep their own data up-to-date and significantly reduce the administration process with the school.

With a simple to use interface and

intuitive controls, the SIMS Parent Lite app reduces the need for extensive user login maintenance, without the need for your IT department. Parents have the ability to register and login with an existing email and quickly confirm their data or request modifications electronically.

## Get started on your journey to GDPR compliance

The new regulations can be difficult to grasp, but Capita's solution can help you get started with regards to data collection.

Getting started is straightforward; simply sign-up on the SIMS Parent Lite app webpage at [www.capita-sims.co.uk/simsparentlite](http://www.capita-sims.co.uk/simsparentlite) or contact your SIMS support provider.

Find out more at [www.capita-sims.co.uk/simsparentlite](http://www.capita-sims.co.uk/simsparentlite), or call 0800 170 1713

# THE JUDGES HAVE SPOKEN....

... so now it's time to reveal the big winners!

## TECH FOR TEACHERS AWARDS, 2018

**A**s we always say at Technology & Innovation magazine: what matters in education, is what works – but given the dizzying variety of edtech resources available for schools, with more being added all the time (often accompanied by extremely shiny sales brochures and impressive statistics to back up claims of effectiveness), how on earth are time-strapped teachers and leaders supposed to identify exactly where their increasingly stretched budget should be invested?

**Tech for Teachers** is an awards scheme launched this year to address precisely this question. Back in the summer of 2017, we invited developers and manufacturers to share with us the very best classroom innovations they had to offer, under seven curriculum linked category headings (and for no cost). Eventually, we were able to narrow the entries

down to shortlists of five resources per category, which were then passed across to our expert judges for even more rigorous assessment.

Our judges really put the finalists through their paces, grading each one according to a set of five criteria:

- **INNOVATION** (Is this product/resource genuinely new, exciting, groundbreaking?)
- **BENEFITS TO TEACHING AND LEARNING** (Will it have real impact?)
- **LONG-TERM POTENTIAL** (Could this be a fad? Will it end up gathering dust?)
- **VALUE FOR MONEY**
- **USER-FRIENDLINESS** (How easy is it for a non-techy teacher to get started/ make the most of it?)

Following their deliberations, we are now able to share with you the final results: 35 genuinely brilliant edtech innovations, each with the potential to enhance teaching and learning in your classroom, and support students towards better outcomes. Within every category you'll find a five-, four- and three-star winner, as well as two further finalists. From established industry giants to small startups; and from free apps to licenced, whole-school software solutions, there's a fantastic range of options here – so read on, and prepare to be inspired...



TECH FOR  
TEACHERS

### Meet the Judges



#### MATHS



**COLIN FOSTER** is an associate professor in mathematics education in the School of Education at the University of Leicester. He has written many books and articles for mathematics teachers, and is a regular provider of lesson plans for *Teach Secondary* magazine (see [foster77.co.uk](http://foster77.co.uk)).



#### THE ARTS



**RAE SNAPE** is head teacher at the Spinney Primary School, NLE, and head of The Kite TSA, Cambridge; she is passionate about **STEAM** – in other words, putting the 'A' (for the arts) into STEM.



#### ENGLISH



**MARK CHAMBERS** is cofounder of The EdTech Association (TheETA). He is a former chair and CEO of Naace, as well as a school and Local Authority leader, and is currently providing support to education start up companies and working with the DfE on the development of education technology policy.



#### SCIENCE



**JOANNA RHODES M.Chem, D.Phil, MRSC** is head of sixth form at Wakefield Girls' High School, and a regular provider of lesson plans for *Teach Secondary* magazine. Her students were delighted to have the opportunity to help her put these science resources to the test.



#### STEM



**DR KEVIN P STENSON** is Chief Executive of national education charity, The Smallpeice Trust.



#### COMPUTING



**TERRY FREEDMAN** is an independent educational ICT and computing consultant, and publishes the ICT & Computing in Education website at [ictineducation.org](http://ictineducation.org) and the Digital Education ezine at [i.ictineducation.org/newsletter](http://i.ictineducation.org/newsletter).



#### MFL



**GARRY BRITTON (@Linguagenius)** teaches literacy and study skills, and is constantly developing the use of technology in teaching.



## WINNERS Maths

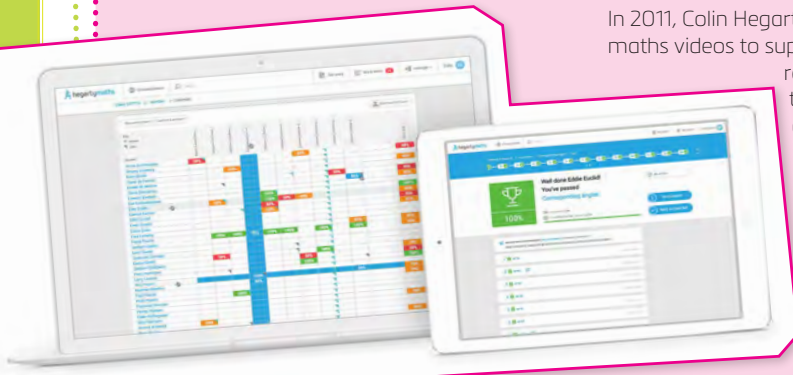


## HegartyMaths [hegartymaths](https://www.hegartymaths.com)



In 2011, Colin Hegarty and Brian Arnold started making YouTube maths videos to support their own classes with homework and revision. Now, HegartyMaths is an online platform that teaches, assesses and tracks everything a child needs to learn in school maths from upper primary to IGCSE level; featuring well-thought out explanations with carefully modelled examples, all learning built on prerequisite knowledge, all videos followed by bespoke assessments perfectly matching the video and finally, a simple and easy to use tracking system that allows teachers to focus on pupils' mistakes whilst making the collection of data easy.

[hegartymaths.com](https://www.hegartymaths.com)



## MATHSTER

Created by three British maths teachers who originally met whilst working abroad, Mathster is an online maths assessment platform made by teachers for teachers, with a simple interface, plenty of good questions to choose from (a phenomenal resource bank) and a quick and responsive online support team.

[Mathster.com](https://www.Mathster.com)



### Category finalists...

**Bettermarks**  
([bettermarks.com](https://www.bettermarks.com))

**Doodlemaths**  
([doodlemaths.com](https://www.doodlemaths.com))



"There has been an explosion in quantity and quality of digital resources in recent years, and it is now possible to find high quality options for every maths department and teacher – all of the starred entries are very good, and just do different things – ideally, you'd have all three!"

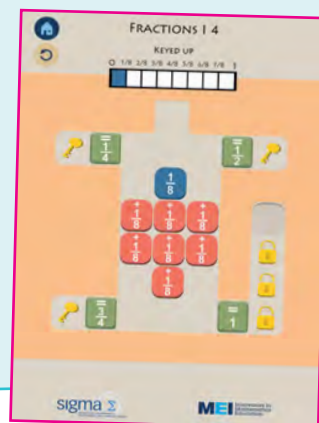
**Colin Foster, judge**



## Sumaze!

Sumaze! is a place where mathematics is learnt, problem solving skills are developed, and fun is had as students tackle highly engaging maths puzzle games involving arithmetic, inequalities, the modulus function, indices, logarithms and primes.

[mei.org.uk/sumaze](https://mei.org.uk/sumaze)







**WINNERS**  
**English**



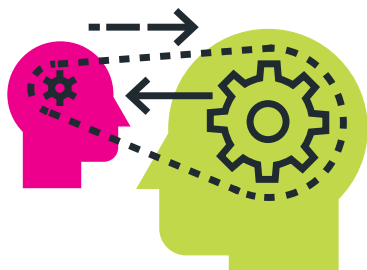
## LITERACY PLANET

LiteracyPlanet is gamified literacy software comprising over 15,000 exercises suitable from preschool through to year 9. Our judge describes it as, "a well thought out and comprehensive learning and teaching resource that engages learners, provides excellent feedback and, well used, makes much more efficient and effective the role of the teacher."  
[literacyplanet.com/uk](http://literacyplanet.com/uk)



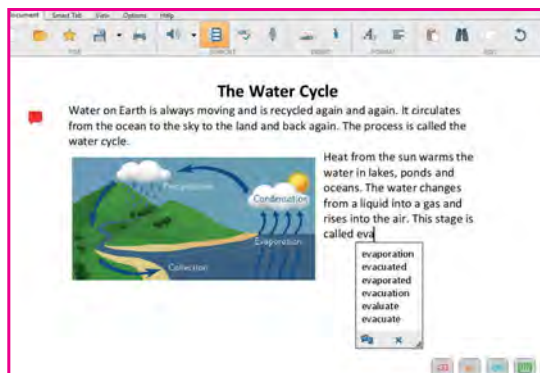
"I am really pleased we invested in this excellent resource. It creates a buzz around my wonderful subject and really helps the Aldro students to improve in their reading and writing knowledge and skills."

**M. Thompson, Head of English (Middle School), Aldro**



## ★★★★★ DocsPlus

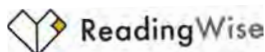
DocsPlus helps struggling writers overcome barriers at each stage of the writing process, enabling them to develop their literacy skills and become independent writers. It combines the day-to-day support required to make the curriculum more accessible with special exam support tools, all in one piece of software.  
[tinyurl.com/techinnodocsplus](http://tinyurl.com/techinnodocsplus)



### Category finalists...

**Renaissance Star Reading**  
([renlearn.co.uk/star-reading](http://renlearn.co.uk/star-reading))

**Macbeth Interactive Motion Comic**  
([classicalcomics.com](http://classicalcomics.com))



## READINGWISE

ReadingWise is an innovative, evidence based, online programme that claims to deliver a nine month reading age increase in under 20 hours.  
[readingwise.com](http://readingwise.com)





# WINNERS Science



## CLASS VR

"This could truly be the ultimate in classroom innovation," says our judge. "Class VR, from Avantis, takes a concept we have seen before, with cardboard goggles and mobile phones, to a new level of professional finish and control. The sturdy units are built with school in mind, providing charging boxes and remote diagnostics that ensure you can always make use of your kit. As the goggles do not rely on mobile phones the unit is sealed with controls on the outside and speakers delivering stereo sound to place the user in an immersive experience. The teacher controls even allow you to see where each pupil is looking and to direct their eyeline. Video and photographic 3D was outstanding, with a generous and growing library of resources. Augmented reality was powerful and genuinely useful in the classroom. Most exciting was the opportunity for students to build and code their own 4D space. It's an expensive investment – but after experiencing it I wouldn't want to offer anything less to my pupils."

[classvr.com](http://classvr.com)



## GCSEPOD

GCSEPod is an extensive resource which presents excellent opportunities to students to engage with independent learning. It's very thorough, and excellent value for money in what is a competitive market place for subscriptions of this type.

[gcsepod.com](http://gcsepod.com)

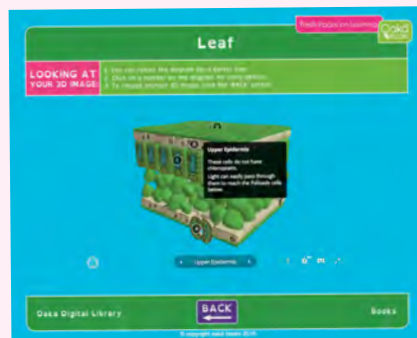


## Oaka Books



Oaka Books has thoughtfully assembled a graphically sensitive selection of ebooks which are focused on the lower key stages and SEND. The books are exceptionally easy to read and follow, and package knowledge in a visually appealing way. Great care has been taken to ensure these accurate resources are suitable for all pupils, but especially those with SEND.

[oakabooks.co.uk](http://oakabooks.co.uk)



### Category finalists...

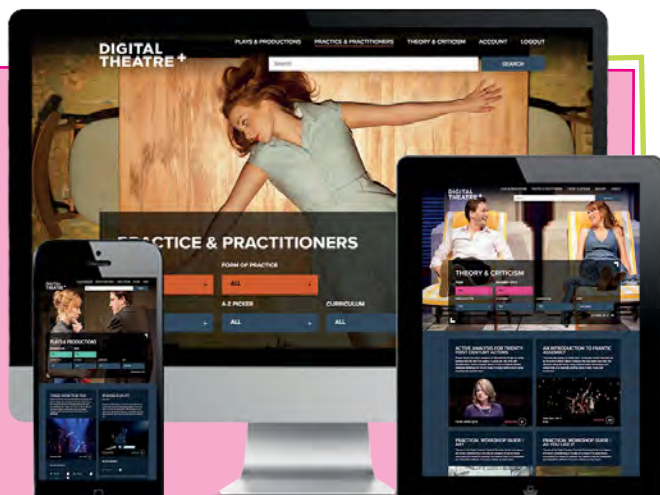
**Humanoid 4D+**  
(education  
harbour.com)

**GCSE Achieve**  
(bksb.co.uk/products/  
gcse-achieve)



## Digital Theatre+

Digital Theatre+ is the world's leading platform for performing arts and English education, providing teachers and students with access to 800+ curriculum-mapped resources, developed alongside renowned academics, practitioners, and UK exam boards. Three million students, at over 1,000 academic institutions, in 65+ countries, have unlimited access to some of the world's finest productions, unique backstage insights, practitioner interviews and written analysis of key texts; it's a constantly evolving resource, offering unlimited teaching and learning opportunities.  
**[digitaltheatreplus.com](http://digitaltheatreplus.com)**



## MOOV BANK

MoovBank is a free, online dance resource, created by the internationally renowned dance company, BalletBoyz. MoovBank features an array of video dance lessons, step-by-step tutorials, games and creative tasks, all supplemented with downloadable lesson plans.  
**[Moovbank.com](http://Moovbank.com)**

### Category finalists...

**Charanga,  
VIP Studio Sessions**  
([charanga.com/site/vip-studio-sessions](http://charanga.com/site/vip-studio-sessions))

**ABRSM  
Sight-Reading Trainer**  
([abrsn.org/sight-reading-trainer](http://abrsn.org/sight-reading-trainer))



## HUE Animation Studio

HUE Animation Studio is a movie-making starter kit for children aged 7-13 years. Fostering the 21st century skills of creativity, collaboration, and critical thinking, HUE Animation elicits a high engagement from students as they plan, execute, and present their creations. It can be used across the curriculum in any subject.

**[huehd.com/animation](http://huehd.com/animation)**

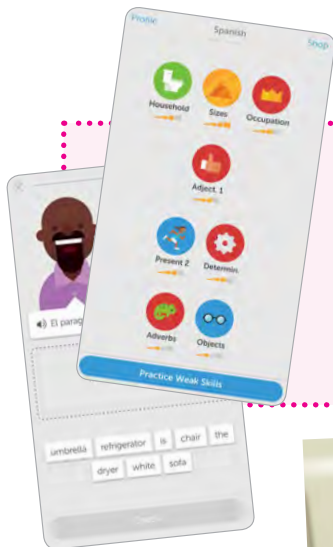




## WINNERS MFL

### Category finalist...

**HearItFirst**  
(tinyurl.com/  
hearitfirst)



## LyricsTraining

LyricsTraining is a website designed to help users learn and improve language skills through music videos and song lyrics. It's a motivating, gap-fill exercise; simple exposure to the sounds of another language allows learners to recognise sounds in a short space of time, training the brain almost unconsciously. There are thousands of songs available and it is completely free – it even has a special Karaoke mode! Teachers can make their own cloze activities and follow students' scores – and now, a mobile app means that LyricsTraining can be enjoyed everywhere.

**lyricstraining.com**



## DUOLINGO

Duolingo is the most downloaded education app in the world, with more than 200 million users. The company's mission is to make education free, fun and

accessible to all. Duolingo is designed to feel like a game and scientifically proven to be effective: an independent study by the City University of New York found that 34 hours on Duolingo is equivalent to a university semester of language classes. **Duolingo.com**



## llini

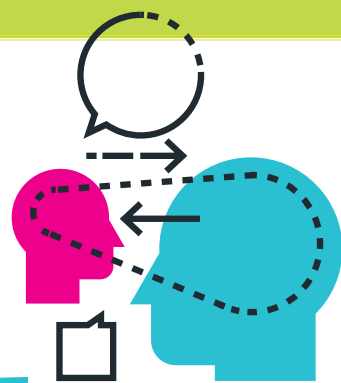
"llini is a website providing French immersion through news, culture and entertainment videos – it's fun, easy to use and makes language learners feel the vibe of francophone life!  
**llini.com**



## VOCAB EXPRESS

"Vocab Express integrates text, images and audio to provide an engaging environment in which students can build their vocabulary across 14 modern and classical languages. The unique online platform makes homework setting and progress monitoring simple, with pre-loaded and categorised exam board and textbook content and an easy-to-use tracking tool."

**Vocabexpress.com**



"It was good fun to try out all the apps and websites, with their very different ideas and approaches. There was lots of inspiration to take away. Well done to all the entrants."

**Garry Britton, judge**



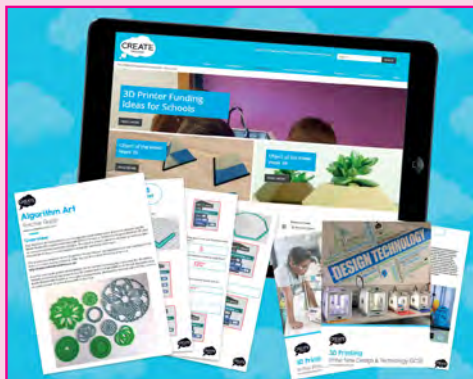


# WINNERS STEM



## The CREATE Education Project

**CREATE**  
Education



The CREATE Education Project is an open-source community resource for 3D printing in education. This collaborative platform is designed to provide free resources and support to help educators to introduce and embed 3D printing and scanning technology in the classroom, including CPD and lesson resources, technology and curriculum guides, and project ideas. Contributors and community members join a network of people embracing the same passion for sharing and improving access to education. Membership is free and members can download all the resources for free, including dozens of projects, ideas and resources suitable for STEM, D&T, science, maths and computing. Community members can also access a no-obligation FREE 3D printer loan scheme, where they can borrow an Ultimaker 3D printer for one month to deliver a project in their school. **Createducation.com**



## Solar car/boat STEM kits

From Solar-Active come brilliant solar powered kits to help teach design, maths, physics and practical skills in a fun way which will motivate and engage students. In building the solar car/boat, students can gain self confidence and problem solving skills. The components are designed to be modified, using creative skills to positively affect performance. **solar-active.com**



## The LEGO® E-tailer Rulebook For Digital Presence



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### Category finalists...

**K'NEX STEM Explorations Swing Ride Building Set**  
([knexeducation.co.uk/product/stem-explorations-swing-ride](http://knexeducation.co.uk/product/stem-explorations-swing-ride))

**Seebox**  
([seebox.co.uk](http://seebox.co.uk))



## LEGO® MINDSTORMS® Education EV3

LEGO® MINDSTORMS® Education EV3 is a hands-on STEM resource that aids learning in the classroom through robotics. It equips students with the digital and engineering skills that are becoming more and more important for a technological future. The design of the robot is

personal to the pupil – they are given a task and the freedom to create their own solutions. This allows for various designs in one classroom, meaning that students can collaborate and learn from one another.

**education.lego.com**



# WINNERS Computing

"Each entry in this vibrant category represents an attempt to bring computing to life, and to provide both teachers and pupils with opportunities to explore"

Terry Freedman, judge



## PG ONLINE

### PG ONLINE

Each six-week module of this unique, no-frills, non-subscription digital teaching solution covers a specific section of the new GCSE or KS3 specifications for computer science or D&T. The lessons within each unit include a fully editable PowerPoint teaching guide, a complete lesson plan, imaginative worksheet activities, homework and a full exam-style assessment. Units may also include useful web links, videos, graphics or coded solutions to programs. Everything is written with the growing number of non-specialist teachers in mind, as well as providing experienced teachers with a pre-planned solution. Each series also has a complementary textbook (available in digital and print formats) to support a more traditional approach.

