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Welcome...

It's been frequently observed that following the upset, stress and trauma of the pandemic, schools at least saw an inspiring demonstration of just how capable and resourceful educators can be in their use of technology when the situation calls for it.

With things now somewhat calmer – inasmuch as life in a typical secondary ever is – we can start to see the legacy that lockdown learning has left behind. As Emma Darcy and Les Hopper observe on p50, it's done much to reconfigure the ambitions schools have for their digital offerings, the expectations of students and their families, and the confidence staff now have in their ability to deliver on those.

And yet, positive though this post-pandemic injection of confidence has been when it comes to edtech, there remains a great deal of uncertainty as to how technology will shape the futures that today's young people can expect to navigate. The experience of remote learning couldn't help but feel double-edged, in a way – it played a vital role in ensuring continuity of learning at a critical time, but also highlighted just how central screens, operating systems and computing devices have become to how many of us now perceive the wider world.

On page 64, Robert Wigley offers the sobering observation that the digital revolution has effectively rewired adolescent development as we know it. The inexhaustible novelty, stimulation and diversions of virtual spaces are compelling teens and children to be 'always on' and forever connected, while the pressures and difficulties of simply getting by in tomorrow's seemingly resource-scarce and prohibitively expensive world will only continue to mount.

If that all sounds a bit bleak, then you can blame the background hum of endless 'cost of living' warnings and doomy discussions of dire energy shortages playing out across the media as I write these words. Yet even setting aside the small matter of cutting edge edtech needing electricity if it's to actually do anything, it's worth contemplating those traits identified as the most valuable in the years ahead according to our panel on p18.

Innovative thinking, empathy, self-motivation, ambition – each one stemming from personal, very human impulses and interactions. Technology continues to be a great facilitator – but the tech itself is nothing without knowledge of how to use it effectively, an awareness of what it's capable of and a sense of when it might be best to look up from those multiple screens...

Best wishes

Callum Fauser, editor
callum.fauser@theteachco.com

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ON BOARD THIS ISSUE

Bronnie Williams is a teacher and KS2 lead at Cornerstone Academy Trust

Graeme Lawrie MBE is partnerships director at ACS International Schools and a Bett Advisory Board member

Kim Rihal is the co-founder and CEO of Equal Education

Monir El Moudden is a teacher of computer science

Olivia Wolfheart is membership engagement manager at BCS, The Chartered Institute for IT

John Galloway is a consultant and trainer specialising in edtech and SEND

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> We have been using LanSchool for a number of years now and absolutely love it. It has proven to be an invaluable tool for teachers to monitor and assist pupils whilst in IT rooms. From a technical point of view, it's been so easy to deploy and manage.
>
> **Colin Dean, Network Manager Ferndown Upper School, Dorset, UK**

Lenovo

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ASK THE EXPERT

"Technology can present distractions"

Lenovo's Coby Gurr explains how LanSchool can empower teachers when it comes to digital learning

1 What differences have you observed with schools' use of technology pre-and post-pandemic?

One obvious change is the widespread adoption of 1:1 devices. Many schools previously had 1:1 for certain grade levels, but the pandemic forced them to figure out how to get devices into more students' hands, which often required them to be resourceful. Lenovo is working with schools to help where we can. We're currently running an 'Equity Program', whereby every Lenovo device purchase results in a small donation towards helping underprivileged children gain better access to technology.

One interesting outcome of distance learning is that teachers and students have become much more comfortable and skilled with using technology. Another is the growth of more innovative lesson planning. Those speak to the fact that technology will remain a staple in the classroom going forward, and that people are generally more accepting of that now.

2 Where do you see LanSchool fitting into this new edtech landscape?

Introducing new technology into classrooms can present distractions and various other challenges for teachers. It can be hard for teachers to know exactly what students are working on, especially with remote learning. LanSchool gives teachers more oversight of this, so they can guide students' digital learning both in class and when they're at home. Teachers can glimpse what students are seeing on their screens and message any who seem to be losing focus, and there are some built-in safety features for limiting the websites students can visit.

3 How easy is LanSchool to roll out?

There are two versions of LanSchool. LanSchool Classic is a self-hosted software application schools can use on campus, while LanSchool Air is a cloud-based version that works both on campus and at home. 'Classic' has to be installed and hosted locally on school devices, but the process is straightforward and it's very easy to manage once installed. It also includes enterprise-level data collection, allowing IT teams to see how the software is being used and spot where teachers might need help. LanSchool Air can be implemented remotely by simply sending links to teachers and students and is fully maintained by LanSchool, so there's no IT infrastructure needed on the school's part before they can start using it. Our software integrates well with Google Classroom, Clever and Azure AD, making classroom rostering extremely easy, and it even supports the importing of CSV data.

EXPERT PROFILE

NAME:
Coby Gurr

JOB TITLE:
General Manager, Lenovo Software

AREA OF EXPERTISE:

How edtech innovation can improve learning outcomes

BEST PART OF MY JOB:
"Creating digital solutions for schools that have a direct impact on the lives of teachers and students."

4 LanSchool is partly designed to reduce teachers' workload –can you tell us more?

LanSchool allows teachers to see when students are off-task or performing tasks incorrectly. Teachers can discreetly reach out and correct students before they require additional supervision, and also save time when guiding students by pushing content to all devices or blanking screens as needed.

ASK ME ABOUT

CONNECTIVITY – and how LanSchool's classroom management software is an effective complement to digital learning in connected and virtual classrooms

SECURITY – in relation to us partnering with online safety specialists to provide LanSchool's safety features, making it easy for schools to adopt a multi-pronged approach to their digital security

CONVENIENCE – and how LanSchool includes support for the single sign-on integrations used by Google Classroom and Azure Active Directory

lanschool.com/gb

THE NEXT BIG THING

TECHNICIANS

Give your KS3/4 cohort a STEM experience to remember at this upcoming interactive careers gallery coming to the Science Museum in London

[THE TREND]

According to Gatsby, 'Every young person needs high-quality career guidance to make informed decisions about their future.' The Gatsby Good Career Guidance benchmarks provide a framework for schools to create provision that supports pupils in understanding their options. The Science Museum in London is working closely with the foundation to create a new gallery that will showcase a world of careers in one place, opening soon.

WHAT'S HAPPENING?

A brand new careers experience for young people is opening at the Science Museum in London this November. This free, interactive gallery called Technicians: The David Sainsbury Gallery, will recreate STEM workplaces across multiple sectors, including health science, creative arts, manufacturing and renewable energy. Young people will get hands-on with interactive exhibits that simulate a range of technical job-related tasks – from creating visual effects on the set of a blockbuster film, to analysing blood samples in a medical laboratory, operating a robot in a manufacturer's workshop and much more besides.

