Interactive technology brings a biology lesson to life at the Royal Hospital School

TOMORROW'S WORLD

FAR from the teachers pressing chalk on to blackboards and pupils scribbling notes into dog-eared exercise books so familiar to previous generations, today's classrooms are increasingly becoming fully digital domains.

Tablets and laptops are usurping notebooks, interactive whiteboards facilitate more engaging lessons and students are even able to explore far-flung places from the comfort of their seats thanks to the wonders of virtual reality.

And while debates surface over whether such advances are an entirely good thing, staff at schools up and down the country are making the most of the possibilities presented by the latest innovations.

"Technology is about preparing the young for their future lives", explained Stuart McCagney, head of digital learning at Maidwell Hall School. "Like it or loathe it, today's young will never live a day without a computer in their pocket, on their wrist or in whatever future guise.

"Our schools must enable them to harness that power to become lifelong learners."

While it acknowledges the potential provided by digital advances, All Hallows School's ethos is to employ technology only when it enhances the curriculum.

Head of digital learning Richard Kirby explained that hi-tech kit is rolled out to enable children to achieve things that would otherwise be impossible.

"Using a green screen and an iPad to transport children to the rainforest where they create a documentary about the Amazon rainforest means their learning is creative and inspiring," he added.

Technology plays an intrinsic role in the education of students at Packwood Haugh School, where every classroom is now equipped with an interactive whiteboard. Three dedicated computer suites are packed with laptops and iPads, pupils use drawing tablets during art lessons and the PE department uses video to analyse and improve sporting performances.

The same is true at St Lawrence College, where interactive screens and specialist software enhance lessons across the entire curriculum and the technology owned by pupils themselves adds to the educational mix.

Deputy head (academic) Will Scott told us: "Technology has crept into many areas of teaching at St Lawrence College, significantly with pupils' ownership of hugely powerful and sophisticated smartphones with a wealth of useful applications.

"The resources available for enquiry-based learning have never been greater; the challenge is in developing the skills to use them so that they enable greater depth of learning and engagement rather than acting to distract.

"We retain tight control of pupils' devices to ensure that when they're in use, it's to the benefit of learning."

Talbot Heath School provides 1:1 availability of iPads to pupils from year three all the way up to year 13, as well as a bank of the tablets for youngsters in its pre-prep department – a factor highlighted by head of e-learning Jo Maule as a particular positive.

"Having the use of an 'instant on' device enables pupils to use autonomy when notetaking, presenting and sharing information," she said. "It helps engage pupil interest and embeds interdisciplinary learning."

Advanced kit such as interactive projectors is one part of the technological offering at Malvern St James Girls' School, where social media is also used to add depth to pupils' education.

Director of sixth form Alison Kingshott said: "Each department has its own Twitter and Facebook feed, curated and monitored by heads of subject and teaching staff, to present interesting articles and topics to students relating to their curriculum work.

"It helps students read around a subject in the same way as we would traditionally have encouraged them to read books, specialist publications and national press to broaden their understanding."

At Salisbury Cathedral School, year seven and eight pupils receive a Google Chromebook and the internet giant's classroom feature is also utilised extensively.

IT manager Andrew Stewart said: "This means that teachers can set work and provide support materials that are available to the pupils in the classroom and beyond." »

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– Stuart McCagney, Maidwell Hall School –

Taking futuristic technology to a new level, Farleigh School deploys robotic equipment alongside whiteboards and tablets to enhance both curricular and extra-curricular activities – a tactic that has already paid dividends according to head of IT and computing Peter Napthine.

"Using technology in school can develop an interest outside the classroom," he said. "One year six pupil continued with his love of robotics at home. He built a robot that can solve a Rubix cube in about two minutes."

Stamford Endowed Schools has adopted an "Ideal Classroom" approach across its three schools which is immediately apparent on stepping into any teaching space.

The rooms don't have a teacher's desk, books and other equipment are kept in cupboards and the walls are painted a stark white, but everything changes once lessons begin.

"The room comes alive with projections, pupils writing ideas on the walls and groups huddling over desks sketching mind maps on the surfaces," explained principal Will Phelan. "The teacher, armed with the latest technology, can project pictures, text and videos onto the screens and wander around the room as he or she does so.