[pgonline.co.uk](http://pgonline.co.uk)



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### BBC micro:bit

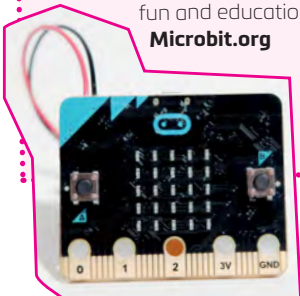
The BBC micro:bit is a pocket-sized programmable device, given free to every Year 7 student in England and Wales, S1 in Scotland and Year 8 in Northern Ireland across spring and summer terms 2016 (and now available for retail), to inspire them to get creative with digital and develop core skills in science, technology and engineering. It is a hands-on learning experience designed to allow any level of coder from absolute beginner to get involved and be part of something exciting, fun and educational.

[Microbit.org](http://Microbit.org)

### Category finalists...

**Pi-top**  
([pi-top.com/products](http://pi-top.com/products))

**Mirobot**  
([mime.co.uk/products/mirobot](http://mime.co.uk/products/mirobot))



### FUZE CODING WORKSHOPS

FUZE makes learning real, text-based programming as easy, accessible and engaging as possible. A unique coding environment familiarises prospective programmers with intuitive, common-sense commands and empowers students to move further into more complex languages. The application, FUZE Basic, can be downloaded for free along with project worksheets – and there is also a nostalgic all-in-one plug and code computer, which is a self contained learning environment with accessible electronics for exciting projects.

[Fuze.co.uk](http://Fuze.co.uk)







# Clear communication

Make sure you choose the two-way radio system that's right for your school

Communication is key to managing safety, security and operations on campus. With the new generation of digital two-way radios, instant, clear communication is assured throughout the day at the press of a button; without having to worry about the availability and strength of mobile networks, recalling telephone numbers, line rental and call costs. The real question is: which two-way radio system is right for you?

For over 26 years, Radio-Active Communications has supplied and supported simple, efficient and cost-effective two-way radio equipment and solutions to hundreds of schools, academies, colleges and universities across the UK. As a founding member of the Kenwood Digital Partners Network, we offer a wide range of two-way radios ideally suited for use in the education

sector – from the simplicity of licence-free portable radios to the most advanced licensed systems.

The choice between the different formats will depend on what you want to achieve and characteristics of your site including location, the number of users, the distances involved and budget available. For smaller schools, the licence-free Kenwood ProTalk TK-3401 provides an ideal solution while for larger or multi-site campuses, a Digital system based on the Kenwood TK-D240/340 offers extended coverage and more advanced user-safety features. With increased focus on security in recent years, customers are frequently opting for Kenwood's cutting edge 'Priority Channel Override', which allows guaranteed communications in emergency scenarios



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TK-3401D



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# Why I Love...



**Nathan Ashman, lead teacher for new technologies, explains how ClassVR enhances and enriches students' learning experience at St Wilfrid's school...**

## “ It gives us access to new environments

Ever since the emergence of virtual reality and accessibility of it through smartphones, I've been eager to use it in a classroom situation. What ClassVR allows us to do is take students into another environment anywhere in the world. What's great about it is that they can experience that environment in full 360, looking all around them so that they can imagine themselves actually being there

## “ It improves retention of information

This has a huge impact on their retention of information and their learning experience because they are having a real experience while they've got the headsets on. Immersive learning is really moving forward in schools. The students aren't just isolated in their own immersive world, they're putting the headsets on then taking them off and talking to each other about their experiences naturally because they are keen to share this with people around them. ClassVR provides a whole virtual reality solution which is both accessible and easy to use

## “ It's easy, and flexible

It is also flexible, in that, as a teacher, you can lead your students through a particular topic or you can allow students to navigate themselves, dipping in and out of experiences as they choose. The portal is very easy to use: you can just drag and drop activities you want to use and there is an amazing amount of



content on there to choose from. We want to make our curriculum specific to our students, so being able to put our own content on there really makes it more purposeful and relevant

## “ It boosts engagement

Gwen Rees, Assistant Principle at St Wilfred's was sceptical at first about using ClassVR with her students, but now sees it as an invaluable resource in the classroom. "When Nathan came to me to ask about using ClassVR headsets with my students, my initial reaction was unease and worry. The idea of having these boys in a space with

technology was quite daunting. It turned out that I didn't need to worry. They boys were so engaged and excited about using this technology that there were no issues with behaviour

## “ It's a complete package

ClassVR is different because the package is complete, there's no need for mobile phones which means the students can pick it out of the box and use it straight away. If you're unsure about using this technology in the classroom my advice would be have a go yourself. Put on the headset and see how this would captivate your students



For more information about Class VR, visit [avantiseducation.com](http://avantiseducation.com). Class VR comes complete with hardware, software, curriculum-linked activities and lesson plans, equipping teachers with everything they need to introduce this cutting edge technology straight into the classroom.





# CREATE

Education



I have been both a fan and collaborator of CREATE Education since I came across them in 2014. What impresses me is their selfless dedication to the objective of incorporating their technology into education. The CREATE Education team have been and are instrumental in make 3D printing accessible to schools and students. They have not just gone into the market with a flashy brochure. They have gone into schools and rolled up their sleeves, learned at the chalk face and given back in terms of their education interface, product and software development. CREATE Education provide much more than just a 3D printer.

David Holloway OBE  
The Ideas College



Thinking of investing in 3D printing technology?  
Or just want to learn more about it?

Visit the open source CREATE Education Project to learn more. Access **FREE** classroom & professional development resources plus case studies & projects.



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EDUQ&amp;A

# “Every teacher is striving for collaborative environments”

Paul Croft, director and founder, discusses how the CREATE Education Project could inspire your students.



## In what ways can it change students' experience of education?

Every teacher is striving for collaborative environments where kinaesthetic learning opportunities can be facilitated. By using 3D printing abstract concepts become tangible and engagement improves. We have lots of stories of disengaged pupils reintegrating and the hands on nature means even the best pupils are discovering new way to facilitate their own learning and development.

## How easy is it for schools to get involved?

Our mission to make the technology accessible means getting involved couldn't be easier. Anybody can download resources for free, visit our community of Hubs, Makerspaces and Industry partners or take advantage of our free loan scheme. We strive every day to remove barriers for adoption and are always happy to have more schools becoming part of our community.

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## T&I Why was the CREATE Education Project originally conceived?

**PC** The CREATE Education Project was launched to make 3D printing and other game changing technologies accessible and affordable for everyone. Thanks to insights offered by teachers we talked to, we knew that to embed any technology in the classroom we needed to recognise the existing barriers and to provide help and support to overcome them..

## How does it work in practice?

By focusing on core areas of Community, Reliability, Education, Access, Teachability and Economics we've developed an offering that allows teachers to benefit

from using the technology. We provide what is needed beyond just the hardware and consumables. Whether it's a free loan unit, sharing best practice from Hubs to facilitate peer-to-peer learning or technical know-how, we can help!

## What kinds of resources are available?

By listening to our community we've developed a platform of free resources to make the teacher's job as easy as possible. These include lesson plans, project ideas, guides specific to certain key stages such as primary or GCSE, technical tutorials and software links. Recent awards have recognised CREATE as a winning resource for STEM activities.



Visit [www.createeducation.com](http://www.createeducation.com), call 0800 7720 257 or 01257 276 116, or email [enquiriesgb@ultimaker.com](mailto:enquiriesgb@ultimaker.com)

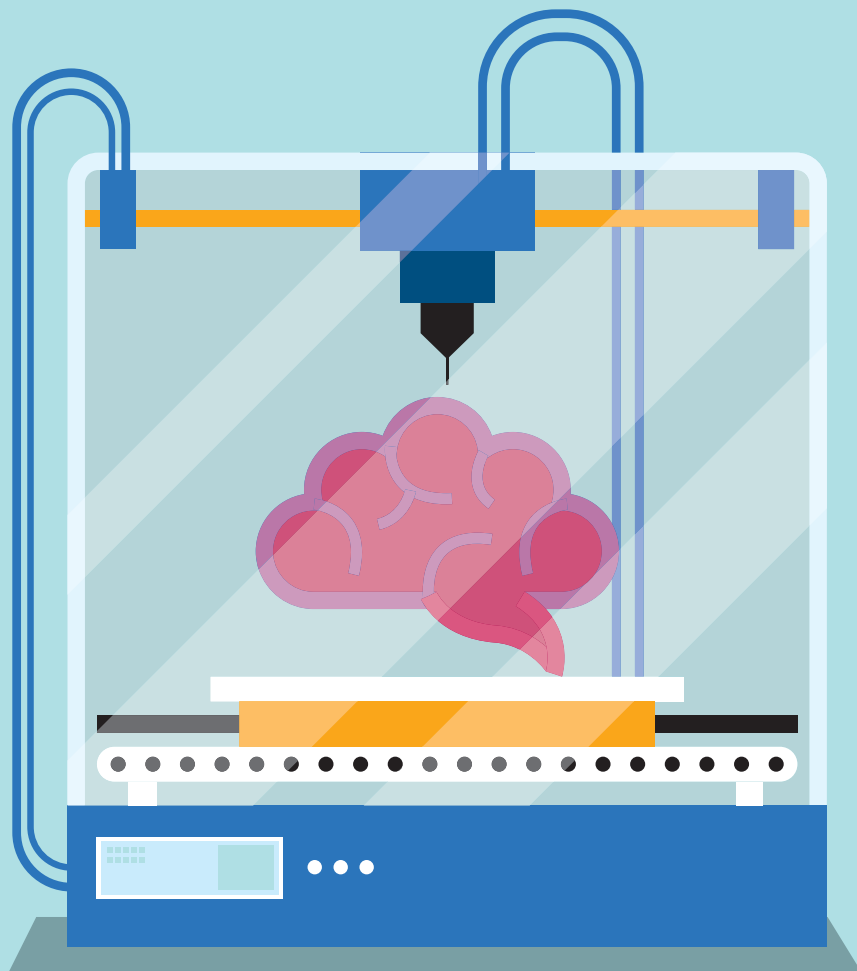
# CREATING the future

If you're still trying to work out how best to get your school and students involved with the 3D print revolution, **Paul Croft** has a suggestion...

**W**ith an ever increasing skills gap, particularly in STEAM related roles, the role of education has become even more significant in this rapidly evolving technological era. However, for teachers to prepare the

next generation to benefit from emerging technologies and develop the Industry 4.0 skills that employers desire, they need help and support. The CREATE Education Project was conceived and set up to meet this need, and has been recognised as a fantastic solution to help 3D printing and associated technologies gain traction and drive the

skills acquisition that's needed. The UK Additive Manufacturing Strategy, part of the Industrial Strategy, has identified education and skills as a key issue – and we are already collaborating on a number of levels to address this challenge and ensure the next generation can reap the learning benefits on offer.





## What is it?

The CREATE Education Project is an open source community resource for 3D printing in education, accessible to all – free of charge – at [createeducation.com](http://createeducation.com)

This collaborative platform provides free resources and support to help educators to introduce and embed 3D printing technology in the classroom. These include professional development resources, lesson resources, technology and curriculum guides, project ideas and inspiration. Contributors and community members are provided with a network of people embracing the same passion for sharing and improving access to education.

Anyone can access all of the website page content, membership is free and all the resources are free to download for members. Community members can also access a no-obligation free 3D printer loan scheme. With this scheme they can borrow a 3D printer to deliver a project in their school, allowing all students to access and experience 3D printing.

## Who benefits?

The CREATE Education Project benefits all educators from preschool up to university level, along with home educators, community education projects and organisations delivering education projects and outreach such as museums and libraries.

Through the project, teachers and support staff are supplied with the ideas, resources, expertise, support and professional development they require, when they need it. The project is designed to offer complete flexibility to the educator. There are a wide range of different resource types available to suit the requirements of the user, and these are applicable to a wide range of subject areas and qualifications. Resources include PDF curriculum guides, videos, editable student worksheets, editable lesson powerpoints, schemes of works, lesson plans and step-by-step tutorials along with case studies suitable for teachers and students.

## How far does it reach?

A major benefit of the CREATE Education Project is our growing community of educators passionate about 3D printing. This community actively shares resources, along with project ideas and case studies through the blog. It's an endless source of inspiration, tried and tested classroom projects and activities, providing additional support

to the wider community. Many of our pioneering CREATE Education Hub schools are also providing community outreach and support as well as access to the 3D printing technology to their feeder schools, other schools in their cluster and their local community.

Teachers who are members of the CREATE Education Project are benefiting from ideas to help them find meaningful applications and to introduce the technology. Early adopters of the technology are now developing their pedagogy in order to fully embed the technology into their teaching practice, using 3D printing as a tool to engage and inspire students across all curriculum areas and age ranges. We have seen many innovative uses of the technology from our community, for example Lloyd Griffiths, a Design Technology Teacher at Newport High School developed and shared the files for this 3D printed model that demonstrates how the injection moulding manufacturing process works:

## What are people saying?

"The CREATE Education project has been an inspiration due to the range of projects showcased on the site; this motivates me to push the boundaries with our students in terms of their designing and use of 3D printing to realise their visions."

**Bradley Mellor C.Eng MIET, Head of Engineering – UTC Leeds**

**"Teachers need help and support to prepare the next generation..."**

"The Create Education Project is a powerhouse of knowledge, expertise, resources and connections that we have and will continue to draw upon to innovate and grow our ideas – they make the impossible, possible. Without the Create Education Project our ProtoGP Schools Kart Challenge would never have gotten off the ground!"

**Marilyn Comrie OBE – The Blair Project**

"I have been both a fan and collaborator of CREATE Education since I came across them in 2014. What impresses me is their selfless dedication to the objective of incorporating their technology into education. Working with educationalist, teachers and students of all ages they have both input and output ideas on how 3D printing can be used. Through their interaction they have developed free resources to support the student that fits the curriculum and works alongside a full range of disciplines.

The CREATE Education team have been and are instrumental in making 3D printing accessible to schools and students. They have not just gone into the market with a flashy brochure. They have gone into schools and rolled up their sleeves, learned at the chalk face and given back in terms of their education interface, product and software development. CREATE Education provides much more than just a 3D printer. From the printer itself to the software and the CREATE Education Community it is an interactive emersion."

**David Holloway OBE – The Ideas College**

## HOW CAN YOU GET INVOLVED?

- Visit [createeducation.com](http://createeducation.com) and sign up
- Browse the project ideas and resources and download any resources that you want to try
- Look at the blog to get further ideas and inspiration for projects
- Visit or talk to your local CREATE Education Project 3D printing hub or makerspace
- Borrow a 3D printer for a month to try out a project with your class
- Talk to the team and ask questions – they can offer technical, curriculum and product advice
- Share your 3D printing ideas and experiences with the community



## ABOUT THE AUTHOR



**Paul Croft is the founder of the CREATE Education Project**



# THE PARENT CONNECTION

**Mandy Sharp** explains how Humphrey Perkins School is using technology to help fill the information gap between home and school

**M**ention starting secondary school to many parents and you will see the worry in their faces as they display the uncertainty of the anxious times that lie ahead. Raising children is a job that's fraught with challenges, and the transition to secondary school brings with it the unknown; a new-found independence to which both child and parent must adjust.

However, with today's parents being more data savvy than ever, schools are increasingly looking at how technology can be used to reduce their anxiety – and increase their engagement – as children move to the next important stage of their education, through exams and on to further study.

## Parent power

It's no surprise that parents can find it extremely difficult to go from walking their child to primary school to virtually zero contact for up to six or seven hours per day in secondary school.

The impact of a strong parent-teacher relationship in the transition period can be considerable in determining a child's success in making the move – and for the many years that will follow. One way to nurture this is to give parents access to more information about what's happening at school.

At our school, we believe that putting data into the hands of parents is the way forward. By allowing parents to see real time information, accessible via a desktop or through an app on their smartphone or

tablet, we can give them the reassurance they need and then work with them to create the best learning environment for their child.

With smartphones delivering texts and emails around the clock, there is an expectation that information should be available 24/7. Our parents want to sit down during their lunch break or at the end of their day to see how their child is getting on or what equipment they need for tomorrow. They've told us it helps them feel that they are still involved.

Our app – we use the SIMS Parent app – links to information held within our school's management information system (MIS), so teachers can communicate with parents on a daily basis, if necessary, without adding to their workloads.



“We believe that putting data into the hands of parents is the way forwards...”



## Improving engagement

This new technology is making a real difference – in particular to parents of our Year 7 students, but we have 500 parents in total using the app, and we definitely are seeing the benefits.

Parents can spot immediately whether their child has turned up at school, what homework they have, as well as any equipment they need for the next day. They can also see details of their child's achievement or behaviour in lessons, so they can offer praise or support where needed from home.

This more regular contact through technology has helped to improve our ability to work with parents to ensure interventions are put in place quickly.

As the app gives parents access to the latest information from school, they can spot a drop in performance or behaviour and help us tackle it straight away. We had

one student whose behaviour had suddenly declined in English, for example. This sparked a conversation between parent and teacher soon afterwards, which confirmed the family had noticed similar incidences at home.

Because the parent was aware of the situation quickly, discussions took place and within a couple of lessons the student's behaviour was back on track.

## No shocks

Often, when there is a dip in behaviour it could be because the student has been unwell or that they are handling a family issue outside the classroom. With more regular contact, teachers and parents can keep each other informed if a student is having a bad day.

Parents tell us that one of the key advantages of using the SIMS Parent App is that they do not have the dreaded 'shock' moment at parents' evenings finding out

about a behavioural incident – or a great mark in a maths quiz – that they were previously unaware of. And for teachers, it means that they don't get the 'why didn't you tell us earlier?' scenario. Time at parents' evenings can now be used to have much more meaningful conversations about goals for the next term, what the student would like to achieve and how they will get there.

We've noticed that the app works wonders for older students too. Years 10 and 11 really want to do well in class as they have realised that their parents are more likely to give them permission to go out with their friends at the weekend if it is all good on the app. This is a great motivator.

Our parents absolutely love the new app and the results have been brilliant, so much so that we are now starting to roll out the SIMS Student app, which puts all the information students need in the palm of their hand. Giving students information on their own attendance and achievement is helping them learn valuable life-lessons, such as time-keeping and taking responsibility for remembering their PE kit, equipment needed for a school trip or cookery ingredients.

## Benefits for everyone

In my view, providing tools that enable teachers and parents to work together to support student progress should be at the top of a school's priority list. Once it is in place, parents can see whether their child is doing well, while they are still in the classroom.

The app is often parents' first port of call when they have a question about their child's progress and it's also their preferred method of contact with the school. The number of calls to the school office relating to homework, trips or day-to-day enquiries has reduced dramatically. We now get just one or two calls a week, as parents have all the information they need in their hands. This enables our staff to focus on completing other tasks.

While engaging parents isn't always easy to achieve at secondary school, using technology to put data in the hands of parents certainly pays off in our experience. It's had a positive impact on attendance and performance, as well as giving parents peace of mind, without impacting on the daily workload of our teachers.



## ABOUT THE AUTHOR



**Mandy Sharp is data and exams manager at Humphrey Perkins School. Find out more about the SIMS Parent app at [capita-sims.co.uk/Tech&InnovParentApp](https://capita-sims.co.uk/Tech&InnovParentApp)**



The new messaging app from  
Teachers2Parents

**Available Now!**



#### **Messages**

Update parents and guardians instantly with the option for replies



#### **Noticeboard**

Post custom notices informing parents and guardians of upcoming events



#### **Term Calendar**

Parents and guardians can keep up to date with your school's term calendar

Available now on Android and iOS



INFORMATION MANAGEMENT



# SchoolPod

An impressive and flexible web based information management system designed to save time and transform the way your school works.