Schools can also book a free 'Meet the Employee' workshop held in the gallery, where pupils will get to meet technicians and experience what it's like to perform their job, complete with a hands-on activity and Q&A session.

WHAT'S THE IMPACT?

The gallery is built for 11- to 16-year-olds and conceived as an engaging, enjoyable and impactful experience for secondary-aged pupils. It will give educators the opportunity to showcase the breadth of technical careers available, and organise productive conversations for their students in a stimulating environment. The end result will be a positive enrichment experience that encourages young people to explore their own interests and skills throughout their visit via interactive exhibits, videos of technicians sharing their career journeys and real-life encounters with technicians in the bookable school's workshop.

WHAT'S NEXT?

Helping educators provide their pupils with engaging career encounters is important to the Science Museum's mission to inspire futures. A gallery guide will be available shortly after opening, to which will contain useful information for educators on how to best prepare for a visit, as well as a video that can be shown to pupils ahead of time to explain more about the gallery and what to expect.

We will also be producing accompanying learning resources that highlight the technical career stories shown throughout the museum, to extend the careers experience and encourage school groups to discover the fascinating career stories behind certain objects in other galleries.

SCIENCE MUSEUM

Contact:
033 0058 0058
info@sciencemuseumgroup.ac.uk
sciencemuseum.org.uk/learning

Discover More...
To learn more about the gallery and receive the resources, sign up for the Science Museum's Secondary Education newsletter for teachers via **bit.ly/T10-SM1**

GET INVOLVED

Opening 3rd November 2022, Technicians: The David Sainsbury Gallery will be available for school groups to book and experience a world of careers in one place. To book, go to sciencemuseum.org.uk/learning and select 'Book Now' to check the availability of your preferred visit date(s) and use the handy itinerary builder to plan your day – don't forget to add the gallery to your itinerary. The 'Meet the Employee' school workshops will be available for visits taking place from January 2023 on Tuesdays and Thursdays.

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THE AGENDA:

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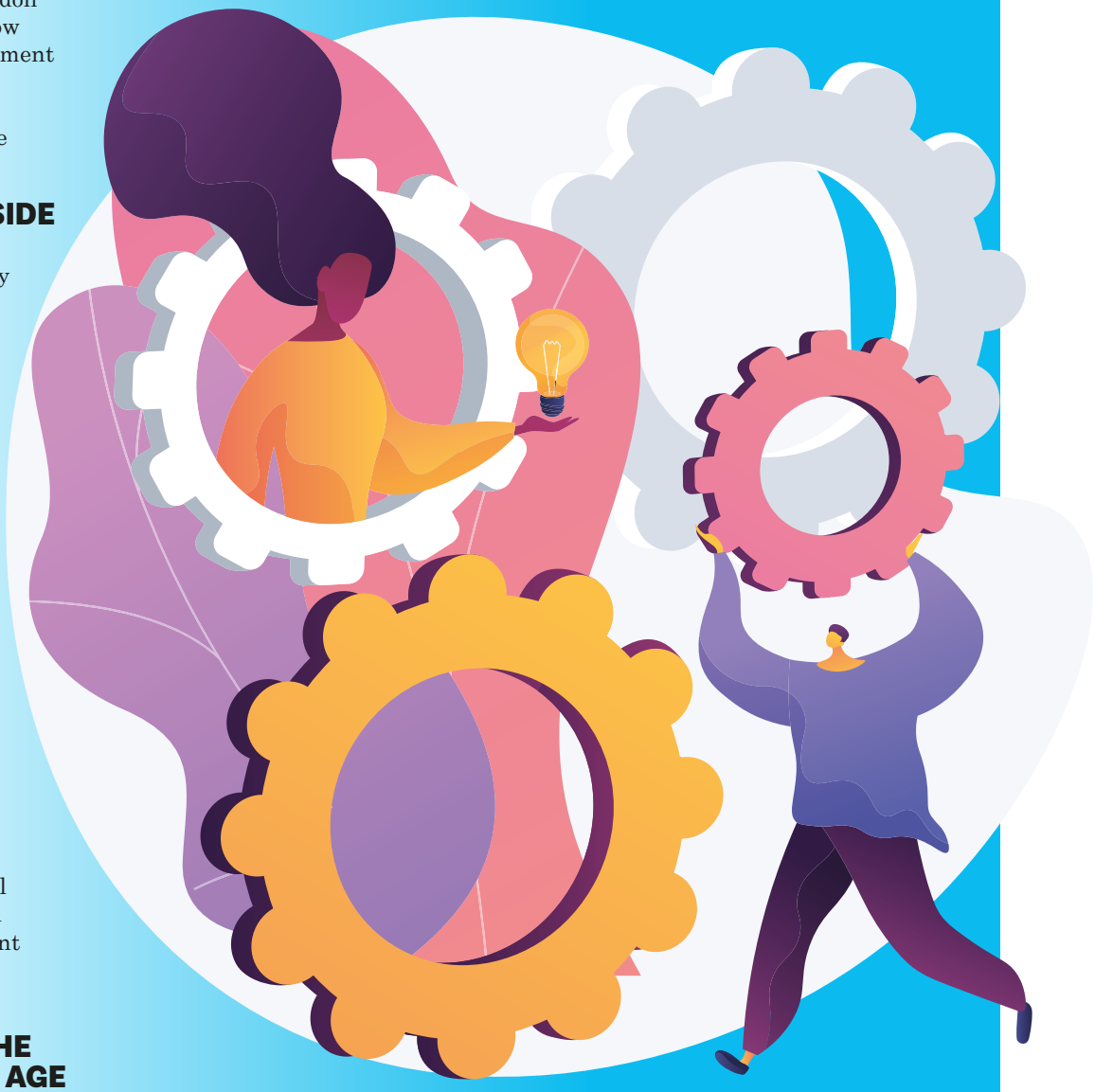

External EXPLORATIONS

The Science Museum in London outlines some ideas for how students' academic attainment can be supported through memorable experiences encountered outside of the classroom...

In the words of the Council for Learning Outside the Classroom, "Students experience life and lessons beyond the classroom walls. These experiences expand the horizons of young people, opening their eyes to the wonders of areas such as art, heritage, culture, adventure and the natural world."

Stories have always served as an engaging way of bringing subjects to life. Often, a well-presented story can help to align the sometimes abstract and theoretical knowledge your students learn in the classroom with everyday objects and interesting artefacts.