"The benefits of this programme are far-reaching, enabling us to take teaching methods and outcomes to the next level, improve results, increase pupil interaction and attract and retain high-quality teachers."

Mobile learning is a core concept at the Royal Hospital School, which has qualified as an Apple Regional Training Centre to share best practice throughout East Anglia.

Pupils in years seven-to-11 at the co-educational school are provided with a leased iPad, which head of digital learning Hamish Mackenzie insists is used as an educational tool rather than a toy.

He said: "They have access to an agreed suite of educational apps for use in the classroom and are supported by a secure network, well-resourced information systems department and on a peer-to-peer level though our digital leaders."

For all of the positives technology can bring to schools, education professionals have to balance its use against ensuring pupils' security.

Thankfully for parents, online safety is a key concern across the sector, including at Packwood Haugh where digital literacy sessions teach children how to use technology safely, respectfully and responsibly.

Steve Rigby said: "We not only teach them how to behave online, but also where to get help if things do go wrong, or if they are just not sure of what is a good choice."
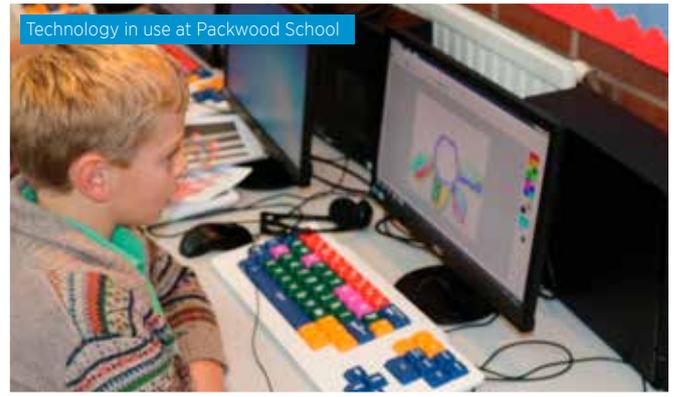
Maidwell Hall welcomes experts to teach youngsters about internet safety and the use of devices is monitored and restricted – but also discussed to encourage a healthy relationship between pupils and technology.

Stuart McCagney said: "The boarding school environment aids the holistic management of the structure of our pupils' lives during the term time and finds a happy balance between traditional values and the modern world."

Students at Farleigh School receive full guidance on online safety and security at the beginning of each year, but that information is reinforced during an "Internet Safety Day" in February featuring an assembly, follow-up lessons and projects on key themes including cyberbullying, online grooming and safe use of passwords.

Expert talks and restricted use of the internet are features of digital life at All Hallows School, which also takes a wider view of the potential impact of technology.

"In addition to the benefits modern technology can bring, we recognise that the internet and social media can play a disturbing role in a young person's developing psyche by helping to challenge and modify beliefs about what is normal

Technology in use at Packwood School

– normal in terms of bodies, minds and behaviour," said Richard Kirby.

"We encourage parents to work alongside us to create a set of caring, but clear, unambiguous, consistent boundaries to enable their children to feel safe and secure at home and at school and to develop their own sense of right or wrong."

Internet safety is taught specifically in computer science lessons and in PSHE throughout Salisbury Cathedral School, where each topic in computing science starts with a briefing about the relevant safety issues – ranging from copyright to cyberbullying – that may be faced.

Andrew Stewart said: "Now that the technology is available in every class and at home there is a larger group of adults who reiterate these themes. A supportive but persistent and repetitive approach seems to be most effective."

Pupils at Malvern St James Girls' School sign up to an acceptable use policy and receive talks from outside speakers about online safety, but Alison Kingshott said that they are also expected to learn by taking responsibility themselves.

She explained: "We know that it is not realistic to look over their shoulders all the time, and so we focus on educating the girls, so that they are empowered to use technology wisely and safely."

The sense of responsibility to pupils is felt keenly at Royal Hospital School, which ensures that its community is given frequent support and advice on remaining safe in the digital space.