## AT A GLANCE

- Intuitive, quick, safe and organised
- Enables schools to track pupil progress accurately and in real time
- Can be customised to meet an individual school's needs
- Instant communication with parents

## REVIEW BY JOHN DABELL



So often you can buy into something and end up with a whole bunch of features that you don't need or use. Off the shelf might sound like a quick fix – but if you are spending thousands on a school system then you need something that you can have a say in, so you can be sure it does what you want it to do. SchoolPod fills this need by providing a basic framework that schools can customise and adapt to meet their own particular needs. At last, a system that works for the people using it.

SchoolPod is built around a number of applications which are accessed from a personal homepage. You can choose up to 49 apps which put knowledge at your fingertips – these include all the basics that you would expect, but if what you are looking for isn't there then SchoolPod will build it in for you at no extra cost. Modules include attendance, reports, assessment, provision mapping, students, staff, census, auto timetable, and exams. There's more, too, such as a subject residual report module, P-Pod Timetable Return, attendance alerts, ILR module, Academies Trust module, and Parents' Evening module.

With SchoolPod it is easy to track every student's progress and ensure individual needs are understood. With real-time

performance data it is easy to follow progress, drill down into data, identify priorities and set targets. You can analyse progress for specific groups across a class, subject, year group or the whole school.

The system brings together timetable and attendance data, and behaviour management is enhanced, because SchoolPod allows you to record incidents quickly and easily. Real-time notifications can be sent to parents too, as well as informative reports to help them track their child's progress.

A management information system should be a tool for everyone to help make the complexities of school life far simpler and more practicable. With SchoolPod, staff members can have their own username and login (obviously with certain restrictions) so the system is being fed and supplied with information from lots of different sources, making it as effective as it is easy to navigate.

## TECHNOLOGY INNOVATION

### VERDICT

- ✓ Streamlines tasks and systems, and lightens workloads
- ✓ Highly user-friendly
- ✓ Competitively priced, including unlimited training and support at no extra cost
- ✓ Compatible with any internet-enabled device

### UPGRADE IF...

You are looking for a sophisticated, joined-up system that makes the management of information easy, exciting and not in the least bit daunting.



**SchoolPod**  
Management Information System

# A BREAKTHROUGH IN INDEPENDENT LEARNING

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Geoff Barton, General Secretary – ASCL

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# “Those who use it most see the greatest benefits”

Discover how GCSEPod has played a vital role in one school's impressive improvement story...

When James McAleese joined Mount Grace School as assistant head in 2015 his challenge was to embed digital learning across the school. Having regularly used GCSEPod at his previous school he knew that the resource could play a huge part in the digital transformation of Mount Grace.

However, faced with increasing budget constraints, James needed to think creatively; he decided to ask parents to try and meet the cost. So confident was he in the power of digital learning, he approached the then Year 11 parents to ask them to contribute towards the cost of a digital support package which included GCSEPod at the forefront together with Learners' Cloud.

“Roughly speaking it worked out about £10 per year per student, so I put it to the parents that for only £10 they could have a huge impact on their children's results and transform the way in which they learn,” said James.

Having enlisted some financial and emotional support of parents, James knew his plan must prove effective. “For it to work, it needs to be used,” he said. “So I made it my mission to ensure that everyone was exposed to it and encouraged and incentivised to use it.”

## Improved progress

Fast forward a few years and GCSEPod has become a cross curriculum resource which every Mount Grace student in Years 9, 10 and 11 has access to and is proactively encouraged to use both independently and to complete assigned tasks.

Inevitably, it is used by some more than others, however, those who use it the most see the greatest benefits, and James believes it is no coincidence that the highest using departments saw the biggest progress in last summer's exams.

He said: “Our English department were quick to embed GCSEPod into their schemes of work and it has become a key component of classroom learning and homework. The English Literature teachers set weekly assignments using the podcasts and it is little wonder that this one department has



‘podded’ more than a typical school of 1,200 students. But more importantly, our results in English Literature went through the roof and GCSEPod was a major contributory factor in this success.”

Keen to learn from the success of the English department and emulate it across the school James has tracked usage against individual results and worked with assigned ‘GCSEPod Stars’ to find out how they use the content to help others use it more efficiently.

## Gathered momentum

The school has adopted a RAG system in order to monitor weekly usage. James has set targets for the number of pods to be watched each week and rates usage against a traffic light system of red, amber and green. This simple technique alerts him immediately to any areas of concern, or indeed extra high usage, so he can begin to examine patterns emerging.

Interestingly, James made a conscious decision this academic year to stop extolling the benefits of GCSEPod in

order to gauge just how embedded it is amongst students and teachers.

He adds: “Without saying a word, I have watched usage increase week on week; a number of departments are now using it as their homework resource of choice and a growing number of students are using the pods daily to consolidate what they have learnt that day in school into a short, half-hour burst.”

For a resource which only two years ago was part-funded through a voluntary parental contribution, GCSEPod has quickly found a place in the heart of the school and is now the school's only online subscription.



Find out more at [gcsepod.com](http://gcsepod.com)



# The *generation* GAME

Technology has come a long way since 1988 – but are today's students any different from those of 30 years ago? **T&I** has been investigating...

**30**

years ago we didn't have the internet, email or mobile phones. Computers were in their early years and certainly weren't portable, and Stephen Hawking's *Brief History of Time* had only just been published. We've been through a lot of changes in three decades, then – but what about our students themselves? Are they any different? T&I asked a selection of edtech companies, and some common themes came out in their responses.

The first? Today's students are digital natives, comfortable with technology in ways that many teachers are still not. The impact that this has on the way they consume and obtain information is quite profound, says the education platform Classoos. "Today, children carry computers around in their pockets in the form of their smartphones, constantly accessing information, connecting with peers and the broader world, wherever they go. They

need educational materials that adapt to the way they interact with the world and how their minds work."

And indeed, according to Clevertouch, describing these young people as 'digital natives' doesn't go far enough. "Generation Z is wired differently. They have been exposed to socially connected digital technologies from birth. YouTube, SnapChat, Instagram, Minecraft – this is the world in which they live, play, innovate, collaborate, and learn; they are the first generation of social media natives."

## **Power and responsibility**

The growing prevalence of mental health issues amongst young people, the rise in sexting and the impact of cyber-bullying – to name just a few – are negative repercussions of our increased connectivity and are very real and present concerns for all the organisations we contacted. The average number of 'real-life' friends for a person is around 150, while the average number of Facebook friends is 338. But this increase doesn't automatically translate to more meaningful relationships.

"Through technology students are more connected than they have been in the past 30 years," explains Jason van Schie from People Diagnostix. "However, quantity is not the same as quality. Researchers have regularly demonstrated that the depth (not number) of relationships is one of the most important protectors of mental health. The World Health Organisation estimates depression will become the leading cause of the global disease burden by 2030. It is vital that more preventative efforts are made with adolescent

populations to protect their mental health, including assistance to support them in developing positive relationships."

Awareness of the potential pitfalls of a digitally connected environment adds another level of responsibility for teachers, says Smoothwall. "Although the internet is certainly a force for good, the proliferation of technologies and platforms means children are now more curious and have more avenues to explore this curiosity than before – it comes as no surprise at all that they now need more protection, too. It's no longer just about teaching basic road safety, sex education and how to eat well; informing children how to keep safe online and safeguarding them at school has become a priority."

## **Future skills**

Alongside the obvious priority of safeguarding, today's parents, teachers and policy makers are also presented with the challenge of preparing young people for a future that's looking very different from the one that seemed to be ahead of us 30 years ago. Unsurprisingly, given that many of the jobs now available didn't exist back then, skills are at the forefront of a lot of minds.

"It's not so much that students have changed, but rather that the situations and challenges they face have – dramatically," is the message from Edurio. "It's only natural that learners have evolved along with the education system. The challenge for educators is to be able to understand their students in a more sophisticated way. It's not enough to know whether or not they can solve that equation, we've got to know if they have the

"Generation Z is wired differently – they've been exposed to social media from birth..."

skills, confidence and motivation to apply their knowledge in an ever-changing professional world."

Microbit's Gareth James also believes that the skills that students will need are not only different from those most valued 30 years ago but will continue to shift. "Connectivity means many people will be able to work from, or create business anywhere," he points out. "Adaptability is vital - the average Briton will work in six different job roles spanning six different companies in their working life (Telegraph, 2015). There is massive demand for digital competencies and skills; therefore, it is vital that students are digitally adept, otherwise they will miss out."

### Great expectations

Another common theme to emerge was to do with expectations. Technology lends an

immediacy to communications - social and otherwise - and Capita Sims' Graham Cooper, for example, cites the effect that this had had on young people's appetite for information. "Today's students live in a 24/7 environment and they are used to constant feedback," he states. "Rewind three decades and a learner's only insight into their achievements was opening an exam results letter. Now they are keen for information to be at their fingertips."

Students' attitudes have also changed with regard to the methodology that teachers use. "Thanks to digital media, mobile phones and tablets, today's teens have grown up with a non-stop flow of information and entertainment, along with a level of convenience and instant gratification never before seen in history," points out Sam Labs' Joachim Horn. "Young people's expectations for teachers to *entertain*, in addition to

teaching, is an inevitable product of growing up in the digital age. The good news is that there is an increasing number of solutions that give teachers fantastically engaging experiences to share in their classrooms, especially in STEAM and coding."

### Looking good...

It's hard to anticipate exactly how far schools, classroom, homework and exams might transform over the forthcoming decades; but whatever happens, we can be reasonably sure that technology will have a powerful role to play in continuing to shape the way we share, teach and learn. And luckily, there are plenty of passionate individuals and companies out there, keen to ensure that this ultimately results in better outcomes, and a more fulfilling future, for everyone.





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Kris Jobson, Director of ICT

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# A perfect team

With the help of RM Education, Newent Community School and Sixth Form Centre has completely restructured its IT support – and reduced operating costs into the bargain

Newent Community School and Sixth Form Centre originally employed a team of five ICT support staff, including a senior technician (network manager role) and four junior technicians. They undertook a process of reviewing their IT support team size and structure to help reduce operating costs. As part of the planned staff reduction, and several employees moving onto pastures new, the team quickly reduced to just two, and the school started to see knowledge gaps. There was little or no formal network documentation available to the remaining staff, and parts of the network became unstable.

## New principal, new principles

In September 2016 Alan Johnson took over as the new principal and, having experienced the benefits of outsourcing ICT at a previous school, requested that the team find an expert to help them get back to stability. Ann Price, business manager, turned to several of the large IT support service providers for quotes and to explore the benefits they could bring to the school. There were significant differences in price and service, and she commented that other providers were cheaper than RM, but she didn't feel like they had a good overview of her needs; they were just going to put another body on the ground.

"RM's daily system monitoring, remote management service and access to specialist engineers was the safety net that we needed," explains Ann. "Meeting our Relationship Manager gave us even more comfort that we would be able to find our way through this situation quickly."

Kevin Robinson, the RM Service Architect, created a service that ensured Ann got the flexibility she needed through partnership working. They agreed that the current IT staff needed to be developed, and Kevin helped her shape a support service that would ensure stability for the school now, and help to understand the IT team's strengths and weaknesses and develop their skills in the areas where they aren't yet confident.

"We are now aware where issues are," says Ann. "RM has helped us with a technical and skills audit, helped to review job descriptions, and created training plans for our IT team."



## Setting a new 'normal'

RM provided a senior engineer to work directly with the IT team. With a new helpdesk and team of RM engineers to support them, the school technicians are now learning that they don't have to waste time trying to fix everything themselves.

"Our school previously had a break-fix mentality," comments Ann. "Something would break and we would call on our senior technician to fix it. With RM, our support is now proactive, so we are getting used to having fewer issues in the first place, and our technicians are well supported

by RM. It's a mind-set shift, but our confidence level is now much higher."

"Our technicians feel that RM are really supporting them," she concludes. "They are learning which calls they are best placed to fix themselves, and which issues they can be proud to have helped resolve quickly because they were escalated to RM specialists appropriately."

We are very happy with how the service is going overall, and how we are now changing IT perceptions and working practices with support from RM."

For more information on how RM could support your IT team, visit [www.rm.com/rmsupport](http://www.rm.com/rmsupport)



Is a lack of creativity in the computing curriculum contributing to the UK's serious skills gap? **Shanneila Saeed** thinks so...

In a panel debate we had recently with young people, students indicated that the lack of creativity in computing education demotivates them because they are not given the chance to use their own ideas and come up with their own solutions. Professionals working in the higher education sphere agree this is one of the biggest drawbacks of the new curriculum.

One of the other reasons students have given for not wanting to continue with computing post-GCSE is a lack of understanding about how the creative elements of computer science can be harnessed and put into practice. The more enthused students are able to see past the barriers of the curriculum and recognise that computer science is made up of a number of skills that could lead to creative and inspiring careers within the gaming and technology industries, but their peers can struggle to grasp this. So, if the computing curriculum is missing creativity

– and this is leading to a skills shortage – what can we do about it?

### A stale approach

Gamification is a popular buzzword within the education sector, and I question why we don't use it more. Learning through play has been well documented to improve understanding and engagement with a subject, especially at early years. But we can take elements of this and apply it to how we approach computing well into secondary schooling and beyond.

Perhaps it's a stigma that games are just for 'playtime' that we must break; because in fact, there are important lessons that can be learned through a gamified approach to education, such as learning to fail and solving problems. This is a big part of what games development is, and we need to inspire that curiosity to find solutions to support students' learning and continued interest in careers within the games and technology industries.

A few of our panellists shared stories about local businesses coming in to share how computer science can be applied at work, and almost all agreed this would be something they would feel inspired and motivated by.

According to secondary teachers, a range of project work is needed to mimic how industry works, develop team building and collaboration skills and harness innovation. Unfortunately, the new computing GCSE specifications don't allow for this, with 20 per cent of the assessment being practical programming. The environment is controlled, and students are not allowed to speak or use the internet, meaning there is no chance for teamwork.

These stale conditions put students off because they associate programming with their experience of computing GCSE, meaning fewer students will continue to study the subject at A Level and into adulthood. The students also cited the lack of computer science at an earlier age. By the



time they reach secondary school and are expected to make their GCSE choices, they have come to the subject too late to feel enthused by it.

### Training and development

For inspired students, we need inspired teachers. From the government's point of view, the change to the curriculum was needed – and although it has now created this challenge where teachers feel under supported in delivering the content, sustained training courses that span across terms can help. The argument is made that longer, weekly sessions as opposed to ad hoc training, will allow teachers to practise in between. This also allows the content to adapt to the changes in industry to ensure we are providing relevant and up-to-date courses for educators.

“There are important lessons to be learnt from gamification...”

However, although schools value this suggestion and support it, putting it into practice is the difficulty. Even with the increasing amount of free resources, training workshops and support available to teachers, the issue is the time available at ground level. Schools often won't have the budget to allow teachers to attend these events, so the result is that many attend or research in their own time. Already strapped for time, our teachers simply can't fit these opportunities into their schedules between running lessons and paperwork.

This is where both school leaders and teachers push for government to make a funding stream available to allow for professional development courses. With access to these, teachers will begin to feel

more confident in their own knowledge of computing.

In fact, existing reports from the 2015 London Schools Excellence Fund showed that programmes that encourage sharing best practice, such as Digital Schoolhouse, increased teachers' ability to embed computing concepts in a way that avoids being “dry and one-dimensional”. This positive effect was also seen in pupils' confidence, engagement and enthusiasm with computing, which had no significant gender gap within these results. Secondary school leaders also reported that the programme was seen to help “encourage girls into computing”, which has to be a good thing.

### The industry link

There are already routes available to make computing an engaging, fun and aspirational subject for young people. Beyond hands-on workshops for students and continued professional development (CPD) courses for teachers, the gaming and technology industries have shown a keen interest in stronger ties with education and offer work experience such as placements, internships and apprenticeships in order to encourage a more diverse

and enthused workforce for the future. However, if you ask students themselves they don't seem to see these routes into industry and rarely have they been visited by their local businesses.

Bringing together industry and education is a crucial step in encouraging young people to see computer science as an important element of their future careers. Ultimately though, we also need the support of government for significant changes to be made to allow the curriculum to be taught in more creative ways, encouraging teamwork and benefitting from gamification techniques.

## ABOUT THE AUTHOR



**Shahneila Saeed is a former teacher and head of computing, and now head of education at video games trade body UK Interactive Entertainment Association Ltd. (Ukie) and director of the Digital Schoolhouse programme ([digitalschoolhouse.org.uk](http://digitalschoolhouse.org.uk))**





# GRAND DESIGNS

With the latest 3D printing technology, and students' own imaginations, the learning potential is practically limitless, says **Andrew Cluney**

## 3D

printing has been around in schools for long enough now that we all have at

least a vague idea of how it can be used to break down barriers in innovation in education, particularly with regard to STEM subjects.

In biology, cross sections of organs or the heart can be created and dissected, and in chemistry, viruses and molecules can be made to investigate their composition – but 3D printing can also be used to really bring learning to life in non-STEM subjects like English, music and geography, to name but a few.

Imagine delivering a Key Stage Three scheme of work centred around Michael Morpurgo's classic novel, *Private Peaceful*, and being able to display models of tanks, bayonets and gas masks to really engage pupils and spark their imagination and intrigue. Or how about teaching William Golding's *Lord of the Flies* and having the infamous conch shell to hand? What might it mean for pupils to have the dagger

from *Macbeth*, Yorick's notorious skull from *Hamlet*, or even the crossbow of Shakespeare's *Henry V* made real in the classroom?

### Brilliant creations

And it doesn't stop there. In food technology, pupils can be encouraged to channel their inner Great British Bake Off contestant and design their own show stopping creation, with bespoke cake, chocolate or even ice lolly moulds created in 3D. Alternatively, designs can even be made for new cooking tools and utensils – left-handed potato peeler anyone?

3D printing is a perfect partner for geography, too, offering the option of creating a 3D printed map wherein pupils can visibly see and even feel the topography of the land, or visually bringing to life the inner workings of a volcano or the earth and all the layers within it, down to its molten core. With a 3D printer, you could replicate physical, coastal, and river landscapes or even recreate an ecosystem and visually showcase the innate workings of these differing habitats.



In music classes, instruments can be created in 3D, with specifications for a 3D printed recorder readily available to download online. Depending on skill and budget, some have even gone so far as to create a guitar and even a violin in 3D! For those teachers who love record players (and hipster youngsters for whom only vinyl will do), audio files can be converted into 3D printable records too.





they had already been doing, virtually, for years, on the insanely popular building game Minecraft.

With the advent of 3D printing, experiential learning can be extended to the entire curriculum. We can all picture models of the atom or skeletons hanging in the science lab, but we are now able to make any shape quickly in the classroom. Instead of just looking at a plastic skull, we can make alternative versions to handle, rotate, measure and test to better understand why our heads are shaped the way they are. Instead of just working with the equations that calculate the strength of different shaped beams in a bridge, we can make them to any specification that we want and measure how strong or flexible they are. Instead of just talking about William Shakespeare, we can bring to life his masterpieces for all to see. The possibilities really are endless.

## An engine of discovery

Having said all that, for 3D printing to really work in the classroom, it's important to remain focused on the objective of the lesson itself. A 3D printer isn't the focal point of the learning; it's a resource to help the teacher and their pupils meet the objectives. However, if a traditional printer is a 'tool' in the same way a hammer is a tool, then a 3D printer is something else entirely. It's more like an engine – a driving force that allows students to break down the boundaries of their own imagination and put their insights to use in real-world applications.

Teachers have known for generations that students learn best by *doing* something, whether it is hands-on problem solving or a science lab exercise. The experience itself helps to make knowledge stick, which means experiential learning is a more effective way to gain understanding of materials than lecture-based discussions.

The world of 3D is bringing concepts to life and in forward thinking schools around the globe, teachers are employing 3D printers to inspire and educate their pupils.