It's safe to assume that your local area or city is filled with interesting stories – from inventions that first came into being somewhere nearby, to local businesses that have pioneered novel methods and approaches to working with new technologies.

It's therefore well worth venturing outside the classroom from time to time, and taking your class on a journey to discover the scientific and technological stories unique to your region. Your local authority should be able to provide plenty of information regarding the history of local industry and details of notable locations to help you to plan a journey through time, thus opening your students' eyes to technological innovations and marvels that have taken place on their very doorstep.

Explore your local area and discover technological innovations on your doorstep

"Taking students out of their classroom environment and into a different space can do much to help spark their creativity"

Museums can also be a great resource, often hosting trails and talks of their own aimed at bringing objects from the past to life. The National Railway Museum in York, for example, seeks to showcase the past, present and future of innovation with respect to rail travel.

The Science and Industry Museum in Manchester, meanwhile, presents visitors ideas that changed the world, from the time of the Industrial Revolution and beyond. For a more industry-specific learning experience around technological advancement, there's the National Science and Media Museum in Bradford, which explores the rich history of, and exciting recent developments within broadcasting.

Workplace experiences

Another way of making learning around STEM subjects more engaging can be to provide students with opportunities to gain knowledge and awareness of specific jobs, and encourage them to think more broadly about the range of career pathways that the study of STEM subjects can open up.

Hearing from employees themselves – and better still, seeing the environments they work in – can help inspire young people to reconsider the study options available to them, and how these might be parleyed into a rewarding, engaging, and perhaps even lucrative career.

According to Gatsby's Good Career Benchmarks, educators ought to "Provide real-life contact with the world of work," while "The best motivation and advice tend to come from people in the jobs themselves".

Organisations of various sizes, in many different

Experience job related tasks and meet employers (Image credit – Science Museum Group)

fields, are increasingly keen to do their bit to inspire tomorrow's workforce. As such, a number of them will now happily allow schools to tour their workspaces. A useful starting point here is Founders4Schools – an organisation specifically set up to connect schools across the country with local businesses situated nearby. For more details, and advice on how to get started, visit their website at founders4schools.org.uk.

In-person professionalism

It's also worth exploring the information available at large-scale careers events, such as the Big Bang Fair, which is next due to be held in June 2023 at the NEC in Birmingham. Events like these are great for introducing students to a wide range of careers and further education options all in one place, since bringing together different organisations to speak to young people is a core part of what they do.

Another example, New Scientist Live (coming up on 7-9 October at ExCeL London), promises to open up the world of science and technology via a series of inspiring talks and demonstrations. Elsewhere, there's a free interactive gallery taking place at the Science Museum in London – 'Technicians: The David Sainsbury Gallery' – which is due to open this November. This will feature hands-on exhibits that simulate a range of job-related tasks, giving your students the chance to sample a whole world of different STEM careers within one location.

The exhibition will also include a number of workshops that are free for school groups to attend, where students will work with genuine employees on simulated activities based on core aspects of the latter's daily tasks and responsibilities.

Take it outside

As many teachers will know first-hand, taking students out of their classroom environment and into a different space can do much to help spark their creativity. Even if it's just the school playing field or a local park, changing students' immediate surroundings can dramatically change the dynamic of a lesson, and prompt your students to start thinking in whole new ways about how to tackle particular problems or projects.

Why not ask your students to think of a problem, and consider how technology could be used to help solve said problem? Unfortunately for all of us, the dangers presented by climate change remain a highly topical area of concern. You could therefore try assigning different groups within the class a specific question, such as '*How can we reduce our carbon footprint using technology?*' before tasking them with devising a solution and presenting their ideas before the class.

Alternatively, simply look around you. Our homes are filled with numerous examples of one-time technological breakthroughs and innovations, from kettles to smart speakers. Households across the world have been transformed in various ways over a number of years, so the next homework project you set could potentially revolve around the technology students have in their own homes. Why not encourage them to investigate how it works, why we need it, what would we do without it?

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Thinking outside THE BOX

Ian Moverley outlines why young people can teach industry a lesson or two when it comes to innovation...

"If it's colder underground, why don't you build a fridge underneath the kitchen to save energy?"

That was one of many ideas presented by groups of 11- to 13-year-olds at the inaugural Whirlpool Purposeful Innovation competition, held in June this year. The challenge set to students was to redesign a tumble dryer, washing machine or fridge/freezer so that it could be manufactured in a more environmentally friendly way, result in less energy/water consumption or help reduce consumer food waste.

Following a launch event hosted at Whirlpool's Peterborough showroom, where students learnt about the inner workings of kitchen appliances and their environmental impact, the participating students – all in Y7 to Y9 – had just over eight weeks to complete their design proposals, working in teams of up to five. The live final then saw the teams present their ideas and designs to a judging panel drawn from the company's product design, engineering and marketing departments.

Creative, yet practical

The purpose of the competition was to inspire the next generation to think innovatively and creatively about how we can build a more sustainable future, while opening their eyes to what might otherwise be seen as 'uninspiring' career paths into kitchen appliance design and manufacturing.

The result? A sea of creative, yet practical ideas that could really teach the industry a lesson when it comes to innovation.

"We need to think differently, beyond the confines of our existing assumptions"

As well as the aforementioned underground, energy-saving fridge, other ideas included a fridge with a recycled glass front, so that consumers could easily check the food inside without opening the door, letting out cold air and wasting power; a revolving fridge that positioned the oldest food items at the front so that they can be used first; and a new food storage device created using a biopolymer gel, for storing and cooling items without using any energy.

The overall winning entry, 'Team Power Washing Ranger' from Sir Robert Pattinson Academy, was a new washing machine equipped with two drums, enabling both a white and coloured wash to be completed at the same time using the same water, with a filter in place to prevent dirt from the 'white' wash ending up in the 'coloured' wash as the water travelled from an upper to a lower drum. The idea was chosen as the winner because it was so innovative, yet also purposeful and practical. The team had given thought to how both drums could be powered simultaneously via a cog mechanism, thus requiring requring no more energy than a standard washing machine.

Beyond the curriculum

Whirlpool's teams are frequently exploring new ways to minimise the environmental impact of our products and business as a whole, so we recognise the need for fresh innovation. Among the skills we're looking for in our current and future employees are the creativity and the confidence to think beyond established norms. There's a whole world of career opportunities available in engineering, and while some might see it as 'boring', in reality there is a lot of imagination and innovative thinking involved.

A big part of getting students engaged with STEM is helping them recognise their power and potential to make impact in a real-world context. The classroom curriculum might be largely focused on theory, but as much as possible, try taking things a step further by showing students how to practically apply that knowledge in practice – creatively, and with purpose.