In January, the school invited the South West Grid for Learning to review its online safety provision, with assessors interviewing staff, parents and pupils and reviewing the curriculum, systems, policies and support in the context of digital learning. As a result, the Royal Hospital School received the 360 degree safe Online Safety Mark and has been named a national "Beacon of Good Practice".

Talbot Heath's Jo Maule said that the increasing frequency with which pupils are accessing the internet has meant that staff are keenly aware of potential pitfalls and children are taught to play an active role in keeping themselves safe.

She said: "We teach our pupils to be discerning users of the internet and use their common sense when issues arise. They also know that there is always help and support »

available if they need it."

St Lawrence College adopts a "system-wide" approach, including regular pupil and parent e-safety sessions which are reinforced as part of day-to-day learning.

"Without engagement from parents and teachers, it is hard for pupils to understand the potential consequences of their behaviour before it is too late," said Will Scott. "Technology provides channels for existing problems to manifest and spread, albeit more quickly and far beyond the school walls."

While schools are fully engaged in guarding against technology's potential risks, they are also among society's most innovative adopters.

Stamford Endowed Schools' Ideal Classrooms initiative will see 142 rooms transformed into fully-interactive spaces where writing on the walls will be the new norm and interactive touch projectors bring learning to life.

Its "flipped classroom" approach encourages the learning of information at home to enable deeper discussions to be held during the school day, while webinars have been used to help year 11 pupils – some taking part from their mobile phones – to prepare for exams.

Maidwell Hall School uses digital developments to allow budding DJs to produce albums, photographic fans to capture images on iPads and cricketers to refine their technique through video-based coaching.

Stuart McCagney added: "A talking, moving, sensing, life-size Dalek often roves through the reception hall – no-one has been exterminated yet!"

Introducing technology to previously lo-tech activities has proved popular at Packwood Haugh School, where a recent event had children "clamouring to be involved", according to Steve Rigby.

"During a special off-curriculum day during the summer term, one of the children's challenges was a treasure hunt with a difference," he explained. "They had a wonderful time racing round school using iPads and QR codes to solve the clues."

Exploiting technology is certainly at the heart of life at Talbot Heath, where pupils can publish their own ebooks, programme robots or virtually explore the human body in science. A new STEAM hub featuring holographic and augmented reality spaces will add more opportunities.

Asked what innovation has proved the biggest hit with pupils, Jo Maule said: "They love our Google Cardboard virtual expeditions; exploring space, under the sea and travelling the world without leaving the comfort of their classroom."

Sometimes it is the simple things that excite most and a Salisbury Cathedral School maths teacher has started to enthuse her pupils by sharing parts of her lesson online.

Andrew Stewart explained: "Using an app called Loom to capture her computer screen and a usb microphone, she records the parts where she uses the interactive whiteboard to introduce new concepts and then shares the clips in the Google classroom.

"To her surprise, she has been applauded in class and now hears that mathematics is 'cool!' The pupils are now being encouraged to produce some of their work in a similar way and this is also being received with great enthusiasm."

Youngsters in years three-to-eight at Farleigh School have used technology to develop their own online "e-portfolios" using the presentation software Sway.

The portfolios showcase their academic learning, achievements and extracurricular activities and can be accessed via computers, tablets or mobile phones.

Peter Napthine said: "The e-portfolio project has opened up opportunities for local community outreach with Farleigh pupils visiting local residential care homes, showing residents their work on iPads. It is also a great way for children to share their learning and life in school with their families."

St Lawrence College's Will Scott explained that staff are moving from tried-and-tested systems into a more integrated electronic learning environment using Office 365 applications and devices.

He said: "As part of curriculum development, this move will facilitate exciting changes and improvements in the way our pupils experience the joys and overcome the challenges in their learning."

Whether you are quick to embrace technology's march or yearn for simpler times, it is hard to deny that the digital revolution is opening up new opportunities for pupils.

But even if you fall into the latter camp, fear not – All Hallows' Richard Kirby has proof that the old and new can complement one another.

"Perhaps surprisingly, technology in our library is actively encouraging children to read more books," he explained. "Online quizzes test reading comprehension and total numbers of words read are instantly updated. Pupils aspire to read a million words or more and parents and teachers can monitor progress, ready to give praise when due." ∎

All Hallows School pupils get to grips with computing

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