## Training grounds

Schoolchildren eat up 3D technology for one reason: they have already been introduced to the technology at home. One of the most popular types of games, the first-person shooter, is basically a 3D rendering of an environment. In the latest generation of gaming consoles, kids get to engage these worlds even more closely through virtual

reality, making the 3D world even more immediate.

This 'training' creates a natural camaraderie between the modern student and 3D technology. When 3D printing was introduced to students, they were quickly printing out prototypes and creating new versions of examples – it was something

## ABOUT THE AUTHOR

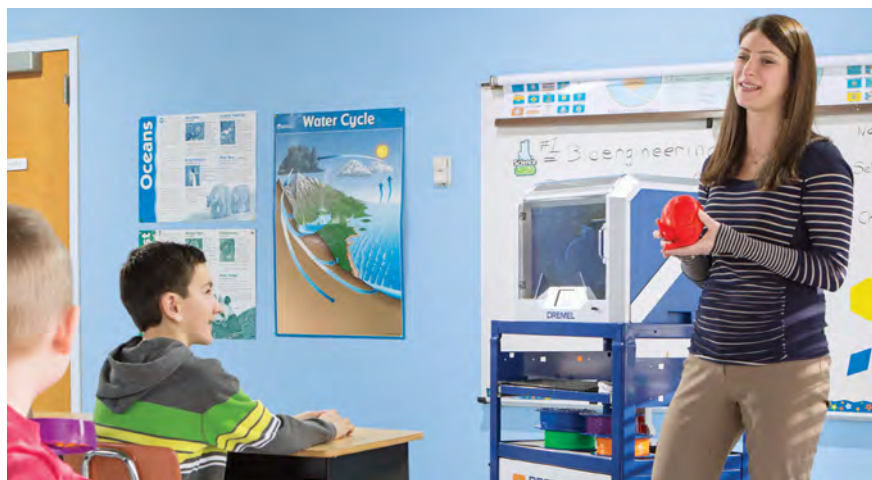


**Andrew Cluney is Regional Brand Manager at Dremel UK**  
([dremeleurope.com/gb/en](http://dremeleurope.com/gb/en)).

For more information about 3D printing in the classroom, see Dremel's videos on YouTube ([tinyurl.com/tsdremel](http://tinyurl.com/tsdremel)).

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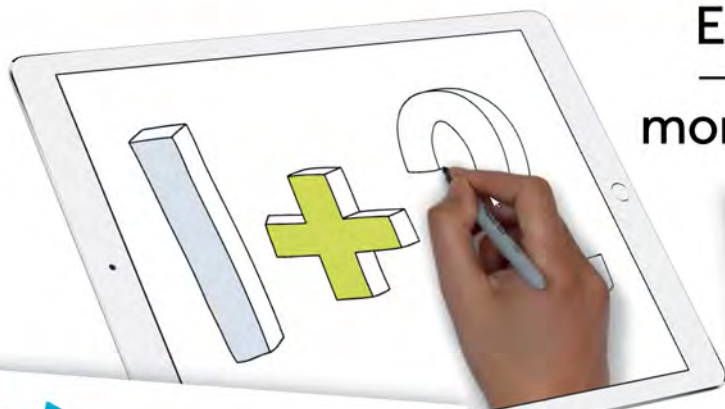
**“A 3D printer isn't the focal point of the learning; it's a resource to help”**





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## REVIEW BY JOHN DABELL

We have all been subjected to 'death by PowerPoint' – sitting through presentations that have all the personality of a paper cup. Bullet points are old school; it's time to move on. Research tells us that 70% of learning is attained visually, so it's entirely logical to exploit visual images when we are trying to convey information and concepts. This is why 'explainer videos' are changing the education landscape.

Essentially, these are short, uncomplicated and entertaining animated online videos that 'explain' an idea, product or service using a sketching hand. They tend to feature cartoon-style illustrated graphics and characters, a voiceover, and maybe some music or sound effects – and they certainly pack a big punch. Used by marketing and sales departments for a decade, explainer videos are now gaining popularity in classrooms, too; the RSA Animate series has been hugely successful, for example.

You might think that to make whiteboard animation happen in your classroom you need to be a top doodler but you don't. There is scintillating software out there we can use to create our own explainer videos so we can seriously enhance our lessons, make them different and fun, and

put children in a great mood for learning. VideoScribe offers everything you need to deliver content and ideas within a lesson that will have real impact. The software houses a huge media library of images and soundtracks that you can combine to create your own, engaging videos.

Although this is sophisticated software with layers of intricate features that are 'pro' level, at its simplest VideoScribe enables you to create a personalised polished 'scribe' in next to no time without hours of genning up. Select a visual or chart, add some text, choose some music, voice record if you like and then animate. Editing text and images, changing graphic filters and tinkering with drawing options is a breeze. If you want to go deeper then you can use tools for more detailed DIY projects.

With so much evidence to support deeper learning, engagement and better recall of information, video explainers are a must-have for joined-up thinking. If your school hasn't incorporated explainer videos into its classrooms, now is the time to ask, "why not?". VideoScribe is surprisingly simple and incredibly powerful – and proves it isn't just what you're told, it's what you can recall and understand that matters.

## TECHNOLOGY INNOVATION

### VERDICT

- ✓ Cool, quirky, transfixing and entertaining – and no skill required!
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# *Why you should start blogging, today!*

With clear benefits for everyone involved, there's never been a better time to take your school into the blogosphere, suggests **Terry Freedman**

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### Real advantages

Coming up with copy for the school blog can become an engaging writing assignment for pupils, with real life application. If, for example, there has been a school visit, one or two young people could write about that while another couple provide photos to illustrate the article.

Another option is for teachers to set up a rota whereby in each lesson there is a class scribe whose job it is to summarise the session and post the notes online. That not only helps students who were away when the lesson took place, but also serves as information to prospective pupils about what is covered in the scheme of work for the subject in question.

The overarching advantage for students is that with a blog, they are writing for a real audience – it gives them an authentic purpose, and is therefore really great for increasing motivation.

Parents and carers – both current and prospective – benefit too. They will be seeing up to date information about the school's activities. If the termly newsletter to parents is posted online in the form of a blog, parents will be able to see it and read it anywhere, including on their phones – much more convenient than a paper copy, which is easily lost, if it even manages to make it home in the first place.

If the blog is updated at least once a week it will, hopefully, also confirm to parents that they have made the right choice of school for their children: a vibrant website often reflects a vibrant organisation.

### A clear selling point

The school benefits from a school blog in a variety of ways. First, it is much easier to keep a blog updated than website pages, because you just type your text and upload your illustrations into a template, then click on 'publish'. Secondly, it's possible to allocate different permissions to different people and

groups of people, thereby reducing the workload of any one individual. For instance, selected students (the school's digital champions perhaps?) could be given permission to post articles in 'review' mode only. A team of teachers, or even senior pupils, could be given permission to look at such articles and publish them if they are up to scratch.

Thirdly, the blog acts as a marketing platform, or can do, without being pushy. For example, if the blog features articles by local councillors and business people and other locals, it is more likely to be seen as part of the community. After all, marketing is all about building relationships with potential customers.

And finally, unlike a static website, a blog has the potential to involve everyone in the whole school rather than just one or two all-powerful 'webmasters'.

It might help to think of the school blog as being a little like a school play. As well as the relatively few actors on the stage, you have to have people to do a lot of work behind the scenes. A good blog involves not only writing, but illustrations, news, interviews, reviews, maybe even competitions. It's collaboration in action.

What are you waiting for?



### ABOUT THE AUTHOR



**Terry Freedman**  
publishes the **ICT & Computing in Education** website at [ictineducation.org](http://ictineducation.org). His guide to getting the most out of education conferences is available on Amazon.



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EDUQ&amp;A

# “It’s not just about selling technology”

**Amber Smith**, director of sales at Ebuyer.com, explains how schools can make the most of their IT procurement budget.



## **T&I What are the main challenges schools face when sourcing IT?**

**AS** Without doubt it is making the most of their budget. But it is also ensuring the devices and applications they buy are the best fit for their school. That their network is able to cope with the increased demand and that teachers and pupils are able to get the maximum benefit from their new devices and software.

## **How does Ebuyer approach selling IT to schools?**

It’s not just about selling technology. We can tailor the solutions we provide to the school’s budget. But we like to go further than just advising on products. We will come into the school and train teachers and pupils on how to get the most from their new devices. We will also install and set up the devices and make sure they are secure and ready to use.

## **How can Ebuyer support schools with their IT procurement?**

We work successfully with schools and colleges of all sizes by providing customised IT packages. We firmly believe in providing schools with the tools they need to make the most of digital technology. We have a dedicated Education Team able to work with all academic institutions, whether they need a single tablet, a suite of laptops or a completely new infrastructure complete with servers, storage, and software licensing.

## **Is leasing a better option than buying?**

It can be. With our partner Shire Leasing we can provide a parental contribution programme. Parents pay a small monthly leasing fee for their child’s device. Pupils can use the device at home as well as at school.

Parents can choose to upgrade the device every year if they wish. This way of leasing IT equipment is very cost effective for schools and really helps to maximise their budget.

## **What about IT for different age groups?**

IT needs will differ between age groups. Younger children may need tablets and apps for maths and English for example. High school pupils will probably need laptops and apps to help with research. Students and teachers in college will need training and advice on making the best use of Microsoft Office 365. At Ebuyer we can provide bespoke solutions for all age groups and academic institutions.

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# Support for Success

New research from **RM** reveals some fascinating insights into the changing face of IT needs in schools

In an education landscape where restricted budgets remain the biggest challenge for UK schools, gaining maximum value from ICT spend is still a key priority for today's ICT leaders

Recent research conducted by RM Education into the external ICT support marketplace, which surveyed ICT leaders at over 300 maintained secondary schools across the UK, revealed some interesting insights into the way schools are managing their IT support services, both now and into the future.

RM's research reflected that while average network team sizes comprise around four or five internal network staff, there is an increasing expectation from ICT leaders that due to continued budgetary pressures, network team sizes will fall over the next two years; the only exception being in schools that already have some significant external support with their ICT provision, where it is expected that in some instances,

network team sizes may actually increase.

However, less than a fifth of those surveyed reported using a fully managed service, and over two thirds of schools said they prefer a modular approach where they can select specific support options that best suit the unique needs of their school, its pedagogy and its chosen technologies.

## Plan to succeed

"The prevalence of cloud technologies is making lives much easier for network teams," says Chris Burgess, senior product manager at RM Education, "They no longer need to manage kit, install updates, or, in most cases, fix servers, as this can all be done much more cost effectively through cloud technologies.

"Naturally, this has impacted on the amount of network staff required in a typical secondary school, so it's unsurprising that most schools are expecting their network teams to shrink over the next few years.

This trend is also being driven by BYOD implementation becoming increasingly widespread, coupled with things like enhanced system software deployments and data management implications such as the new GDPR requirements.

"However, while a smaller network team size can help alleviate some of these budgetary pressures, it can also decrease the capacity and knowledge held within an onsite team to deal with the volume and range of support queries they receive each day."

Chris suggests that an external support service can fill this deficit and help schools to achieve their ICT needs by bringing in the knowledge and experience of a wide pool of external specialists, enabling existing network teams of any size to access support and freeing them up to focus on supporting teaching staff with classroom technologies.

"Network managers are rightly starting to look at ways to reduce their workload and free up more of their time, so that they can reinvest those resources into making the most of technology in the school and staying on top of technology trends," Chris points out.

"This is an area which does need much greater focus, so while budgetary pressures are the main driver to an ICT support service, freeing up much-needed time to help develop teachers' skills and give them more confidence with technology in the classroom is also becoming a priority."

## Modular options

As this research has indicated, schools are increasingly seeking modular support, and their ICT leaders are therefore focusing on exploring flexible and scalable solutions that will best complement their existing – albeit shrinking – network teams.

So what are the options for schools taking this approach? The first is an escalation support model where schools can select specific support or functions; this approach can be particularly beneficial where a network team is small and there is a clear gap in the technology knowledge required to perform a specific task, such as migration from Microsoft to Google.

If an additional level of support were required, schools could also explore proactive remote services which are focused on freeing up network teams by performing automated or standardised tasks such as system updates and security checks; tasks which are necessary, but often overlooked when network teams are busy firefighting other, more pressing issues.

Building on the proactive service model, schools could also explore remote network management services, which can help them



## “The prevalence of cloud technologies is making lives much easier for network teams...”

to stabilise their costs, widen their internal knowledge bank and, crucially, transfer the risks associated with day-to-day mishaps to the service provider.

The survey also asked respondents what elements of ICT support were most beneficial to their school; the majority reported that the provision of unlimited usage, multiple

platform coverage and expert technical knowledge were key. Respondents also indicated that their school is most likely to use native tools from Microsoft and Google for identity and access management.

“By conducting this latest research, we wanted to explore the current landscape of school IT and the issues that were most

important to ICT leaders,” concludes Chris. “The results reflect to us that budgetary pressures continue to drive ICT leaders to explore options that could offer them much greater security and value for money. Conversely, we understand that schools are reluctant to be tied into a contract that isn’t specifically tailored to their needs. Therefore, we anticipate that modular support models which are flexible and scalable will begin to take on much more prevalence over the next 12 to 24 months.”

**For more information on ICT support options, visit [www.rm.com/products](http://www.rm.com/products)**





# EXPERIENCE THE IMPOSSIBLE...

Virtual and augmented reality technology has the power to transform outcomes, says **Nik Tuson** – but only with a carefully planned implementation strategy

In today's digital world, finding new ways to engage students is ever more difficult. When home technologies such as mobile phones, tablets and games consoles are highly advanced, widely available and hugely popular with even very young children, finding educational engagement with technology in the classroom can be even harder, especially if the kinds of technology used there are less engaging than those to which children have access at home. Virtual and augmented technology has been available for several years, but it is only recently – towards the end of 2016 – that it has developed to a level that will now start to rapidly penetrate the consumer space. So, what can virtual reality offer education?

Virtual reality, by its pure definition, can deliver experiences and interactions for students that are either not practical or not possible in the 'real world', and provides an unparalleled way to immerse and captivate

students of all ages. It helps students feel immersed in an experience, gripping their imagination and stimulating thought in ways not achievable with traditional books, pictures or videos, and facilitates a far higher level of knowledge retention. Enhancing and extending the learning experience is at the heart of what VR can offer students – indeed, it's possibly one of the most powerful of all technologies, that could help change how we learn forever.

As already mentioned, with virtual reality, students can visit places not practical, or even possible, in real life, all from the safety of the classroom. Imagine exploring the inside of a blood vessel, the structure of an atom, the depths of the ocean, or the surface of the moon! With VR, places can be explored as if you were actually there, and students can experience and interact with creatures they will likely never see in their lifetimes. Virtual reality even allows us to put children in simulated dangerous and compromising

situations, in places they should never have to experience in the real world, and from this they can learn empathy, safety and emotional management, developing an understanding that is simply unobtainable from traditional media. For example, consider what a student could gain from standing in the trenches during World War 1 – such an experience could be life changing.

## Plan your strategy

Before adopting a brand-new technology like virtual reality into the classroom, a number of key questions need to be considered:

- Why do we need virtual reality?
- What purpose and function will it fulfil?
- How will the technology be used and managed?
- How will these devices fit into our existing ICT resources and at what cost?
- How will we train our teachers to use VR?



## 9 POINTS TO CONSIDER WHEN INVESTING IN VR

- **Understand why you want to implement this technology in your school**
- **Set your goals, define your success criteria and know how to measure them**
- **Research your options, look at the options available today and seek advice from your technology supplier**
- **Plan your implementation and understand the requirements of the technology and your infrastructure**
- **Consider how your teachers will manage and use the technology within the classroom**
- **Understand how you will use VR to supplement your curriculum teaching**
- **Run pilot trials to test out the technology and see what feedback your teachers and students provide**
- **Ensure you have provisioned sufficient training and ongoing support**
- **Review your project with a view to understanding if your goals were met**

investment is how they will be used to learn, and how they will fit into curriculum lessons. The initial queries for suppliers are often along the lines of, "What content do you have available, and how does that fit with my curriculum?" However, while that would typically be a great question to ask about resources, with VR it may not be the best one; we have already seen that the fundamental educational benefit for its use comes in the form of immersion and engagement, from which students derive a much deeper understanding and greater knowledge retention.

### Plan to succeed

A better question to ask your VR supplier, then, might be 'How can I use this technology in my lessons to increase engagement and improve student outcomes?' Virtual reality allows us to provide unique experiences for students, such as environments, locations or objects, in ways that they may never experience in life. Investing in educational technology means investing in student development. Measuring this can be difficult, but some clearly defined goals, even subtle ones such as better engagement in class or a noticeable change in motivation, can be highly valuable and ultimately will yield results for improved student outcomes over time.

In conclusion, properly implemented, virtual reality can be an incredible learning

tool to help guide students through complex topics, empathise and understand emotion, and give them a view of the amazing world in which we live, unlocking creativity and imagination that helps create a foundation for success. VR truly is a groundbreaking innovation, with so many ways to help augment traditional teaching methodologies and make a fundamental impact on how students learn and retain knowledge. However, make no mistake, this technology is in its infancy, and it will grow and change rapidly. Understanding how virtual and augmented reality can fit into a traditional classroom environment should be of primary concern. A well-conceived and properly executed plan, with the right technology, could deliver incredible results. A poorly thought through strategy and project implementation will almost certainly fail. Whatever your plans for VR and AR in your school, remember that all your research, planning, implementation and training will have an impact on student development. It is simply a matter of how well you do this that will define the level of that success, and ultimately the increase in student outcomes.

## ABOUT THE AUTHOR

**Nik Tuson is managing director at Avantis, which has developed ClassVR – a virtual reality system designed specifically for education, which comes complete with hardware, software, curriculum linked activities and lesson plans. ([avantiseducation.com](http://avantiseducation.com))**



Considering these questions and more, and fully understanding how virtual reality could and should be used in an educational institution, is essential. It's a technology that can open up a wide range of concerns and fears, from health and safety, to emotional well-being. There are many important factors to consider, such as the long-term effect on children's vision, the transfer and spread of diseases from the shared use of headsets or the emotional development of children using immersive and sensory manipulation. Careful consideration should be given to these issues, and strategies to address them, before any equipment is purchased and used.

Devices and management systems are only a part of the equation. What will likely lead most of the decisions around





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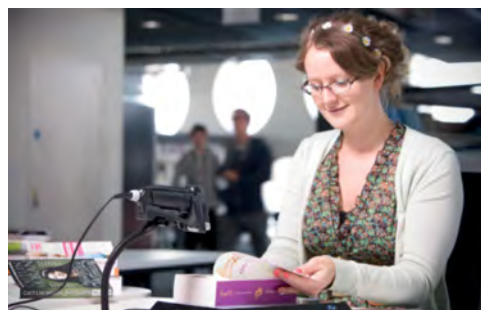
## How can D-Tech solutions help you to save money?

Even the most basic RFID security solution will be an effective preventative measure in the loss of books and quickly pays for itself. Depending on the size of your library a self-service checkout may be beneficial, allowing more efficient use of

staff resources, but even a librarian operated staff pad enables multi-checkout and saves time and effort. Preventing losses and working smarter are both key objectives for school libraries working under limited budgets.

## Why D-Tech?

The company's industry-leading, innovative technologies, and products alone are a good enough reason to choose D-Tech International, especially when added to its competitive pricing. D-Tech's customer care is recognised throughout the library sector for its excellent quality. Quick response times and sector knowledge that facilitates on-going value for money through installation improvements ensure D-Tech customers aren't saddled with defunct solutions a few years after installation.



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## Case Study

**Asa Nylinder**, librarian at Rivers Academy, West London, explains how D-Tech International's library security has improved her library's efficiency

## Why we needed library security

A lot of the pupils at the school were new to the concept of a library and the loan process. Subsequently, the school was purchasing stock but suffering significant losses through missing books. The security gates have provided a very good return on investment for us. We can divert resources that would have been spent on replacement books to purchasing new stock, and our library will continue to grow. The pupils quickly adapted to always checking out books.