Whirlpool additionally runs two FIRST® LEGO League Challenge tournaments in Bristol and Peterborough. Designed for young people aged 9 to 16, FIRST® LEGO League

is another fantastic way of engaging young people in STEM – this time, by challenging them to programme a LEGO robot to complete a series of missions on a themed playing field.

As well as the robotics task, students must also develop an 'Innovation Project', where they're tasked with identifying a problem based on that year's theme and designing an innovative solution. This year's theme was 'Cargo Connect', which revolved around the future of transportation. Students were encouraged to link what they were doing with their robots on the challenge mat, with finding innovative solutions to improving transport infrastructure.

FIRST® LEGO League tournaments take place all over the UK, but if there aren't any tournaments or similar initiatives running in your local area, a great resource for educators is the STEM Learning website (stem.org.uk). There, you can find a range of STEM-based resources and activities, apply for funding and connect with local industry ambassadors who can visit your school to support your learning and provide a fresh perspective on the various opportunities available within their industry.

Give students freedom

To help inspire students and get them ready to take part in this year's Whirlpool Purposeful Innovation competition, we gave the teams demonstrations of how the components within different appliances work, a presentation on key consumer considerations when buying a kitchen appliance and two videos from our team – one detailing the principles of good product design, and another on the use of sustainable materials.

Students also received a handbook containing the judging criteria and advice on what to focus on during the eight weeks of the project. Beyond that, they had complete freedom to explore their ideas.

They came back to us with detailed research findings into current kitchen appliances and possible material solutions, in-depth overviews of the decision-making processes that led to their product designs, surveys gauging whether people would actually buy the products, and creative presentations of how and why the new products would work within the current consumer context.

It was phenomenal to see the level of detail, teamwork and creativity that went into their projects. I believe that by giving students the freedom to explore their ingenuity through a task such as this, you'll be surprised at the results too.

Future challenges

For this inaugural Whirlpool Purposeful Innovation competition, we chose to focus the process around the generation of ideas and designs, targeting students in Y7 to Y9, as opposed to Y10/11s studying design and technology at GCSE. The feedback we received from teachers was that for some students, the competition was a stretch from what they were learning in the classroom, but that the process gave students important opportunities to develop new skills and flex their design and engineering muscles before taking their GCSE options, while building their awareness of paths they might not have previously considered taking.

In future, we may evolve the competition a step further by asking students to actually build a prototype product. This would entail an even greater challenge, but that's not necessarily a negative. It would certainly help students learn yet more new skills, build resilience and further develop their sense of self-confidence.

Given the extent of the challenges our planet and the people on it now face every day, we need to think differently, beyond the confines of our existing assumptions.

Whirlpool has committed to a set of ambitious 2030 Net Zero targets. Running competitions like Whirlpool Purposeful Innovation not only provides young people with opportunities to explore their creativity and learn more about the appliance industry, but also helps our own internal teams learn something too. Everyone comes away feeling inspired and motivated to make a positive impact.

ABOUT THE AUTHOR
Ian Moverley is communications director at Whirlpool Corporation; for more details, visit bit.ly/TI10-whirlpool

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WHY I LOVE...

Gaynor Clipsham, director of science at the Benjamin Britten Music Academy, discusses her experiences of *Oxford Smart* Activate's impact on outcomes

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TALKING ABOUT: *OXFORD SMART* ACTIVATE FOR KS3 SCIENCE

How did you get involved?
When we found out about the *Oxford Smart* Curriculum Service and the research behind it, it ticked all our boxes, so we signed up as a Pioneer School to trial *Oxford Smart* Activate with our KS3 classes. This is so much more than buying a resource off the shelf – experiencing and influencing the thinking involved has been really empowering. It's exciting for us to have a part in shaping *Oxford Smart* Activate. We really feel like we're part of the journey.

Has *Oxford Smart* Activate helped improve your lessons?
Yes, definitely. As an example, previously we asked students five questions at the start of every lesson to cover any misconceptions, identify any gaps and do a little bit of re-teaching before the lesson. With *Oxford Smart* Activate, there are three 'reactivate' questions at the start of every double-page spread, which we have been able to pick up and use. This has not only saved time and reduced teacher workload, but the embedded reactivate section has shown us how it's better to focus on the specific knowledge students need for the lesson, and make sure they know it before we teach it.

How has it supported your students?
It's helped students check their understanding and regulate their own learning, so they've become more confident learners. It's given students more opportunity to reflect on what they are doing, especially by using responsive feedback. We're making feedback more of an active discussion, and being very responsive to the changes we need to make.

CONTACT
oxfordsecondary.com/smartactivate
schools.enquiries.uk@oup.com

How has it supported your teachers?
It's so supportive, particularly for those teaching out of subject. The teaching resources are fantastic, but also the background research – it's all there. When you go into Kerboodle you can follow all the research, including videos.
The data is great, and enables teachers to identify progression. This has given them a real boost, just to see how well their students are doing. I've never known staff to come up and tell me, '*My class all got over x%!*' in over 20 years of teaching.

What has been the outcome for your school?
A key difference we're noticing is that the students are loving science. I've been at this school for two years and I'm seeing the excitement building in them. There are more practicals built in which, together with seeing how to learn and think for themselves, and knowing where they are with their knowledge, seems to have made their understanding so much better. I'm really excited for when these students sit their GCSEs, because I believe we'll see a massive difference.

WILL IT WORK FOR YOUR SCHOOL?

+ **A fully-featured, evidence-led science curriculum for use at Key Stage 3**
+ **Brings together curriculum, resources, assessment, next steps, CPD, data and insights**
+ **Powered by Kerboodle, the online teaching, learning and assessment service for secondary schools**
+ **New *Oxford Smart* courses for KS3 English and Maths are currently in development**

What 'digital' DEMANDS

We're often told that the workplaces of tomorrow will call for a different set of skills – so what attributes should students be looking to hone now, in order to future-proof their careers?

With 97 million jobs involving AI expected to be created by 2025, it's evident that technology and innovation are changing how we live and work.

New technologies, coupled with an ever-changing digital landscape, have meant that success in these new roles calls for a certain set of skills and a shift in mindset.

Here, five world-leading experts from the fields of business, technology and education share their thoughts on the skills that will be most in demand as the digital age continues to advance, and the areas you should prioritise for your own development, as well as those that will be of most benefit to the next generation.

LEARN HOW TO LEARN

Bernard Marr – futurist and technologist, strategic advisor to companies and governments and author of *Future Skills: The 20 Skills and Competencies Everyone Needs to Succeed in a Digital World* (Wiley, £18.99)

We are undergoing a period of immense change. Tasks are being increasingly automated, remote work is becoming a permanent feature at some of the world's largest companies and career paths once considered inventions of science fiction are now degree programmes at top universities. To successfully navigate these changes and thrive in the new world of work, it's vital that you stay curious and learn how to learn.

Lifelong education is becoming a key part of modern life, with a huge array of on-demand learning materials being offered for free via online platforms and social media. Short courses and micro-credentials are an excellent way of exploring new skills in bite sized chunks. Whether you are looking to stay ahead of emerging technological trends, or retrain and change careers, remaining curious and passionate about learning will ensure that you have a fulfilling and future-proofed career.

INNOVATIVE THINKING

Chris Griffiths – author of *The Creative Thinking Handbook* (Kogan Page, £14.99) and CEO of mind map app Ayoa (ayoa.com)

According to the companies that took part in the 'Future of Jobs Report 2020' published by the World Economic Forum, innovative thinking will be the most important skill required by 2025.

Human ingenuity is at the core of competitive advantage, and businesses now more than ever need a constant flow of new creative ideas, angles and solutions to say abreast of rapid change and uncertainty.

Knowledge is no longer power. Even the use of knowledge is no longer power. It is the *creation* of new knowledge that leads to meaningful innovation. Educational systems are very good at imparting knowledge, but no matter how smart or how much we know or can recall, we must be able to adapt and evolve. Conventional thinking, engrained habits and existing strategies often restrict us to focusing on what we already know, rather than on bringing something new to the table.

Creativity, and critical and analytical thinking are all aspects of innovation that can be taught. I've spent 20 years researching innovation, and it's abundantly clear that innovation isn't an event – it's a process that can be taught and repeated.

EMPATHY

Robert Wigley is Chairman of UK Finance and the author of *Born Digital – The Story of a Distracted Generation* (Whitefox Publishing, £9.99)

Over the last 10 years, technology has become ubiquitous in every aspect of our lives – from the way we communicate to how we search for information, educate ourselves. shop and participate in politics and religion. It's delivered huge benefits in terms of convenience and choice.

And yet, whilst maybe not the intention, technology has also systematically attacked the places in which we would have previously developed empathy. It interrupts bonding with our colleagues and students, and prevents us from having focused conversations.

We therefore need to find new ways of facilitating empathy-building time. That means opting to restrict screen time, and making efforts to be fully present during face-to-face interactions. Put the smartphones physically at a distance during these periods; turn off your notifications and move apps that aren't crucial to the second page of your homescreen.

Try and focus on the person you're communicating with, since it's the reactions of your interlocutor that will tell you when you have said something they don't like, disagree with or find offensive. Without empathy, an individual can't build a successful career. Without empathy, society as a whole will continue to become ever more polarised.

SELF-MOTIVATION

Elliot Wise is a serial entrepreneur, business growth expert, mentor and founder of Limitless Mentoring – an entrepreneurial skills programme for aspiring business leaders. Find out more at limitless-mentoring.com

Self-motivation is essential to future-proofing your success – not just in your career, but in life.

People often attribute success solely to self-discipline, but the two go hand in hand. There is no point in being disciplined enough to work hard if you aren't working towards a fulfilling end goal. By defining your end goal, you'll find the self-motivation you need to future-proof your success.

For many, this goal may be monetary in the short-term. Often, however, once a certain level of financial freedom is achieved, that original motivation quickly disappears. You're back to working for the sake of working again, which isn't a sustainable path to a successful and happy career.

To really future-proof your success, you must be sufficiently self-motivated to routinely create new goals that drive you forward. Whether these goals are financial, familial, or fulfilment-oriented, continuously moving the goalposts gives us new ambitions to strive for, prevents us from stagnating and helps us find the drive we need to keep on succeeding throughout our career.

AMBITION

Bruno Lanvin is an economist, president of the Smart City Observatory at the International Institute for Management Development, and author of the book, *The Future is Young* (IMD International, £16)

Our world is changing rapidly. Amid this fast and disorienting pace of change, many people instinctively look to political leaders and world-renowned experts for answers. As a result, important conversations that should be going on have been conspicuous by their absence – particularly conversations that should involve young people.

As new paradigms emerge that will one day govern how we live, work, learn and communicate, it's the youth that needs to be in the driver's seat and shaping them. The new generations must ensure that these new paradigms reflect their values and priorities, as well as their outlook and how they perceive their own place in the world.

Young people possess boundless energy, but often lack opportunities to show inspiration and hope. One of the most valuable skills we can nurture in young minds is the ambition to channel their creative vision and energies into shaping and moulding the future.

Laying the FOUNDATIONS

Olivia Wolfheart explains how a digital apprenticeship can serve as a gateway to a rewarding, well-paid career

Tech skills have never been in such high demand by employers, but there remains a shortage of people with the required knowledge. Once appropriately trained and qualified, some may therefore be able to pick and choose from a range of job prospects, put out there by firms lacking the necessary expertise.

Indeed, digital skills are becoming ever more vital across a range of sectors – from construction, health, media, retail, travel and hospitality, right through to the more traditional banking and engineering. Name an entry level role, and chances are that candidates will be required to possess some form of digital skills.

The apprenticeship opportunities currently showing most demand include those in the areas of business analytics, software development, digital marketing and cybersecurity. A digital marketeer, for instance, will likely find themselves helping deliver promotional campaigns via social media. A cybersecurity expert will be engaged in pursuing computer hackers. A data analyst will be tasked with providing the facts and context for crucial decisions.

Or perhaps artificial intelligence or machine learning appeals? AI isn't just about self-driving cars; it's already being used to manage incredibly complex commercial operations with high levels of speed, efficiency, and insight. Then there's working as a business analyst, where the day job may involve looking at how companies can make the best use of their technical systems and using data analysis to create further efficiencies.

Working while learning

An apprenticeship lasts a minimum of one year, and will typically see the apprentice spending 80% of their time learning and getting valuable experience in the workplace, and 20% 'off the job', participating in structured training.

Apprentices thus benefit from simultaneously earning a wage and gaining qualifications, with no cost involved for the training itself. The qualifications needed to commence an apprenticeship will largely depend on its level, the organisation involved and specific job role. Level 3 apprenticeships are approximately equivalent to two A Levels. Level 4 apprenticeships are equivalent to foundation degrees, while higher-level apprenticeships are equivalent to degree level and upwards.