## Why we chose D-Tech International

I have been really impressed with D-Tech International, on many levels. Firstly, they are very competitive in price. We



approached a range of companies when we were originally looking for a supplier, and D-Tech's one-off equipment costs were very competitive; the ongoing costs of RFID tags were also cheaper than their competitors.

Providing a two-year warranty as opposed to what appears to be the industry standard of one year, clinched the deal for me.

## Why we recommend D-Tech to other schools

The other thing that sets D-Tech apart is its exemplary customer service. Whenever we have had an issue, they have responded immediately, and the team has worked hard to solve the problem even when it has been a third-party fault. Online and telephone support has been excellent, but it is the speed at which they send an engineer on-site that has impressed me most. I would recommend D-Tech to any school seeking a reliable security solution with a rapid ROI.

To find out more call: 01394 420077 email: [info@d-techinternational.com](mailto:info@d-techinternational.com) visit: [d-techinternational.com](http://d-techinternational.com)



# Practical MAGIC

Hands on learning leads to deeper science understanding, says **Adam Little** – so how can we make sure we're delivering it well?

**A**re we doing a practical today?" How many times do students approach your lab or classroom and ask this question? When I was first starting out in my career I loved it when I could respond with a resounding, "Oh, yes!" In those days, I was more concerned about behaviour and hoping the students would understand something I said, and didn't really think about why we were doing the practical, or what I wanted the students to get out of it. Many people starting out teaching science feel the same. With so much curriculum content to cover, practical science doesn't always get the time it deserves.

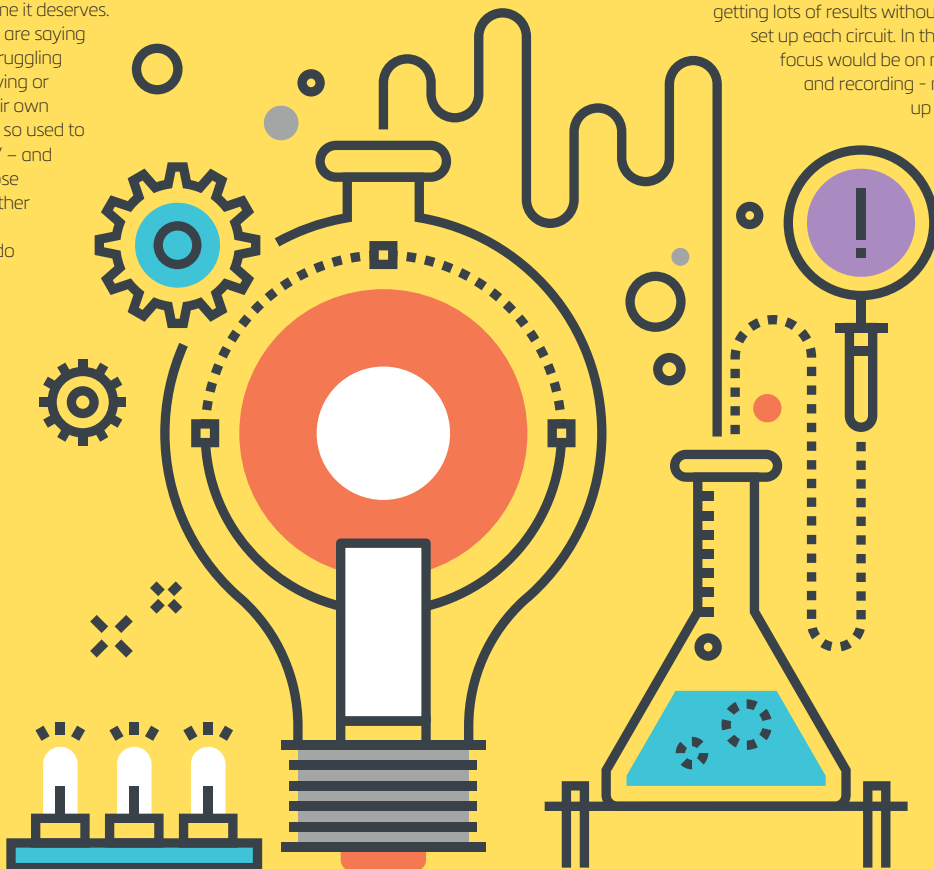
Many universities are saying students arrive struggling with problem solving or at developing their own ideas, as they are so used to following 'recipes' – and this applies to those studying things other than science, too. So what can we do about it?

## Gatsby's benchmarks

Practical science is key when it comes to science teaching. In fact, there has just been a report released by Gatsby written by Sir John Holman looking at 'Good Practical Science', which contains ten benchmarks to ensure students have the best experience and that science practicals are being used effectively. From personal experience, I used to do practical lessons with students where they followed instructions, gained the results that were expected and didn't really garner any major understanding, other than proving Ohm's Law for the millionth time – as if it's

never been proven before! It lacked a set purpose, and wasn't planned as well as it could have been.

There is often the pressure to 'do the whole practical' – but by being choosier about what we do, with specific learning outcomes for practical work, students can get more from an activity. Back to our Ohm's law practical, for example, if students are investigating a range of different wires, and they have set up a circuit before to measure resistance, they might not need to do it again. Sets of circuits, with different wires, could be placed around the room, all ready to go, with the students moving around to make their measurements, getting lots of results without having to set up each circuit. In this case, the focus would be on measuring and recording – not on setting up the practical.





## Demonstrate skills

Having purposeful and planned practical work makes a huge difference. When we do a titration in chemistry, could we focus on getting the students to demonstrate skills like apparatus and techniques at GCSE (AT1: *Make and record a range of measurements accurately*), rather than focusing on the outcome of the reaction? In physics, when looking at waves, could you get students to measure the speed of a wave using only a tray of water, a stop clock and a metre rule with no other instruction other than: 'Find the speed of a wave?'. Here you would focus on their practical skills, and see how they develop their ideas as time progresses. You could also then build into this the 'big picture' of science showing how they have just used speed = distance / time which is also in motion, and progress this with linking it to the ripple tank investigation by using their results of wave speed to estimate frequency or wavelength. This fits in well to the benchmark that suggests investigative projects enhance students' learning - and is a very cheap and effective way to achieve this.

## Use technology

As technology advances, students have more computing power in their pocket than we had in the entire school when I was a teenager. As the report states, using technology is a great way to enhance the practical experience. One way I have done this is through using a sports app like Strava to record a walk, or run, and then looking at the distance/time or speed/time graphs that are produced from it. This provides a real-life example that students can relate too, and it's even better if they are doing it for an authentic journey they undertake; I have had a class comparing those who walk, cycle or get the bus in. When given an everyday context, they see the relevance to their lives and really run with it (pun intended). This also ties in well to Science Capital, which is proving a successful way of engaging students with science practical work.

## CPD support

These days, many teachers are challenged to teach out of their specialism. As a physicist, I believe I can assist students with biology or chemistry investigations, but this is thanks to regular CPD. With courses like chemistry for non-specialists, teachers can become empowered and have the confidence to deliver outside their specialism to give students the best experience, and often this leads to teachers thinking outside the box and providing students with a different context which might not have occurred to a specialist. I often found myself thinking of simple

analogies to aid my own understanding as a non-specialist, which have made it easier for the lower ability students to access more abstract concepts.

At STEM Learning we work to promote practical science and to ensure the maximum impact from the work that is undertaken. There are plenty of ways to engage, whether it's through face-to-face CPD either at the National STEM Learning Centre in York; on a course run by one of Science Learning Partnerships across England or our partners in Scotland, Wales and Northern Ireland; or through our free online CPD offer. We will be running Practical Science for Biology, Chemistry and Physics on the FutureLearn social learning platform. The courses are open for enrolment now and start from 19th February 2017.



## ABOUT THE AUTHOR



**Adam Little is professional development leader, STEM learning, and educator on the online program: 'Teaching Practical Science', on the FutureLearn social learning platform.**



## GATSBY'S TEN PRACTICAL SCIENCE BENCHMARKS:

- Planned practical science**  
Having a policy based around why you do practical science.
- Purposeful practical science**  
Teachers give a purpose to every practical to make it effective and integrated into teaching.
- Expert teachers**  
Subject-specialist training gives confidence and knowledge of underlying principles.
- Frequent and varied science**  
50% of teaching time should be given to practical work, either short or long, but varied.
- Laboratory facilities and equipment**  
Having enough labs and equipment to allow practical work to be undertaken regularly.
- Technical support**  
Have enough specialised support from technicians to allow practical work to be undertaken.
- Real experiments, virtual enhancements**  
Using digital technologies to support and enhance practical work, but not replace it.
- Investigative projects**  
Opportunities to do open-ended and extended investigative projects.
- A balanced approach to risk**  
Unnecessary risk aversion should not hinder the practical experience.
- Assessment fit for purpose**  
Formative and summative assessment should include looking at practical knowledge, skills and behaviour.



# Elevator PITCH

T&I THE BETT EDITION 2018  
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## Take two minutes to find out more about XYZprinting's da Vinci Color 3D Printer



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# Resources update

Take a look at the new GCSE Science eLearning resources from bksb



GCSE Achieve, the eLearning package from award-winning company bksb, has recently added online learning resources for science to its range of GCSE products.

The bksb GCSE Science solution has been specifically designed to support students in improving their skills and knowledge in line with the GCSE Combined Science syllabus for 2018. This product includes original video learning content and summative assessment questions, and covers both lower and higher tier material.

Although bksb's GCSE Science solution is geared towards individual learning and revision, it

is equally suited to classroom and flipped-learning environments, and compatible with any device.

## KEY SPECIFICATIONS

- Meets Ofqual specifications and covers major exam board syllabi
- Clear topic objectives and summaries
- Summative assessment questions
- Differentiated to cover higher tier material
- Meets the GCSE Combined Science syllabus specifications (9-1)
- Clear illustrations and animations, and attractive visual format
- Compatible with tablets and mobile devices

bksb is the UK's most popular Functional Skills and GCSE eLearning Solution and won 'Company of the Year' at the Bett Awards in

2016 and 2017. Last year, around 1.5 million learners used its online assessments and learning resources to improve their skills in English, maths and ICT. bksb supports thousands of schools, colleges, training and apprenticeship providers, and employers.



## More information

Find out more at [www.bksb.co.uk](http://www.bksb.co.uk), or give the friendly team a call on 01623 413333 to arrange a webinar or online trial.



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# The Special Selection

What will Bett have to offer this year for teachers looking to support students with SEND?

**Sal McKeown** picks out some must-visit stands...

**54**

**R**ecording evidence of achievement is a priority for secondary schools. Now is the time to seek out easy methods for recording and reporting, not just for pupils with learning disabilities working at low levels who will be affected by the abolition of P Scales next academic year, but for all learners with special needs – and plenty are on show at Bett 2018.

Two to lift the load for SENCOs are Edukey (Stand: A180), a management information system which claims that its software saves six hours per week on average and produces a detailed learning plan plus a handy one-page pupil profile, and Evisense from B-Squared (Stand: B241). Shortlisted for a Bett special needs award, the latter is a software platform that lets teachers capture evidence of learning – including photos, videos and audio files – record comments, link to relevant curriculum areas and share the evidence with teaching staff and parents.

To improve learner performance, try AXON™ School (stand F340), an online, cloud-based animated screening test to measure attention. The plan is that students will become more aware and better able to focus for longer and that this will improve grades which has the potential to reduce school dropouts. BOOP (stand C40G) is a platform to improve communication between home, school and health care for students with SEND. It gives students a chance to self-assess, reflect, become more independent and learn new skills.

## Reduce workload

Kanda Care (FS18) is a behaviour and learning management app for schools that lets teachers capture and record disputes and bullying, log positive behaviour and keep clear records of negative behaviour with response and consequences. In their words, all this can be done on their app simple 'without disrupting the flow of the lesson.' It could be good for dealing with low level disruption.

Doddle (stand C143) contains 21,000 ready-to-teach materials, across eighteen subjects from KS3-5. All resources are mapped to major exam boards and designed for the newest specifications. The curriculum is broken down into individual skills and there is a very straightforward traffic-light system – red, amber, green – so teachers can track progress over time and provide personalised interventions.

Doddle has received a positive response from many schools and is a finalist in the Secondary Content category at the Bett Awards. Otis McFadden, science teacher at Firth Park Academy, feels it has improved assessment and tracking of student progress. The system helps staff to identify and plug the gaps for those learners making slow progress: "Doddle deploys technology in an effective manner to reduce teacher workload and our staff were really glad to have the extra time that using Doddle created," says McFadden.



## FIND OUT MORE...

**Anderton Tiger Radio** [andertontiger.com](http://andertontiger.com)  
**AXON™ School** [neurotech-solutions.com](http://neurotech-solutions.com)  
**C-Pen Reader** [readerpen.com](http://readerpen.com)  
**Claro Software** [clarosoftware.com](http://clarosoftware.com)  
**Doddle** [doddlelearn.co.uk](http://doddlelearn.co.uk)  
**Evisense** [bsquared.co.uk](http://bsquared.co.uk)  
**Edukey** [edukey.co.uk](http://edukey.co.uk)  
**Genee World Ltd** [geneeworld.com](http://geneeworld.com)  
**Kanda Care** [kanda.care](http://kanda.care)  
**Matchware** [matchware.com](http://matchware.com)  
**Noble Doughnut** [nobledoughnut.com](http://nobledoughnut.com)  
**School Radio** [schoolradio.com](http://schoolradio.com)  
**Texthelp** [texthelp.com](http://texthelp.com)

### Independence days

Increasingly schools are under pressure to cut staff costs and some are already reducing the teaching assistant support available for students with special needs, so anything which makes learners more independent and better able to cope is to be welcomed.

Genee World Ltd (Stand: B102) is focusing on visual learning resources and tools to engage pupils with SEN and physical disabilities, offering them a larger space to work with, broader movements which more people can access and adjustable screen settings to accommodate those who struggle to read or focus on the screen.

Exam accessibility is still a major concern and scanning pens – physical and virtual – are selling well. Ryde Academy in the Isle of Wight has been using the C-Pen Reader from Scanning Pens Limited (Stand: A230), another Bett special needs award finalist – and now students can read or look up difficult words independently, differentiating a variety of texts, without having to ask for help.

Claro Software (Stand: A441) has been delighted with sales of its ScanPen since last Bett. It works on a smartphone or tablet. The candidate takes a photo of the text, highlights the section they want to hear using a finger or stylus, and the app reads back the text using a human quality voice; it's proving popular because it puts the learner in control.

### Mapping and maths

MindView, shortlisted for a Bett special needs award, is mind mapping software from Matchware (Stand: C14) so it puts a structure on a 'brain dump'. Students with dyslexia like the colour and holistic flow of a mind map but reports show that some learners with autism prefer the timeline function. It is also becoming a good way for schools to help young people develop a revision plan.

Texthelp (Stand C141) is famous for its Read and Write suite, which is a boon for students with dyslexia. However, mathematical language can be even more of a headache for students – and now Texthelp has developed Equatio®, which will give access to mathematical equations and formulas on a computer or Chromebook. It comes with a huge library of ready-made expressions to save time.

### Creative inspiration

Finally, some ideas for engaging and motivating learners. The best named product this Bett has to be Noble Doughnut (stand FS11). It is a dynamic digital magazine to make tutor time more purposeful. Each week three videos are featured along with an additional resource pages in the Teacher Pack. Versatile, fun, and ticks boxes for well-being, PSHE and mental health.

For more creative ideas, visit School Radio (Stand: G320) and Russell Prue of Anderton Tiger Radio (Stand: D120). Anderton Tiger has been working with Willows High School, of Educating Cardiff fame. Students create and broadcast bedtime stories for feeder primary schools while the Student Council at Ormiston Venture Academy, Great Yarmouth is broadcasting to the local community. These projects are effective ways of improving literacy and numeracy and speaking and listening skills and developing team work, creativity and problem solving. Russell broadcasts live throughout Bett and in 2018 is focusing on young people's rights, data protection in its legal sense, privacy and safeguarding and mental health.



## 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).**



# FROM STAGE *To Screen*

Despite a tendency to think of technology in connection with STEM subjects, it has a powerful part to play in arts education, too, says **Fiona Lindsay...**

**T**he education landscape is changing. Students today demand materials to be delivered in a different form; one which is integrated into their usual data consumption, using tools and devices that are familiar to them, and available where and when they

need them. Meanwhile, the definition of 'live' is changing – becoming ever more multifaceted and complex.

Improvements in streaming technology have facilitated easy dissemination of performance in the classroom, offering teachers a greater range of tools to engage their students and deepen understanding of texts and performance, whatever their ability or learning style.

Technology is an enabler, not an inhibitor; digital resources enable an inclusive arts education; one that ensures access to high quality, relevant and motivational experiences of theatre and performance, irrespective of

“Finding ways to engage students with texts can be a challenge”





geographic or economic boundaries. Being able to provide a blend of content types is integral to the success of any education platform. With the focus on teacher-led learning resources and activities, we need to continually respond to the demands of the classroom, subject matter and curriculum.

## Navigating the minefield

Having said this, a question we often come across with teachers at all levels, is how to make sure the *right* technology and digital resources are used in the classroom for teaching and learning.

The rise of tech means there are a plethora of free resources to be found online, but the vast majority are unhelpful and unreliable for students at best – at worst, these resources and platforms can give them an inaccurate and distorted impression of the work their teachers want them to understand. It's crucial for students to have access to properly curated and authorised materials which they know their teachers endorse.

Teachers are time-poor and don't have the hours needed to seek out the nuggets of gold amidst all the poor quality and misleading free material out there, and so it becomes increasingly more important for schools to make sure students can access authoritative, trusted digital materials.



The use of great digital resources can improve student engagement and exam results, by bringing plays on the drama and English curriculum to life. Students are now able to study the arts in new ways, with the freedom to digest and experience a play on their own terms. From the simple ability to re-watch a captured, professional performance, pulling out key scenes, pausing, and rewinding, to the access now available to students of the arts regardless of their actual geographical location, technology is enabling access on a global scale.

Some of our teachers use digital productions and interviews to engage students in the classroom. Others tell me that they get their students to watch videos at home, flipping the classroom, and freeing up in-class time to focus on the discussion of key moments and themes.

## Access everywhere

At King's Ely, for example, Nick Huntington, director of drama and theatre, recognises the importance of technology as a classroom teaching tool. "It's useful for different types of learners; having audio/visual technology aids inspire pupils differently from reading a textbook," he explains. "It is great fun to utilise texts to get students up on their feet, of course – but also useful to watch professionals using their craft to help engage pupils in the scripts that they are studying via technology. Being able to access great theatre anytime online engages pupils, inspires them to use theatre, and helps them with written components of examinations. The rise of technology means students can re-watch productions, and examine the skills employed in the arts in depth. Design is a huge part of the arts, and students can now use filmed interviews and tools to analyse and evaluate the design skills used within productions."

"I find it helpful to use technology in the classroom," agrees Victoria Campbell, head of drama at Tormead School. "I also get the



students to use platforms such as DT+ for preparation work, and so it saves time in lessons.

We are an iPad school, so using technology is helpful in terms of learning from the students' perspective"

## Meeting the challenge

Holly Whymark is head of drama at St Albans High School for Girls, where her department certainly makes the most of technology for teaching and learning. "We have access to all sorts of things in the classroom," she explains. "We use Digital Theatre+, iPads, and we have a virtual learning page where we post lots of YouTube videos. We have a lighting board as well. As a department, we love the joys of the subject in terms of taking the children away from the digital world – but we're also always ready to help them learn through technology. It adds to what we are already doing to enhance a creative subject, and we find it helpful and rewarding. Twitter, for example, gives us the option to flag up exciting things and validate and acknowledge positivity with the students. It enriches what the learners are doing in the classroom, as well as being useful for publicity and marketing. With DT+, the students can revisit a performance, and really enjoy the theatre in the moment as well as revisit it in the class; whilst iPads are useful for recording and sharing video in the moment and developing performance work".