Yet for all the opportunities and variety of experiences available, it's still the case that young people tend to view careers based around digital skills, computing and technology in a very particular way. The careers to which young people are most readily attracted tend to be highly visible – think doctors, vets, sportspeople, teachers – though it's worth driving home that these areas of employment all contain a digital dimension to them. Digital health solutions, for example, or the technology solutions now routinely deployed in classrooms.

> **"Young people are often driven to improve the world in which we live"**

Young people are often driven to improve the world in which we live, which opens up numerous opportunities to demonstrate how technology can help. Examples might include the successful development of COVID-19 vaccines, or the range of ways in which technology is being used to combat climate change (such as improving waste management schemes in smart cities), and improve our overall levels of security (by protecting individuals and businesses from fraud and cyber attacks).

Relatable careers

A career in technology opens the door to a process of continual upskilling and pathways out to numerous exciting sectors. Whichever path students eventually choose for themselves, if they possess up-to-date digital skills and the ability to apply them, their employability will increase considerably.

A career in computing will help to enhance a number of transferable skills, including computational thinking and logical problem solving. A great way of making such careers more visible and relatable can be to take learning outside the classroom on occasion, or by bringing the outside world in.

There are numerous competitions and events open to schools, which are designed to inspire and inform young people about the career opportunities available to them in tech. Many teachers report finding such events helpful in positively influencing students to pursue technology-related career options. At larger scale events, there will tend to be technology professionals present who are willing to visit local schools, provide talks and demonstrations and even potentially mentor certain groups or individual students.

By showcasing role models in technology, breaking down stereotypes and bringing to life the exciting, creative and collaborative opportunities technology allows for, we can make tech careers much more appealing to young people.

CASE STUDY: CAMERON

As told by his mother, Claire

"Cameron struggled at sixth form college, and wasn't quite sure what direction to go in. He'd thought about an engineering apprenticeship, so I was surprised when he decided to go into IT. But it's great – he'll never be out of a job, because there are lots of careers you can go into.

There's still a perception that apprenticeships are trade-based, for plasterers and the like. There isn't enough information out there – it always seems that the emphasis is on A Levels, or going on to university. There needs to be more promotion in the media, so that people can be made more aware of modern apprenticeships.

I did a Youth Training Scheme in the 80s myself, which was like an apprenticeship in that I had to work and study. It was a great start to my career, and the places I've worked for since have had apprentices, so I was familiar with the idea of learning on the job.

Completing a digital apprenticeship gave Cameron insight into where he could go, and what areas might interest him. It's so important, when choosing a career, that you're able to be passionate about it.

The great thing about the apprenticeship is that it's given Cameron independence. He has a salary and has built up valuable workplace experience, along with everything else that goes with that, such as time management skills and team working abilities. He's had excellent mentors, and really put his whole heart into it.

To other parents, I'd say that apprenticeships are a fantastic gateway into a career which I would recommend it to anyone. I'm so proud of what Cameron has achieved now that he's qualified, and am very excited about his future."

ABOUT THE AUTHOR

Olivia Wolfheart is a membership engagement manager at BCS, The Chartered Institute for IT and a former GCSE computer science teacher

For the good of all

Graeme Lawrie MBE discusses how inter-school edtech partnerships could help bring about significant improvements in social mobility

It's no secret that budgets are a common topic of conversation among school leaderships. Leaders are often under immense pressure to provide excellent teaching in a safe environment, while simultaneously managing an ever-growing financial crisis. A decade-plus of education cuts in real terms have disproportionately impacted poor students, who are now less likely than ever to gain access to the same opportunities as their more affluent peers.

'Hidden learning'

Technology is changing how we learn and teach, but not everyone has the same opportunity to access it. Edtech can be an important tool in levelling the playing field for students via the following ways:

1. Providing more personalised and tailored learning experiences that can better meet the needs of individual students

2. Widening access to high-quality resources and content, thus diversifying the curriculum

3. Presenting new opportunities for collaboration, communication and connection with others

4. Saving teachers time by enabling the use of data to inform instruction and improve learning outcomes

Edtech can help bridge gaps between lower and higher-income students by providing them with access to resources – like e-books, online courses and educational apps – that may otherwise be unavailable or inaccessible for financial reasons, ensuring all students have the opportunity to thrive.

Technology is an excellent enabler, especially for students with SEND who might otherwise struggle with traditional classroom learning. Virtual reality and immersive virtual spaces, such as *Minecraft*, let players create and refine their own worlds through the use of simulated building blocks, letting them see how things play out visually.

Interactions with tools such as these shouldn't be restricted to isolated classes that present technology as a separate entity, but should rather be integral to everything schools do. And the only way to accomplish that is to give students regular and consistent exposure to them.

Collaboration is key

If they're to expand their offerings of new technologies, then school leaders and educators must collaborate. New technologies give schools the means to provide students with a variety of innovative learning opportunities, ranging from new approaches to producing and submitting coursework online, to blended learning and even flexible scheduling.