Without incorporating new technologies, finding ways to engage today's students with key texts can be tough challenge. Curated digital platforms can remove some of the obstacles for teachers, meaning teachers can spend time on what they do best: teaching.



## ABOUT THE AUTHOR



**Fiona Lindsay is creative producer at Digital Theatre+ (digitaltheatreplus.com)**

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Vic**  
Young Victoria Theatre Company





# The Inside Story

## Fiona Lindsay - Digital Theatre+

Fiona Lindsay, creative producer of Digital Theatre+, explains why she is so passionate about making the arts accessible to everyone

By the time she was 13 years old, Fiona Lindsay had experienced no fewer than 13 schools – her father was in the forces, meaning frequent moves for the family. Starting from scratch in a new environment is never easy, but Fiona quickly discovered the key to becoming involved and accepted.

"Every time I walked into a new school, I'd participate in an assembly," she explains. "And that participation – performance, listening and sharing stories – helped me make those transitions, between institutions, countries, people. That was my education in the theatre of the world."

Later, during her training as an actor, Fiona found herself with the opportunity once again to explore the power of drama to forge new connections. "I feel really blessed to have been given the chance, during the holidays, to create shows and take them out into communities facing difficulties of their own," she recalls. "I learnt how to devise, and communicate – and working with young people, disadvantaged people, people with incredible physical, mental and emotional challenges in front of them, I started to understand just how important it is to do things that give everyone a chance to engage fully in the world around them. To give everyone a voice, and let that voice be heard."

### Shared privilege

After her studies, Fiona joined the Royal Shakespeare Company, where she was a founder member of its education department, laying the foundation for workshops and events that reached out to schools, teachers and students. "It felt like such a privilege to be part of the RSC," she points out, "and for me, there was a clear



duty to share the advantages as widely as possible."

In 2008, after 17 years with the RSC, Fiona left to pursue a freelance career. "A former colleague, Robert Delamere, was setting up Digital Theatre," she says. "I knew it needed an educational arm, and so Digital Theatre+ was conceived, in order to share theatre

productions and resources with schools.

"Of course it's important as part of the curriculum. For example, every child in the UK needs to see a Shakespeare play – and cost shouldn't be a barrier to that, or to access to theatre generally. The purpose of Digital Theatre+ is to open the very best theatrical experiences to the widest possible constituency, all over the country, and indeed, the world."

### A political act

However, there is more to the Digital Theatre+ mission than enabling a deeper understanding of set texts; at its heart, it's about addressing the cultural capital gap. "This is a political act!" insists Fiona. "If we can just reach one person, and empower them to understand something more profoundly, and express their opinions more articulately, that's a really important thing. And understanding the creative process is as important as engaging with the finished work."

"Drama should be placed at the core of the curriculum – right up until students leave school at 18; the skills it develops are invaluable," she continues. Sport is already valued for this reason, and we do actually invest in it – if we put money into the arts in the same way, then we'd stand a much greater chance of delivering genuinely rounded young adults at the end of their 13 years in education."

For more information, visit  
[digitaltheatreplus.com](https://digitaltheatreplus.com),  
call 020 3873 1330, or email  
[enquiries@digitaltheatre.com](mailto:enquiries@digitaltheatre.com)

### Timeline Highlights

2010

Began to develop  
Digital Theatre +

2013

Funding secured  
to build new  
website

2015

Large scale  
investment in  
DT+ content  
development

2017

Significant increase  
in content creative  
partnerships

# A touch of *BRILLIANCE*

With touchscreen technology, students have extraordinary educational opportunities at their fingertips, says **Liz Moore**

**M**arket research suggests that growth in devices such as tablets, touch tables and interactive flat panel displays (IFPDs) has been significant over recent years. Interactive whiteboards (IWBs) have dominated the education sector for some time – especially in the UK, where there is around 80 per cent market penetration. How has this technology become so popular, and what are the benefits for educators and their students?

Touchscreens became mainstream in part due to the iPhone – a generation of consumers suddenly had computing power literally at their fingertips. Many schools have capitalised on their popularity, implementing BYOD or one to one device schemes. Bringing tablets and smart devices in the classroom allows teachers to differentiate learning or offer a range of materials to ensure that every pupil is able to process and understand the

topic in their own way. Using tablets as a way to access the internet allows learners to benefit from images and videos that explain the content in a more appealing format for them; for those struggling to read, audio and voice software can be used, or students could listen to podcasts, videos or online streams, and, finally, for those learners that find it easier to understand concepts through practical tasks, games and educational apps can be used to better engage the user.

data between classrooms and departments, producing reports and providing evidence of attainment takes up less of the teacher's time and frees them up to spend more time planning and delivering great quality lessons.

## **Collaborative skills**

As we examine the soft skills necessary for post-education success more frequently, the concept of collaboration comes up time and time again. The jobs that many

“The concept of collaboration comes up time and time again...”

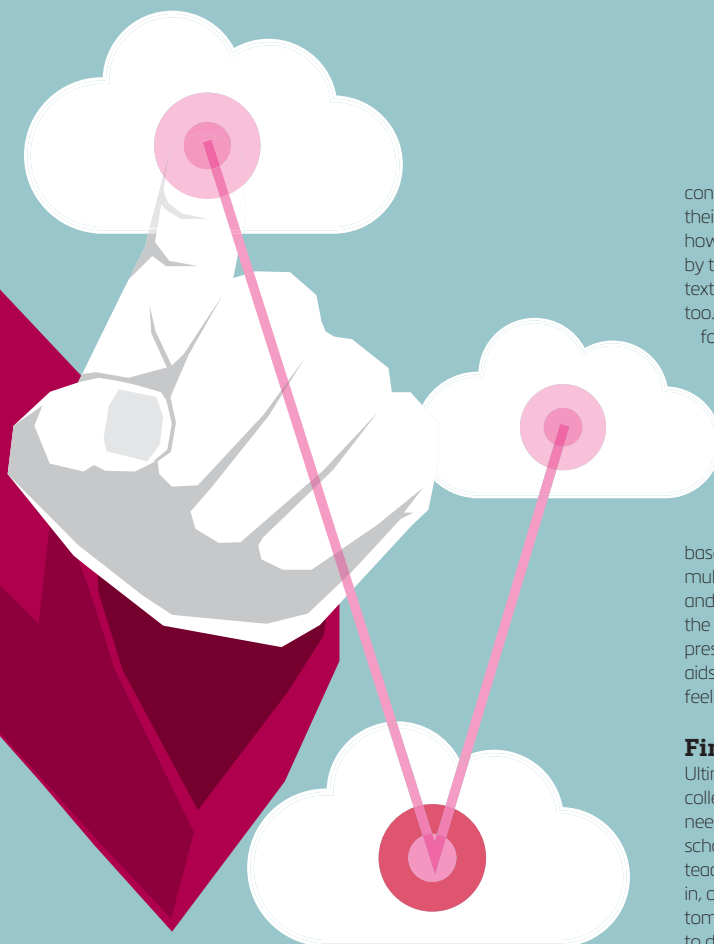
## **A better offer**

The flat panel display, meanwhile, is a useful resource for extending the benefits of individual touchscreens. While the main barrier to the widespread use of the technology in classrooms has been cost, this is now changing, with a host of new products hitting the market, offering touch capability at a more cost effective rate than a few years ago (in the halcyon days of ring-fenced ICT funding for schools).

Within education, the compatibility of touchscreens with PC, android and Apple devices is a real advantage. The increase in educational content for touchscreens also shores up their use, and can support the teacher too, with platforms and software available to help educators share lesson plans and other materials, assess easily and spot gaps in attainment. As more software and systems become available to support the sharing of

pupils will go on to do when they leave education may not even exist yet, and it's a sure bet that many will involve collaborative working enabled by technology. Add to this the fact that many of today's students are completely at home with touchscreen technology and accustomed to socialising, consuming and sharing information online, and it's obvious that this is a model of working that speaks to terms – as well as having clear benefits in terms of preparing them for the workplace.

Traditionally, students have often been put in pairs or small groups and asked to work around one computer. However, the challenge here is that one pupil tends to control the device, leaving the other pupils to sit either side, meaning they often lose interest or switch off. With touchscreens, teachers can get the group to use the interactive board, giving each member more of an active role, and equal responsibility. Having the option of allowing multiple students to operate a touchscreen at the one time, interacting with each other and



consuming content in a way that echoes their downtime use, you can see why and how students are often more motivated by touchscreens than the more traditional textbook. Touchscreens support inclusivity, too. For those who struggle to read or focus on the screen, simple adjustments can be accommodated to address this; settings can be altered to provide higher contrasts, larger fonts, different style fonts, or simply a change in how information is relayed.

Taking this one step further, interactive boards allow for games based learning, multisensory and multimedia content. Whether it's dragging and dropping elements in a game, watching the screen and dictating the next move, or presenting a topic to the class using visual aids, everyone can relate to the lesson and feel engaged in the topic.

### Find what works

Ultimately, technology has captured our collective attention as a society. Everybody needs it: individuals, companies, and schools. Definitely schools. We have to teach the kids of today how to function in, and how to lead, the workplaces of tomorrow. The recent push for students to develop digital skills has led to a mad rush to procure the latest and greatest classroom devices, including interactive whiteboards, flat panel displays, laptops, tablets and touch tables. For schools, it's about finding out what works best for their students, their current technology and their budgets. Luckily, there are enough options out there to explore, and plenty of advice from other schools on hand at events like Bett to make sure that the decision you make is the right one.

## THE EVOLUTION OF TOUCHSCREEN TECHNOLOGY: A TIMELINE

1982 - First touchscreen device  
 1984 - First multi-touchscreen is made  
 1991 - First IWB released  
 1993 - Simon Touch Screen mobile is created  
 1999 - SMART boards introduced in schools  
 2002 - Moodle, the largest open-source learning management platform introduced  
 2007 - Apple launches the first iPhone  
 2008 - First SMART table was introduced  
 2010 - The iPad arrives  
 2012 - First four touch IWB launched by SMART  
 2017 - 96 per cent of interactive displays are IEPDs rather than IWBs in schools



### ABOUT THE AUTHOR



**Liz Moore** has worked as an English teaching assistant in a number of primary and secondary schools across the country, and is a proof reader for college and university students.



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# "It was an easy decision for us"

At Goffs Oak school, upgrading from projectors and whiteboards to state of the art interactive screens has had a profound impact on teaching and learning

Goffs Oak Primary and Nursery School is a mixed pupil community school in Hertfordshire, UK, with an intake of 231 students. Marked as a Good provider by Ofsted, the school's mission is to provide all children with the opportunity to achieve their potential academically, socially and physically.

After joining the school as headteacher in 2016, Michelle Matthews immediately saw that the estate of projectors and whiteboards across the school were struggling to keep up with the demands of being used all day, with some teachers choosing not to use the technology at all due to pupil eye strain.

## Screen solution

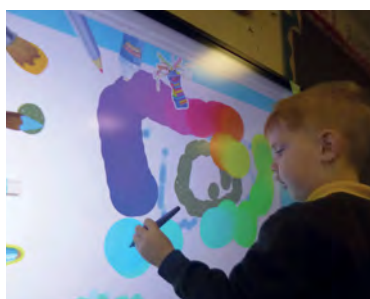
"Our interactive technology was procured to help us improve the standard of teaching and learning at the school, but they were actually hindering it," explains Michelle. "Upgrading our projectors with new bulbs was becoming an expensive and temporary solution which we financially couldn't maintain. It was becoming a losing battle."

Michelle and her team knew they wanted to move away from projector technology to a solution that would work well with the number of windows in the school as well as meet the demands of busy classrooms. "Choosing the Avacor F series display was an easy decision for us," she says. "The glass technology means that they can work in light, bright classroom environments and there is no need to darken the room to get the best visual result."

The inbuilt computer and USB port mean that teachers' laptops don't always need to be connected, giving teachers time back during individual and group work: each user on the network.

## Collaborative learning

"The use of interactive display technology is pivotal in our day to day teaching strategies here at Goffs Oak," Michelle points out. "With the Avacor displays, we can confidently plan for interactive devices to be used daily. Our children also enjoy using the displays, particularly for interactive learning games where, because of the 10-point touch, there is no more 'waiting in turn', so learning has become a fun, more collaborative experience."



Pre-created content in 3rd party whiteboarding software tools could continue to be used with Avacor Eclipse, the educational software application that enables teachers to convert resources for continued use without losing them.

## Considerable savings

"The Avacor solution has fitted seamlessly into our school, instantly supporting teaching and learning without causing more work for our staff," observes Michelle. Thanks to competitive pricing, the school was able instantly to upgrade all its existing whiteboard technology, as opposed to a three-year refresh cycle, meaning all staff and pupils

could experience the benefits straight away.

The displays have enhanced teaching at the school, as children can see lesson content, clearly. Michelle has also seen cost savings as there is no longer any need to print out visuals for the children to use. Overall, pupils are more engaged as teachers are using the displays for whole class work including the use of videos. The displays have also saved teachers' time as they don't have to redesign their templates and resources to adapt to the new technology.

"Choosing Avacor has ultimately saved Goffs Oak time and money," concludes Michelle, "as well as enhancing the learning experience for our pupils."

Avacor will be at the Bett show in January 2018 on Stand B160

# For the love of **BOOKS**

Using tech to transform your library into a place where students actually want to be could have an impressive impact on outcomes, suggests **James Breakell**

**S**tatistics from the National Literacy Trust reveal an alarming lack of interest in reading for pleasure amongst teenagers, with only 36% of 14-16-year-old boys and 53% of girls of the same age engaging in the literary escape that most of my generation enjoyed whilst growing up. When you compare those figures to the 72% of boys and 83% of girls in the 8-11 age bracket, who are whiling away their free time with the likes of Harry Potter, Percy Jackson and Hetty Feather, it is clear that secondary school pupils are losing interest in reading, in their droves.

When, according to a House of Commons report, 16 year-olds who choose to read books for pleasure outside of school are more likely to secure managerial or professional jobs in later life, and Organisation for Economic Co-operation and Development (OECD) statistics tell us that children who read books often at age 10 and more than once a week at age 16 gain higher results in maths, vocabulary and spelling tests at age 16 than those who read less regularly, it is clear that in order to obtain better results and to help pupils to

achieve their personal best, we need to get them reading again.

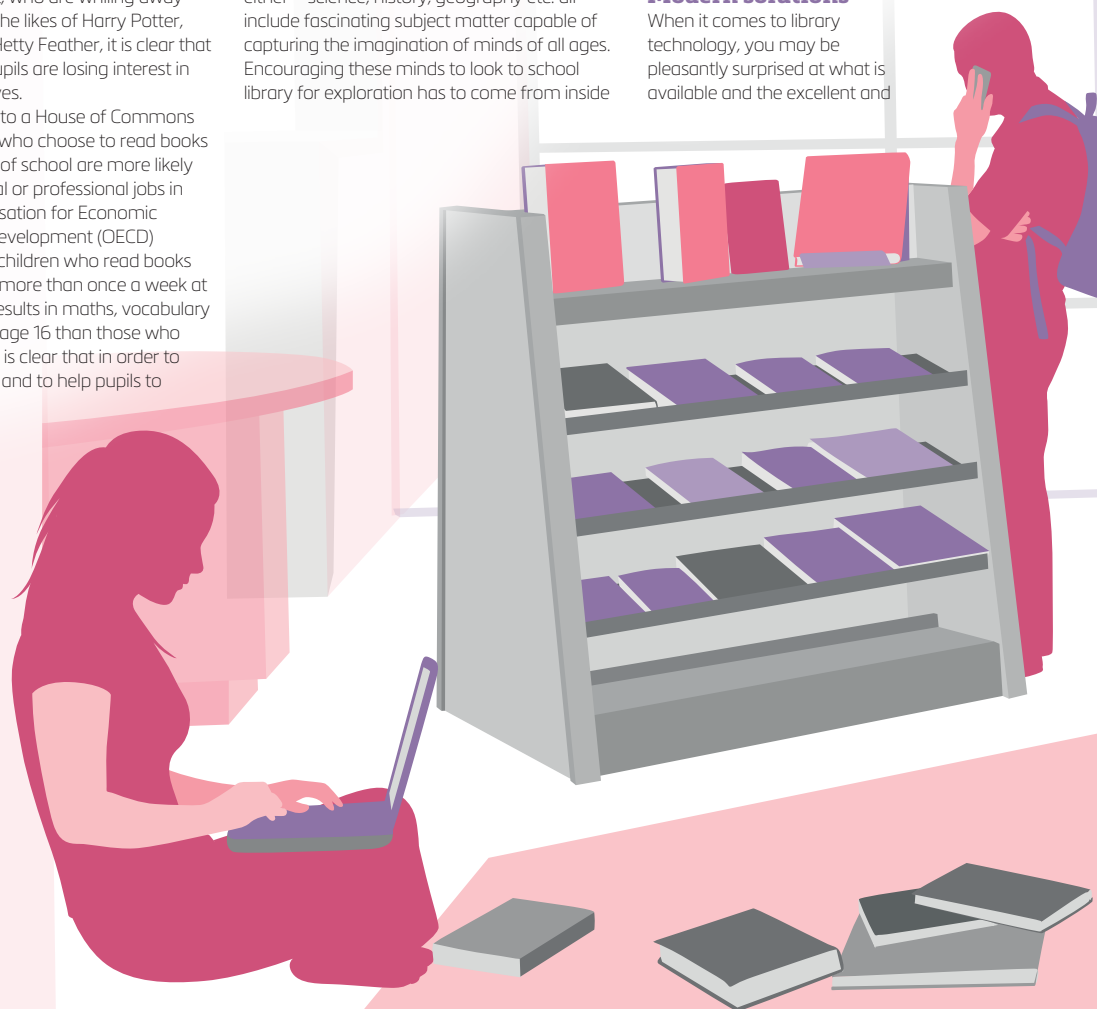
The school library is definitely a prime location to challenge and change this worrying decline in reading, but it is not going to be easy, and librarians can't do it alone! By the nature of the job, school librarians will have very little access to pupils who aren't already reading. The urge to read has to be led by teachers, and not just the English teacher, either – science, history, geography etc. all include fascinating subject matter capable of capturing the imagination of minds of all ages. Encouraging these minds to look to school library for exploration has to come from inside

the classroom, with the library contributing wherever possible.

The lure of gaming and social media and the convenience of smartphones, tablets and gaming consoles, means school librarians need to be innovative and industrious if they are going to attract teenagers back to the fold. Add limited resources and dwindling budgets to the mix, and it becomes even more difficult.

## **Modern solutions**

When it comes to library technology, you may be pleasantly surprised at what is available and the excellent and





rapid returns on investment they can provide. My advice would be to have a wish list and to shop around for the best deals. A good library technology provider will be happy to spend some time with you to understand your needs. Make your budget clear early on and ask for any current technology to be taken into account. It isn't always necessary to replace everything with new, branded technology; we would seek to integrate our solutions with current systems wherever possible, for example.

RFID (Radio Frequency Identification) is the fundamental technology most suitable for school libraries. With the added benefit of multi-item checkout (no more opening individual books and scanning the barcode; just place a pile of books on the reader and you're done) and improved security, in conjunction with the library management system and security gates, RFID gives good value for money for school libraries.

When it comes to security gates, there are several to choose from, but ultimately you want one that detects unauthorised items being removed from the library, alerts staff via audible and visual alarms, and immediately flags the incident details to staff. When you add up the cost of replacing lost books, the time it takes to stock-take and identify lost books and then order new ones, it is easy to see why RFID security pays for itself so quickly.

RFID isn't just about security, though. Whether you opt for self-service kiosks or staff stations, RFID enables fast, efficient checking out and returns, because the last thing you want is to build an interest in the library, only to leave pupils spending their valuable break times standing in line. It facilitates rapid inventory checks with wands that collate information from the items on your shelves in just one pass, and if you are searching for a specific item, a wand can alert you to its presence at the same time as carrying out an inventory.

If you have invested in high-quality RFID equipment, you will be able to open your library for longer hours without extending staff hours, safe in the knowledge that you will know who has entered and left the location, and if they try to leave without checking out items, the alarms will be activated. So rather than having to spend their lunchtime in the library, reticent readers may be encouraged to pop in before or after class, or during free periods.

## A vital investment

Libraries are no longer just book depositories. We only have to look at public libraries to see how they have become community hubs and venues for events. There is no reason why this ethos cannot be adapted for school libraries, too. Yes, they are ultimately resources for learning, but if we are to encourage our teenagers to read more and take responsibility for their own learning, we need to find middle ground. That may be through offering resources to specific interest groups or different media for reading, such as WWAs computers, tablets or e-readers.

We understand that the cost of desktop PCs, as well as finding space for them in a school library, can be prohibitive, but have you considered the added value loanable laptops could bring to your school? If Bring Your Own Device (BYOD) is a step too far – and such a policy does bring its own security and safeguarding concerns – having a number of laptops or tablets available for students to borrow for research and project work, or just to read an e-book could be the key to reconnecting with them and sparking a greater desire to learn. Devices can be stored and charged in secure lockers, and checked out in a variety of ways, including RFID, barcode, and biometrics. So, you always know who has the device and can set up your security systems to detect any unauthorised attempts to remove it from the location.

School libraries play an integral role in the success of pupils; if we are to maximise their potential, and create the leaders of the future, we need to invest in them, and ensure they offer the technology that encourages their use and evolution.

## 5 WAYS LIBRARIANS CAN RECONNECT TEENS WITH BOOKS:

- Drop into lessons with some related titles
- Connect with subject teachers and have them share exploratory reading lists
- Try to tap into current TV trends; for example, how many children watch the BBC's *Blue Planet* and want to learn more about the oceans?
- Encourage student book clubs and social clubs to meet in the library
- No more Sssshhhing!



## ABOUT THE AUTHOR



**James Breakell is UK Managing Director of D-Tech International, which designs, develops, and supplies high performance RFID products and library security systems.**

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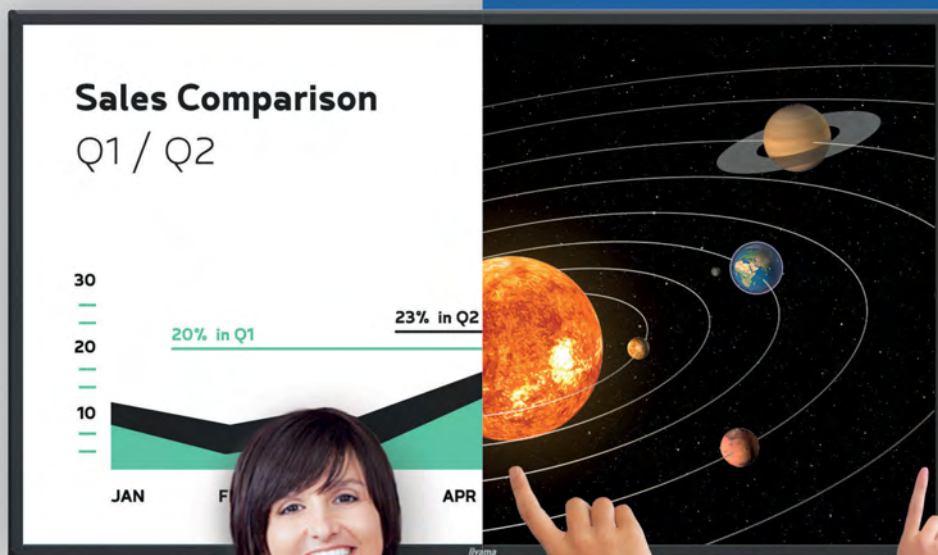
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EDUQ&amp;A

# “Everything you need is wrapped up in our screens”

**Steve Kilroy**, UK sales manager at iiyama, explains why you don't need to spend a fortune on 'specialist' educational software



enough inputs for future proofing. Everything you need is wrapped up in our screens.

## What can your customers expect by way of pre- and post-sale support?

iiyama will engage with people from the start, listening to the needs of educators, trying to steer people clear of complex software of course. We offer a full demonstration facility to inform customers to the best of our ability. Once installed we offer onsite warranty, and it's important to offer a great service here, because if you lose the confidence of a person then you lose that for a long time. We aim to keep people happy, because happy people stay with you.

67

## T&I With budgets as tight as they are, why should schools be thinking about investing in interactive technology?

**SK** The cost of interactive technology has dropped over the years and one thing iiyama focuses on is to teach people how to use Microsoft applications (such as Inking Tools, PowerPoint and OneNote) as a method of delivering lessons. Not many people are aware of the range of features within Microsoft Office, and that in itself can save money by avoiding the need to purchase additional software from third parties.

## How can they be sure the hardware they choose will improve teaching and learning?

There is some good research out there that suggests the use of touchscreens can increase cognitive and emotional engagement. Having a good quality and easy to use screen at the front of a class can deliver more engaging dynamic

content to an audience. Of course, technology can never replace an inspiring teacher.

## Is it important to invest in complex software, too?

No, this is the myth created companies for profit. Most people don't realise as soon as a touch screen is plugged into a Windows based PC, a whole host of features come alive. You can already use OneNote as a teaching tool, you can annotate over Excel and Word. Lastly, PowerPoint is a fantastic presentation tool. So, simply use the tools you already have. It saves time, saves money and the need to invest in training.

## What is the average lifespan of the products you are able to supply for schools?

iiyama only uses commercial grade screens and as such they are designed to last for a very long time. The new 4K touchscreens we offer will simply keep going and have



For more information, contact Steve Kilroy on 07891 864665 or [s.kilroy@iiyama.com](mailto:s.kilroy@iiyama.com), or visit [www.iiyama.com](http://www.iiyama.com)



# What price PROGRESS?

With IT accounting for an increasingly large chunk of the average school budget every year, a canny procurement strategy is vital, says **Amber Smith**

**S**chools currently spend in excess of £900 million on IT each year. But as technology advances and teaching evolves it's inevitable schools will need to invest even more in the future; all within shrinking budgets.

So how can schools move forward and ensure their students and staff have access to the latest technology while keeping an eye on their financial security?

## Clear criteria

It's very tempting to plunge straight in and order the latest tablet or the highest specification laptops you can find. Or to buy dozens of licences for a game 'guaranteed' to engage every pupil. But research suggests schools are spending hundreds of millions of pounds every year on tech they don't need. Or that they have little idea on how to use.

When buying IT for your school every device should fulfil two crucial criteria:

- It needs to help teachers teach or to enable pupils to learn
- Staff or pupils need to be able to use it

## Beyond devices

When sourcing tech it's easy to just think about the devices. You can calculate how many tablets you'll need for a class or the number of printers for the library. You will also want the best possible specification for your new PCs, and all printers need to be wireless.

But a common mistake is to forget about IT infrastructure. Your school's network may not be able to cope with the extra demands placed upon it. There is little point in equipping each

child with a tablet if only three or four pupils in a class can access the network at any one time. Similarly, a wireless printer which takes five minutes to kick out each page would bring a lesson to a grinding halt.

The speed, capacity, and security of your school's network should play a huge role in your IT procurement strategy. You can't plan your purchasing until you know if your network can support new technology and increased demand; and you may even have to factor a network upgrade into your budget.

If your network is aging it would be wise to schedule a wireless site survey. Although there are costs involved, such a survey can save money in the long run, as it will test the performance and security of the network, and reveal whether any upgrades are necessary to improve its capacity. Your IT provider will be able to offer advice on how to conduct an effective survey.

## Value for money

Like any procurement strategy IT must provide value for money; which doesn't always mean low prices. Yes, pricing is important but look at the whole package. You need to balance quality and cost when assessing providers.

"It's very tempting to plunge straight in and order the latest tablet or the highest specification laptops you can find..."

Consider after sales service. Look at providers who will not only supply the equipment you need but who will install and set up the devices. This will save so much time and frustration for your staff. Think about training provision, too. Will the supplier come to the school and show teachers and pupils how to can get the most from your purchases?

## 8 QUESTIONS TO ASK YOUR IT PROVIDER...

- Are all devices ready to use and delivered pre-configured? If not, are there extra set up costs?
- Are there extra costs for removing bloatware?
- Are required updates included in the contract?
- Do devices need costly automatic updates?
- Does the contract automatically renew? Are you comfortable with this?
- What are the termination terms?
- Will devices and hardware still be fit for purpose in three years' time?
- Are all devices and equipment covered by insurance or is this an extra cost?

... and one to ask yourself

- Will your new IT purchases really help pupils to learn, or teachers to teach?



There is nothing worse than not using a device or its software to its fullest potential. Specialist training will overcome this.

It is crucial to maximise your budget, and to obtain the best possible return on your investment. This may not always mean buying the latest kit.

For example, VR headsets are wonderful things. Pupils will love them. But will they become just another hot tech item which ends up at the back of the supplies cupboard once the novelty wears off? Will VR headsets really enhance the children's education? Will they provide benefits to both school and pupils? Ultimately, are they really worth the huge hit to your budget? You may well decide that they are – but it's important to be sure.

### Alternative routes

Just because you have used a supplier for years doesn't mean they are the right fit now. Always consider other options. When buying new tech, request quotes from at least three suppliers – and remember, a quote is just that; it's not a commitment to purchase, and the bottom line is still up for negotiation. Maybe you can squeeze your favoured supplier to include an extra workshop, for example, or to offer extended warranties. Shop around,

because here are some great deals out there, if you are prepared to look for them.

Finally, consider leasing as opposed to purchasing your IT outright. There are pros and cons to both approaches, but leasing is a more flexible way to pay with no upfront costs. It also enables you to keep your equipment up to date. One of the biggest advantages is that your supplier can put together a leasing package which includes network, devices, and training. The downside can be that you may pay more in the long run. However there are different kinds of leasing deals.

The traditional way of leasing IT is for the school to pay the supplier or finance company direct. But more schools are now taking advantage of parental contribution

programmes. This flexible way of buying IT enables the school to ask parents to lease their child's devices. The programme is managed online, which reduces the school's admin, and parents can upgrade their child's device every year. Ask your supplier about the Educate IT programme.



### ABOUT THE AUTHOR

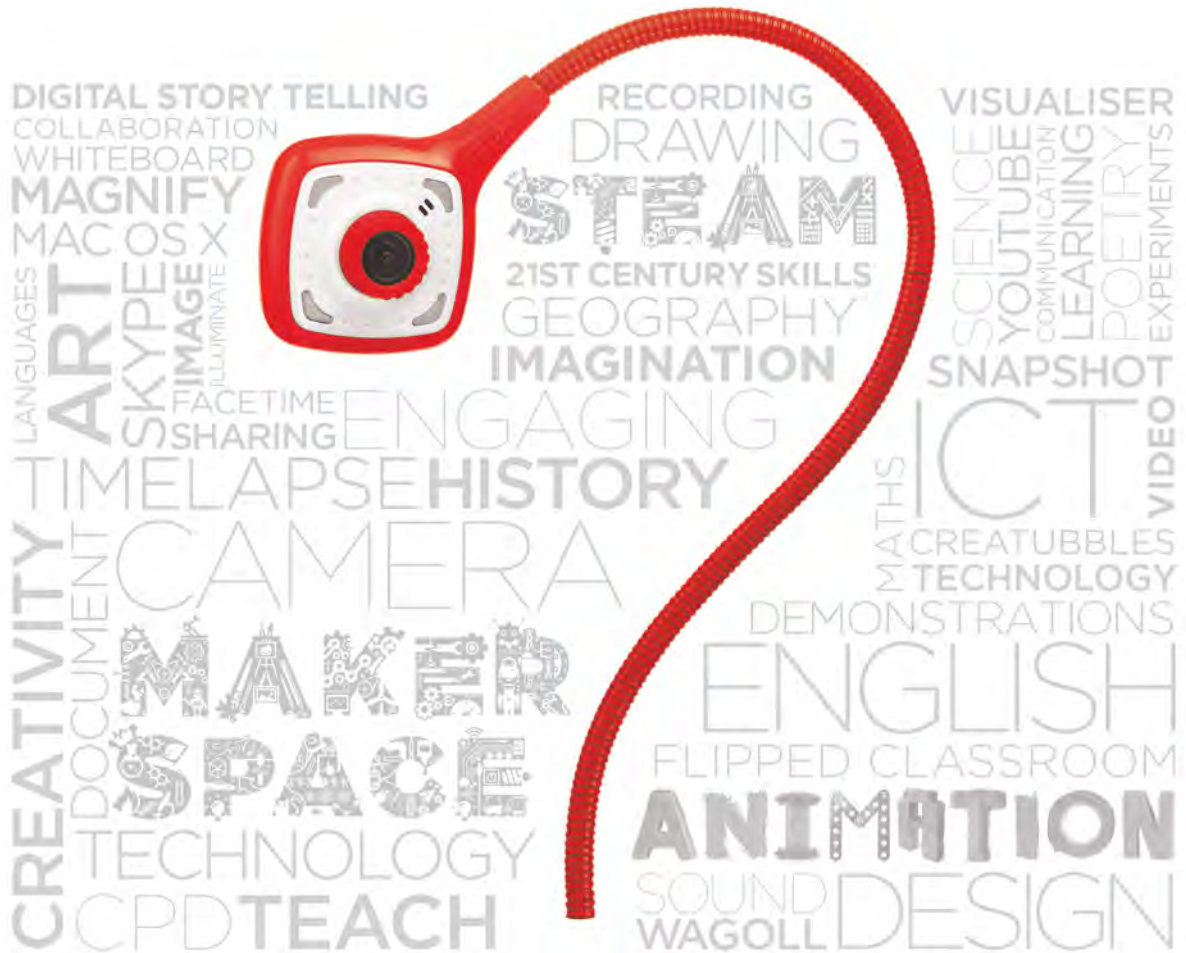


**Amber Smith is director of sales and head of business at Ebuyer.com**



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## What will you do with yours?





# 5 REASONS TO VISIT teachwire.net THIS MONTH

For the latest in education news, opinions, ideas and resources, there's only one online destination you need...

## 1. Must-read features

As well as all the stories from Teach Secondary (so you can catch up on previous issues, and share things that have inspired you with a single click), teachwire.net is crammed with contributions from writers we love – both established figures from across the education sector, and fresh, new voices. From Dr Finn Mackay's critical look at the issue of 'toxic masculinity' amongst young people ([tinyurl.com/teachwiretoxic](http://tinyurl.com/teachwiretoxic)), to self-confessed geek Chis Smith's hilarious report about a recent maths revision weekend ([tinyurl.com/teachwiregeek](http://tinyurl.com/teachwiregeek)), we've got your reading requirements covered.

## 2. Something to smile about

Education is a serious business, of course – but sometimes we all need to release the pressure, and laughter is one of the best ways of doing that. So when we find something that makes us titter, snigger or guffaw, we make sure we share it at teachwire.net – how about some memes that only a teacher could understand, ([tinyurl.com/teachwirememes](http://tinyurl.com/teachwirememes)), for starters?

## 3. Free resources

Our archive of downloadable lesson plans and other resources is the heart of teachwire.net – everything is absolutely

Got a resource that's too good to keep to yourself? Upload it today at [teachwire.net/secondary](http://teachwire.net/secondary), and share the brilliance!

free, and teachers just like you are adding new ideas to the collection all the time. You can search the content by age, Key Stage, subject or key words; whether you're after reading notes for Malorie Blackman's *Noughts and Crosses* ([tinyurl.com/teachwirenoughts](http://tinyurl.com/teachwirenoughts)), or a new way to help students understand quadratic equations and graphs ([tinyurl.com/teachwirequadratic](http://tinyurl.com/teachwirequadratic)) your colleagues have almost certainly come up with something that can help.

## 4. Competitions and great giveaways

There's always a range of brilliant prizes on offer at teachwire.net – and we keep it as simple as possible for you to get your hands on them, too. At the moment, we have 10 all-terrain storage trolleys ([tinyurl.com/teachwiretrolleys](http://tinyurl.com/teachwiretrolleys)),

plus a collection of award-winning books worth £750 ([tinyurl.com/teachwirebookprize](http://tinyurl.com/teachwirebookprize)) to pass on... what have you got to lose?

## 5. Literary inspiration

Reading for pleasure is such a crucial part of young people's education that we've dedicated a whole special section of teachwire.net to it ([tinyurl.com/teachwirebooks](http://tinyurl.com/teachwirebooks)). Featuring reviews, fiction-inspired lesson plans, author interviews and more, it's the perfect destination for bookworms of all ages, and the ideal place to find something to tempt even the most reluctant reader to take something off the shelves and give it a try.



**Visit teachwire.net**  
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# BETT FUTURES

Discover the little acorns from which we reckon some mighty edtech oaks are likely to grow...

**B**ett Futures is the section of the show where the most 'creative, disruptive and impactful' edtech startups are invited to showcase their innovations, and inspire

powerful conversations about emerging learning technologies and methodologies. Space is limited, and competition to be selected is fierce, making it an essential destination for all Bett visitors – so, by way of a taster, here are just seven of the exciting companies that will be taking part this year...

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## Home4Schools

Teaching is a tough job. Finding enough hours in the day to be on top of our workload is a magic trick that few of us have mastered. Home4schools.com was created to give you at least one period a day that's always planned for you. The company aims to provide you with everything you need to make form time stress-free and meaningful. The site is designed to be a perfect homepage for schools, complete with a word of the day and news headlines, creating a learning opportunity every time students open a browser. There will also be a weekly choice of activities to suit every group, and with a free pdf workbook included, you'll be free to do all the other things a form tutor needs to do.

## TrainingToolz

Schools have an ever expanding requirement for mandatory training, from induction through to safeguarding and CPD. And it's not just teachers who have the legal requirement to participate; non-contact staff, contractors and not least governors all have a requirement set out by the DfE to undertake various courses. To bring all of this training in would not only be logistically challenging, but hugely expensive, so schools are increasingly turning to their own staff to create and deliver peer-to-peer training. TrainingToolz allows schools to quickly and easily convert their training material into online courses to share with their colleagues. The platform is flexible, enabling you to create tests, quizzes and surveys. Not only that, but because all of the content is tracked online, you can quickly provide evidence of the activity that has taken place in your school.

## FrontRead

FrontRead is a unique online training course that improves reading speed and text comprehension, as well as helping to develop better reading strategies for each individual student. More than 70,000 students at 600 schools in Denmark are already using the programme, and now FrontRead is coming to the UK. Based on 25 years of extensive research about reading and learning, the company's methods and app have been developed with a basis in recognised theories on peripheral reading, eye span, and working memory. FrontRead is a combination of physical training of the eye, training of the brain's ability to recognize patterns, and an increased awareness of the reading process. Together these elements optimise daily reading – both analogue and digital.

## Skoolview

Skoolview is an institutional collaboration platform for schools, parents, and extracurricular activity providers to manage all communications and activities associated with a student's learning journey. Skoolview offers services covering school branded mobile apps for individual schools and MATs that reduce administrative effort and cost, drive efficiency and improve parental engagement. The company also offers LA branded mobile apps that enables them to generate revenue and support local small businesses. It's one platform, with infinite possibilities.

## Nanolive

Nanolive has developed a revolutionary microscope, the 3D Cell Explorer, which allows students to explore living cells and their organelles in 3D without damaging them. The company believes that interacting with live cells and working with real scientific instruments has a great impact in inspiring young students to choose a future career in science and technology. Nanolive's educational program (cell.academy) engages students and teachers in interactive biology learning through cutting-edge technology. The organisation's mission is to empower educators to develop hands-on experiments to help students to gain a much deeper understanding of cell biology. The package includes the 3D Cell Explorer microscope, step-by-step instructions, tutorial videos, worksheets for students, and more. Additionally, all participants can connect and exchange their cell results on a dedicated cloud platform to engage students, teachers, and researchers in interactive cell learning.