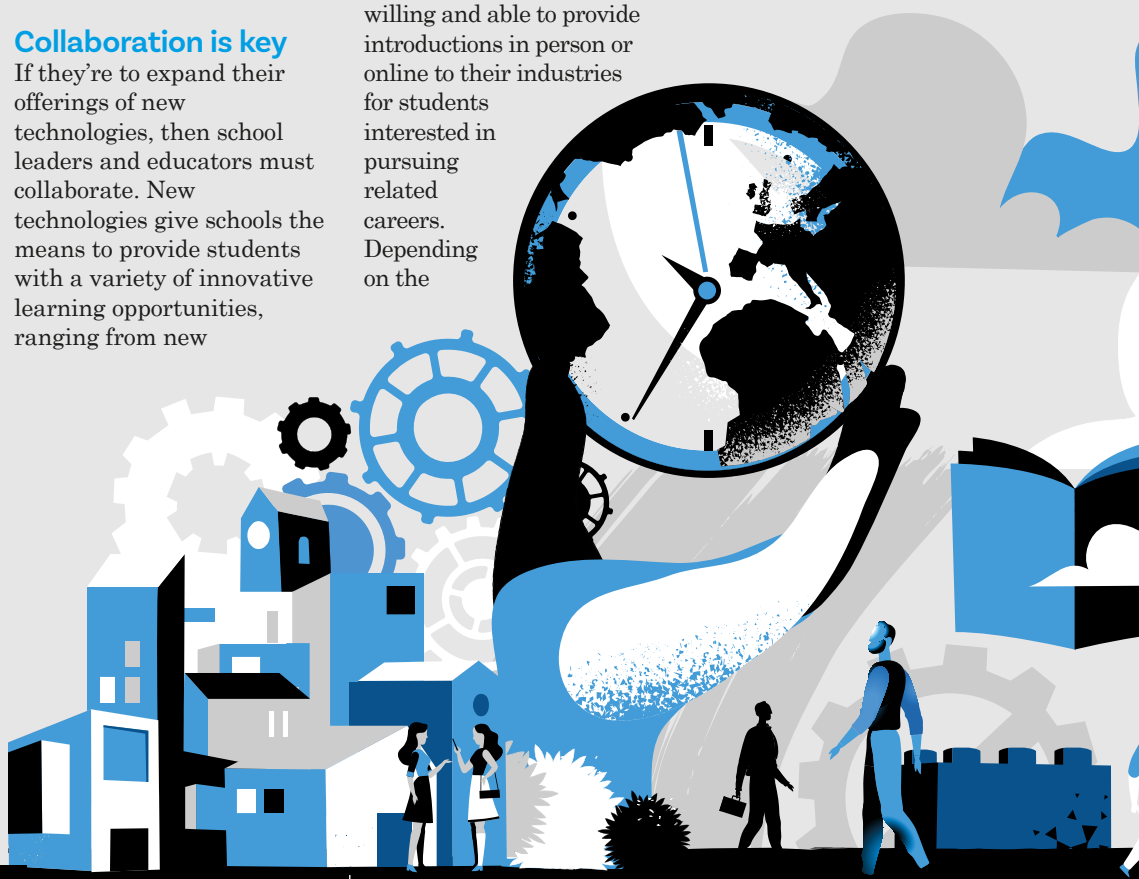
Schools can additionally use new technology to help identify and track student progress, create more personalised learning experiences for every student and measure the effectiveness of their staff's instructional methods.

While there may be no silver bullet to the issues now hitting the education system, there are some areas in which school leaders could consider collaborating in their efforts to ensure all students can access up-to-date technologies and the best possible education.

The first is making links with industry professionals, and seeing whether your school might be able to work with them on a regular basis. Local businesses may be be willing and able to provide introductions in person or online to their industries for students interested in pursuing related careers. Depending on the sector, students could variously learn about how, say, designers come up with new logos and graphical elements, how programmers create games, or what it takes to produce a physical product.

Shared, not duplicated

Independent schools meanwhile have the option of using charity funds to purchase resources, which can then be shared with multiple state sector settings on open days, or via dedicated 'Innovation Labs' or 'Maker Space' facilities. Another option could be for independent schools to offer 'outreach box' packages containing class sets of cameras, VR headsets and more across their region as part of a wider public benefit, social mobility and/or charitable endeavour.



Great opportunities could also be realised by having equivalent schools come together. A network of 30 or 40 schools could pool their access to shared classroom resources such as computers and tablet devices, thus reducing waste while also cutting down on training time, with teachers free to learn how best to deploy them from others who have already mastered their use.

For their part, edtech companies could be persuaded to provide student ambassadors with free or discounted products in exchange for trialling and testing new hardware and software solutions.

Collaborative, networked arrangements like these can reduce the risk of schools purchasing unsuitable technologies, while at the same time ensuring that in-demand resources are being used to their full potential. Another bonus is that the costs of technology upgrades can be distributed and shared, rather than duplicated internally across all schools in the network.

A shared ecosystem

That said, edtech is at its most effective when utilised by teachers who know how to integrate it into their broader teaching strategies. edtech companies could thus go beyond simply installing new technology within schools by also training teachers in its optimal use.

> **"Edtech is at its most effective when utilised by teachers who know how to integrate it into their broader teaching strategies"**

Yet while this might viable for some, it won't be for everyone. Given the ongoing lack of resources and opportunities to learn new skills across much of today's education system, it's all the more important that school leaders consider ways of creating an ecosystem whereby the benefits of edtech can be shared and used to provide opportunities for all students.

STEM subjects are now widely recognised as important for helping to prepare students for their future careers, and if used correctly, edtech can be instrumental in supporting students as they digest difficult STEM concepts. Today's children can expect to encounter many new and different tools over the course of their future careers, so it follows that the teaching they receive now must be sensitive to the unceasing innovation and advancement taking place in the world outside the classroom.

The process of teaching STEM subjects should therefore involve more than just one type of software or form of hardware. This generation of students should be encouraged to be receptive to change and open to adopting new technologies, while applying themselves to tasks with an adaptive and curious mindset.

Tomorrow's tech

To ensure future generations are prepared for the challenges of tomorrow, we must provide students with a wide range of learning tools. As much as possible, cutting edge and disruptive technologies such as VR, augmented reality, 3D printing and whatever follows them should be made familiar to students, who can then put them to use across a range of engineering and STEM-related activities.

Technology is already woven into every area of society, yet more can still be done to make it an integral part of education. It should be normalised in schools, and made part of every student's day-to-day expectations. We should be looking to foster environments where students are excited about future developments, and inspired to apply these new tools in the course of their learning.

The future needs more instances of successful collaboration, and we need to work together smartly. Education impacts everyone, and by joining forces, we can provide endless opportunities to the generations ahead.

ABOUT THE AUTHOR
Graeme Lawrie MBE is partnerships director at ACS International Schools and a member of the Bett Advisory Board

Learning in the misinformation age

Vivek Govil looks at how education finds itself having to evolve in an era of tech-assisted, large-scale misinformation

As of April 2022, there were 5 billion active internet users worldwide, accounting for 63% of the global population.

With learners increasingly using the internet and social media as their preferred knowledge source, the ability to distinguish between good information from reliable sources, and misinformation from seemingly trusted sources has become vital.

A new study by Oxford University Press (OUP), 'The Matter of Fact' (see bit.ly/TI10-FF1), has revealed that when looking for factual information, two thirds of people around the world turn to Google or other search engines. Perhaps more concerning is the fact that 42% of 16- to 24-year-olds use social media when looking for facts.

The research captured insights from 5,000 adults spanning five countries across the globe – the UK, US, South Africa, India and Mexico – in an effort to explore how people across the world seek out information and determine its accuracy. OUP's research further showed that nearly three quarters of respondents globally reported that the COVID-19 pandemic had made them more cautious about the accuracy of the information they encountered online. In Britain alone, 61% said that it has become harder to clarify whether something is true.

No more gatekeepers

There is now a need to look beyond the learning of facts alone when teaching the next generation. They need to be able to peel back layers of information and assess whether what they're reading or hearing is indeed factual.