## KANDA.CARE

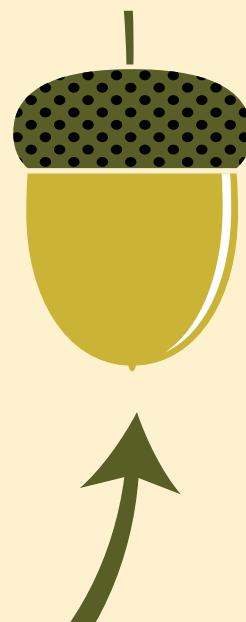
KANDA.CARE is a low cost, high impact, tablet-based behaviour and learning management system for schools. An intuitive tool that is quick to learn and use, it ensures that robust, consistent 'on the go' data capture is possible. KANDA.CARE's straightforward approach saves administration costs, teachers' time, and gives schools a consistent solution for collecting and analysing data. This system was designed with maximum engagement for students and staff at its centre, and can be customised to your school's unique identity and values. KANDA.CARE makes links between behaviour, teaching and personalised learning to deliver evidence-based school improvement that motivates and transforms progress for all with ease.

## People Diagnostix

Flourishing at School (FAS) is a cloud based software solution for secondary schools wanting to excel at whole school wellbeing. Rather than seeking to identify those who are distressed, or 'at risk', FAS uses a positive psychology approach to assess the degree to which individuals have developed the 'pillars' of good mental health to stay well and optimise quality of life at school and beyond. The FAS survey was refined and validated in an Australian university study involving 15 schools and more than 7,500 students. As a software solution, it can be administered by schools with summary reports able to be created within the software at a whole school, or subgroup level (e.g. cohort, sex, form/house group). Resources for self-development, goal setting, and classroom interventions also feature in the software. FAS is a leading indicator of mental health, useful for proactive wellbeing interventions at both an individual and collective level.



"Space is limited, and competition to be selected is fierce, making it an essential destination..."





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lockncharge





# Resources update

Discover how LocknCharge has partnered with schools in the USA to design a new charging solution

LocknCharge is known for making lives easier for educators around the world through innovative mobile device charging solutions. With a mission to stay on the cutting edge of technology in education, LocknCharge does everything possible to learn about the needs of its customers. In alignment with this mission, LocknCharge recently partnered with the Putnam City School District in Oklahoma, USA.



## 1:1 DRIVES CHANGE

As one of Oklahoma's premier districts, Putnam City Schools serve 19,000+ students throughout 27 schools. Their main goal is to prepare students to be self-navigating thinkers for life. In order to accomplish this ambitious goal, the district has deployed 1:1 iPad devices in all of their middle schools and is working towards a 1:1 iPad deployment in every classroom throughout the district. As they began to shift towards this new teaching environment, their charging needs also began to shift, and they soon realised the need for a unique charging solution.



## WICKED - A £5,000 GIVEAWAY!

LocknCharge will be launching the Putnam 16 Charging Station in Europe at the BETT Show held in London on January 24 - 27, 2018. In tandem with this grand debut, they are also giving away a £5,000 classroom makeover. Simply stop by the LocknCharge stand for a demo of the Putnam 16 to be entered into the draw. Visit [www.lockncharge.com/eu/makeover](http://www.lockncharge.com/eu/makeover) for details.

YOU COULD  
**Win a £5,000  
Classroom Makeover!**  
#LightenUp your classroom



## BRILLIANT PARTNER FOUND

Without a product on the market to fit their needs, Putnam City Schools partnered with LocknCharge to design a custom charging solution. LocknCharge worked hand-in-hand with the district's Executive Director of IT, Cory Boggs, to create the Putnam 16 Charging Station. It features a slim, cabinet-style design made with fully-welded steel for superior security. Each station holds 16 iPads, and the units are stackable to accommodate additional devices without taking up valuable classroom space. It also features external colour-coded LED lights for each slot, allowing teachers to see if an iPad is charging (red) or ready to use (green) without opening the station. Cory stated, "There aren't many vendors that would take the time to really listen to our vision and allow us to create a solution that perfectly meets the needs of our teachers". The school district will install 500 Charging Stations during the 2017-18 school year.



## More information

To find out more, visit  
[www.lockncharge.com/eu](http://www.lockncharge.com/eu),  
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# teachwire

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**[www.teachwire.net/teaching-resources](https://www.teachwire.net/teaching-resources)**



# Safety first

Are your staff and students ready for lockdown?

Safety and security are always a clear priority for UK schools; and recent events underline how important this is. It's not just direct attacks on school property which are causing concern, but other incidents which potentially put staff and students at risk. Examples of dangerous occurrences include armed raiders running into a school after a robbery, a secure unit abscondee on the loose in Conwy, a man wielding a gun outside a Cambridge school and a shooting outside a Liverpool school. All these resulted in schools going into lockdown.

It is essential that accurate information is communicated clearly and quickly throughout the school, no matter whether the situation warrants evacuation or lockdown. Schools must have a working fire alarm fitted by law, but many use the same fire bell to announce class changes. This can lead to confusion; in



the event of a possible violent intruder on the premises, the last thing any school wants is pupils streaming out onto a playground and gathering at assembly points.

To solve this issue, some schools have installed integrated class change and PA systems such as Bodet's Harmonys, which store a range of different tones, melodies



and pre-recorded voice messages. As well as routine announcements such as class change, lunch or the end of school, in the event of an emergency they enable specific alarms to be broadcast across the entire site. That way, both staff and pupils know what's happening and what action to take.

Bodet's Lockdown Alert System functions on an IP/POE network, and can be part of Harmonys, a 5-in-1 Class Change System which also includes Class Change, Synchronised Clocks, PA and music streaming functionality.

**For more information, or a free site survey, please contact Bodet or visit BETT stand A260.**

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# Reach out

Involving parents at every stage of a young person's education can lead to much better outcomes, says **Lawrence Royston** - so who is doing it best at the moment?

**P**arents and carers need to be engaged throughout a child's education, and while the age of their youngster might not impact their desire to be involved, there is undoubtedly

a difference in the way school engagement takes place across the various educational phases. This change comes about for a variety of reasons, including increasing independence of the student as they get older, along with a more extensive number of contact points for the parent - but nonetheless, it is important that the standard of communication remains high at all points.

Groupcall spoke to both parents and members of school senior leadership teams to gauge what the difference between primary and secondary school parental engagement is,

and which of the two appears to be the most effective.

All questions asked the respondents to grade their opinions on a scale of 1-5, with 5 being the most positive answer and 1 being negative.

## Parental expectations

To start the analysis off, we put a direct question to those on the receiving end of the communications activity: parents themselves. They were asked about their involvement with their children's education on a day to day basis, and the results highlighted a clear difference between those with primary and secondary aged youngsters.

The 5-star responses were more commonly given by primary school parents, with the implications being solidified at the other end of the scale - secondary schools got a much

higher ratio of 1-star responses. A possible explanation for this might be to do with parents struggling to adapt to the transition as their children move up to secondary school, having being accustomed to one to one interaction with teachers, and missing the personal relationships they had been used to.

However, when the 1 and 5 star responses are removed, the results are not as different as you would perhaps expect. For both primary and secondary schools, approximately three quarters of responses were between 2 and 4 stars. Whilst primary schools shaded ahead of their secondary counterparts, it was not by a lot. 2-star responses were a match, and the difference in 4-star responses was only by 5 percentage points. The implications for this are that primary and secondary schools are not all that different when it comes to keeping







## FURTHER READING

If you are interested in finding out more about the research discussed here, you can download the **Parental Engagement Effectiveness Report** in full at [groupcall.com/resources](http://groupcall.com/resources). Here you will also find an eBook with guidance for compiling a parental engagement strategy.

parents content, but that secondary parents are more likely to be extremely disappointed than extremely pleased with the communication they receive.

### Quality and quantity

As a rule, schools appreciate the amount of effort that goes into maintaining a good school-home relationship, and are ready to ask whether or not they could be doing more.

Surprisingly, given the responses of the parents explored earlier, secondary schools claim to be committing a lot more effort than primary schools. This is demonstrated among the top ratings for those asked (4 and 5 star responses), where 62 per cent of secondary schools ranked themselves, compared to 51 per cent for primary schools. When examined in conjunction with parental perceptions, this suggests that either parents expect more to be

delivered as their children grow older (which is perfectly reasonable as they approach crucial exams), or that the extra effort schools do commit is inefficient, misguided or misplaced.

In terms of frequency of communication, the results showed no obvious distinction between primary and secondary schools, despite our expectation of the latter having more to communicate about. At both primary and secondary stage, the schools that communicate with parents on a daily basis are very much in the minority. Most schools reach out on a weekly basis, with a small chunk opting to do fortnightly. Those that only reach out once per term are mercifully rare.

### Infinite variety

When examined alongside each other, the responses fail to line up perfectly. Parents believe it is primary schools who are better at engaging them, yet secondary schools claim to dedicate more of their efforts towards it. They both communicate with roughly the same frequency as each other.

There are two possible explanations: the first is that primary schools are more focused with their messaging when they reach out to parents. This could be because there are fewer teachers for parents to hear from, or perhaps because children in the earlier stages of education spend more time with their teachers, who in turn understand their specific issues more.

The other explanation is that the nature of parental engagement changes as a child gets older. With primary school parents having just one main point of contact and secondary schools having around a dozen, it is much more difficult for secondary schools to be consistent. Given the difficult nature of speaking to so many teachers outside of parents' evenings, it is likely that most of the engagement they receive comes from school office communications. In this case, secondary schools may well be devoting more of their time and resources towards keeping parents engaged, but due to the lack of face to face communication, the parents are much less satisfied than they are when primary school teachers grab them for a few minutes.

While we have examined the impressions from a wide range of schools, every establishment is different, and thus different methods will work better for each of them. What is always important, is that schools have a distinct parental engagement strategy and communications plan, looking at a mix of methods and channels as well as best practice. If this is based on research about what parents actually want and how they want it (perhaps with ongoing surveys to evaluate communications effectiveness and satisfaction), they will be well on their way towards establishing a strong system within which young people can be fully supported both in school and out of it.

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## ABOUT THE AUTHOR



**Lawrence Royston** is managing director of Groupcall. Find the company at Bett 2018, on stand C190.



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# Rugged and reliable

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STM makes a wide variety of products designed with the educational environment in mind. With direct feedback from educators, it has developed tablet and laptop cases built to withstand the requirements and rigours of the classroom. STM also has a full line of shoulder bags and backpacks to carry and protect digital gear, books and daily necessities. ID tagging and custom logos are available as well.

## Discover the dux difference

A 'dux' in STM's home country, Australia, refers to the best student in class; the one who scores the highest on every exam. As the name suggests, STM has developed a best-in-class solution with the dux line of protective cases for iPad, MacBook, Microsoft Surface and more. Each offers rugged protection without bulk, clever combinations of materials, and a few added features for extra credit.

The hallmark of every dux case is the clear-back design, allowing your devices to be asset tagged/ barcoded without the need to remove the case. The light yet tough construction – which passes military-spec drop tests – is designed to protect your devices from the challenges of the classroom environment. However, unlike other rugged cases, the dux is easy to install and remove: no tools are required and they

fit nicely into charging carts.

Every iPad user can benefit from dux. The dux for iPad cases feature a patented magnetic cover that folds into a stand for both typing and viewing. The dux for iPad Pro provides integrated Apple Pencil storage and won't get in the way of your Apple Smart Cover or Smart Keyboard. "

For schools using the Microsoft Surface/ Surface Pro, dux has yet another benefit: an integrated infinity stand to accommodate nearly unlimited viewing angles for typing and drawing. MacBook users, meanwhile, can sport a clamshell dux design, which provides bump protection for the lid and base of your laptop without obscuring any ports or vents for cooling/connection/charging.

## Ace in the pack

Ace is a collection of purpose built laptop bags, made from quality materials to provide the finest available protection. Getting digital gear safely (and comfortably) from home to school and back requires something with superior performance. That's why the company encourages you to put Ace to the test. From the classroom to the playground to school commute, nothing beats this collection and its ability to take everything that kids dish out. Designed with direct feedback from educators and level IT professionals, STM has created a line that delivers the ultimate in high tech protection. Like dux, Ace products offer military 26 drops from over 1.2 metres high.



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Ace briefs feature 360 degree, multi-layer protection with multi-layer. A padded and suspended sleeve integrated into the bag's backbone allows for both protection and organisation of your devices. Extra pockets provide storage for hard drives, portable power and chargers. They may be rugged, but they are not bulky. Their lightweight, slim design makes them an easy and comfortable carry. Finally, Ace products are made from super-durable, water-resistant materials, and are designed to be easily customised with school branding/logos.

STM has more than 18 years' experience of protecting digital cargo. If you're looking for smarter ways to protect your technology investment – and ultimately save money – you need to talk to the company's education experts.



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# LAST WORDS

No matter how far we've come already, the most important phase of our edtech odyssey still lies ahead, says **JL Dutaut...**

**Y**ou've read this far, so it's probably safe to say you're interested in technology in education. And at the same time, whether you're a

full-on convert to the promise of edtech's transformative power, or a teacher or school leader just looking for a solution to a problem, you'll no doubt be aware that classroom technology has its critics.

Indeed you will, one way or another, have come to terms with the many false dawns the industry has suffered. And yet here we all are, on the last page of *Technology and Innovation* magazine.

It does nobody any favours to categorise the sometimes vociferous disagreements over technology's role in education as a battle of prophets versus Luddites. No doubt, there are a few in both of these camps, but the majority are not. In fact, there's probably a nice little algorithm that can place us all on a neat bell curve. I can't see why it would be useful, but that wouldn't stop someone writing it.

Therein, perhaps, lies the crux of the issue.

## Early adoption

I can't think of a better analogy for where we are in respect of edtech than the monolith in *2001: A Space Odyssey*.

A technological spy left by an ancient

spacefaring civilisation to monitor and to stoke the development of intelligent life on Earth, the monolith's discovery pushes the film's plot forward.

Initially, it is discovered by our ape ancestors, who immediately learn to use tools. And the first thing they do with this new skillset is to clobber anyone without a tool hard over the head. If that isn't a great metaphor for how teachers were treated who were slow, or refused, to adapt to the first wave of edtech, I don't know what is.

I will never forget a lesson observation early in my career when I was graded 'unsatisfactory' for failing to use ICT. There were no computers but mine, and I had no use for it, but that wasn't the point. The observer couldn't tick the box on the sheet. End of story.

That was 14 years ago. We still did paper registers.

## Further exploration

The next time in the film (or, if you must, the book) a monolith is found, it's on the Moon, urging mankind onwards to explore the solar system and the stars. A still warlike and disunited humanity now develops artificial intelligence which, predictably, doesn't go according to plan.

And here we are, teaching in the future, with vastly improved tools for home-school communication, more reliable ways to set homework and check it's been done, and a vast array of means to present our curriculum.

Yet here we are too with vast amounts of data about our staff, our students and their families stored in our IMS. We generate data from measuring students, which we use to generate data to measure

staff and schools, and in turn to measure school systems against one another. We measure for measurement's sake – to satisfy the variables in sundry algorithms.

All this in classrooms where the vast majority of interactive whiteboards are nothing more than projector screens, and first-generation iPads gather dust. Somebody profited. Somebody always profits.

## Future advances

*Space Odyssey's* third and final monolith differs from the others. It stands, on the edge of our solar system, to judge finally whether we are worthy of survival. Given our propensity for disharmony, it deems not. Having got that far, it turns out that what mattered was the journey, and not the destination. The trail of wreckage in our wake is our undoing.

Technology can revolutionise our practice, and as we stand on the cusp of its greatest impacts yet, we must wield it responsibly. So far, and seemingly to the bemusement of some enthusiasts, treating our teachers and students as so many monkeys and giving them so many keyboards has not produced the collected works of Shakespeare.

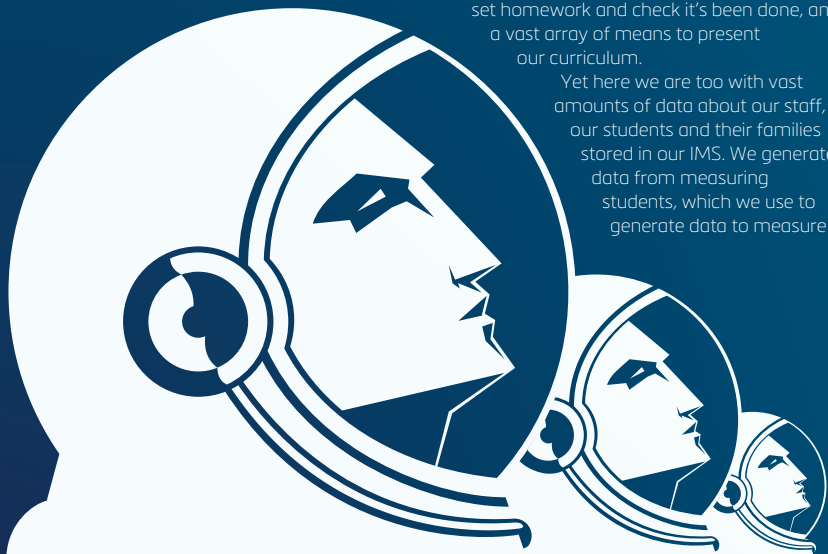
But Shakespeare is still there to be learned.

Incidentally, there are some fantastic YouTube videos to help us do it. Just type in the search bar, and let its algorithm do the rest.

## ABOUT THE AUTHOR



**Jean-Louis is a teacher of media, politics and citizenship. *Flip the System UK: A Teachers' Manifesto*, which he co-edited with Lucy Rycroft-Smith, will be published by Routledge in January.**





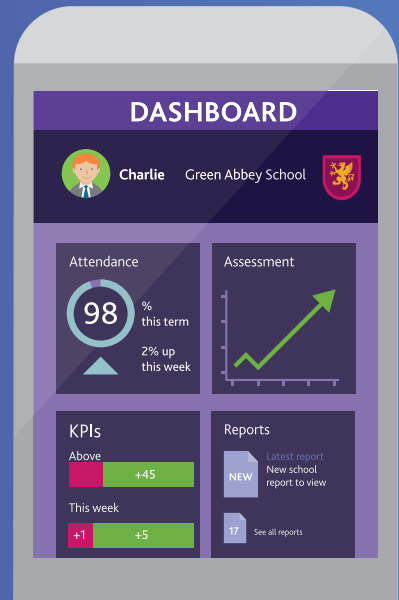
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EXCEL LONDON



The risks of cyberattacks, ransomware, and industrial espionage is on the rise, while at the same time EU regulations for the protection of personal data will reach a new level with GDPR (General Data Protection Regulation) entering into force as from May 2018. Organisations and companies need to have reliable and secure storage in place in order to protect their sensible information as well as the personal data of their customers.

The education sector collects pupil and workforce data that schools, local authorities and awarding bodies hold. Buffalo NAS devices are designed to offer maximum protection – by providing flexibility, accessibility, and the ease of protecting the department's sensitive information. By switching to a NAS device, schools will take this strain off servers, allowing them to work efficiently and seamlessly whilst simultaneously increasing the ease of accessibility to folders and documents for everyone, both internally and externally.

**Buffalo NAS are secure devices in many aspects:**



**Closed System**



**Secure Set-up**



**Data Encryption**



**Passwords**



**Anti-Virus**

(TS3000/3010 & TS5000/5010, sold separately)



**Backup, replication,  
failover and encryption**



**Anti-Theft Features**

- Software Protection: Boot Authentication  
- Physical Theft-Protection

[www.buffalo-technology.com](http://www.buffalo-technology.com)

**BUFFALO™**