Just because more of us are using social media doesn't mean that we're no longer interested in seeking out truth. 78% of us still consider the understanding of truth and learning of facts as the most important parts of education. Both undoubtedly still have their place in the learning process, but it's also the case that the wider education profession should continue to evolve, and focus on developing increasingly crucial critical thinking skills from a younger age.

In recent years, we've seen a shift in focus within education policy – and practice – in response to what's now being demanded of it by the outside world. Among the recommendations of the recent Times Education Commission were calls to reduce the amount of time spent preparing for and taking exams, and instead place a greater focus on creativity, communication and critical thinking across the curriculum. This is something to be welcomed, since these skills will be vital for young people growing up in the internet age.

Yet while progress has been made, the education sector still needs to further concentrate its efforts on the specific challenges being presented by the internet, and equip children with the skills they'll need to effectively assess the information they encounter and reach their own conclusions about its validity.

Increased internet use, and the rise of social media in particular, has been held accountable for accelerating the spread of misinformation. The 2022 Edelman Trust Barometer found that international 'Concern over fake news being used as a weapon' has risen to an all-time high of 76%.

> **"How we 'see' truth can be personal, and is often reflective of the different experiences we have of the world"**

We've all witnessed how social media has transformed the gatekeeping of information, enabling people to post and share information every second of the day, including efforts by some to intentionally perpetuate false information. Another challenge is that many users – including school students – can find themselves frequently communicating in echo chambers that reflect only their own views.

What's more, while many of us in the UK remain engaged in the pursuit of the truth, around half of us actually believe that facts should be open to interpretation. A third meanwhile agree that a work of fiction can 'represent the truth' better than non-fiction.

How we 'see' truth can indeed be personal, and is often reflective of the different experiences we each have of the world. It's still the case that educational resources can and should be used to impart hard facts that have been verified with evidence provided by experts, but even these can sometimes be interpreted differently, depending on context and an individual's experiences.

The 'how' of learning

To support the next generation in finding and assessing the truth, we must teach them how to think critically and consult multiple sources. High quality educational resources that place a focus on metacognition are a good start. We must help

learners become more aware of *how* they learn to enhance their learning, while also developing in them a deeper understanding of topics and the means to grow in confidence, resilience, and independence over time.

We also need to support teachers in delivering these resources, providing their students with the aforementioned skills and boosting their digital literacy. Our own Oxford Smart Curriculum, for example, has been designed with this in mind, supporting as it does the development of the cognitive and metacognitive skills needed for young people to be emotionally and intellectually equipped to feel comfortable with uncertainty.

It focuses on investigation, giving students the tools and drive to ask questions of the information they're presented with in the classroom. Its six key pillars – coherent curriculum pathways; high expectations; responsive teaching and learning; developing recognition and metacognitive learning; identity; and awe and wonder – aim to create an environment in which young people can thrive and develop their own identity.

Space to explore

As well as promoting knowledge and academic achievement, we also need to give learners the space to explore their curiosity. One way teachers can do this is by motivating students to experiment with, use and apply self-regulation strategies. This can begin with introducing different strategies, such as explicitly modelling the thinking process when writing equations in science, before then asking students to evaluate how successful a specific learning strategy was for them and how they could improve.

Then, as they progress through school, students could be encouraged to transfer strategies from one specific situation to another that's similar, but otherwise unfamiliar, by asking them '*How will you learn this?*' or '*What strategy will you use to support your learning or approach this type of problem?*'

Education can be used to not only teach facts, but also impart the skills needed to discern and question facts. Whether learners are taking on a new language, sitting exams, or conducting academic research, it ultimately remains important that the materials made available to them – as well as the way they are taught – help them to get under the surface of what they're being told, and help them challenge their thinking on that subject, outside of their own experiences.

It's only by giving the next generation the tools to interrogate and assess the facts they're taught that that we can empower them to make sense of the increasingly complex world around them.

HEADLINE FIGURES

Some of the notable statistics from OUP's 'The Matter of Fact' report

67% of global respondents turn to Google or other search engines when looking for factual information

42% of 16- to 24-year-olds use social media when seeking facts

26% of us in the UK turn to educational textbooks or websites when looking for facts

78% see understanding truth and learning facts as the most important part of education

61% of UK respondents state that it has become harder to clarify whether something is true

74% of global respondents agree that the pandemic has made them more cautious about the accuracy of the information they encounter

ABOUT THE AUTHOR
Vivek Govil is managing director of UK education at Oxford University Press

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CLASSROOM INSPIRATION

Fresh ideas to take teaching and learning to the next level

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Differentiation done right

David Hillyard considers how evolutions in education policy and advances in technology have altered the nature of classroom differentiation for the better

When I was a lad, differentiation was about whether you were on the 'green' table or – heaven forbid – the 'red' table. Occasionally, a student would disappear off to The Terrapin Building for 'a little bit of extra help'. Exactly what took place there was a mystery to anyone who wasn't invited.

Back then, it was simply accepted that Johnny was 'a bit thick' – that he'd manage what he could, and probably wouldn't make a big splash in adulthood.

The irony was that Johnny was actually the one who ended up with the big house and posh car because he became an electrician. It would seem maths and physics weren't such a barrier for him after all – at least not when they served a clear purpose.

A dangerous path

Even when I reached sixth form, there was little expectation of teachers doing anything differently when it came to differentiation. The job remained largely one of imparting knowledge, albeit now with a little more empathy and more frequent one-to-one teacher interactions, with the wooden sticks previously used to hit the naughty kids consigned to the history books.

Fast forward to 2008, and we saw the introduction of the Assessment for Learning Strategy, or AfL. Lessons were henceforth to be 'Planned to appropriately challenging learning objectives and intended learning outcomes using success criteria' (see bit.ly/TI0-DDR1).

The quest for 'outstanding lessons' had begun in earnest, prompting differentiation to take a peculiar turn. Teachers were now enthusing about clear objectives and outcomes, writing them on the board to be copied down eagerly by students. *"All must, most should, some might,"* ran the new mantra.

Different tasks sheets for different groups of learners became the norm. Thus were the level 4, level 5 and level 6 worksheets born. No lesson was complete without different work for the high-, middle- and low-ability students – the bluebirds, buzzards and wombats.

This was a dangerous path to embark on – assuming all students could be grouped by their previous attainment. In the worst cases, glass ceilings and self-fulfilling prophecies became rife. Still, boxes were getting ticked on observation forms, and teachers were keeping busier than ever, assessing themselves against all these new frameworks.

The powers that be therefore assumed all was well. But there remained a nagging doubt in my mind – shouldn't all learners have an equal opportunity to succeed in *all* tasks?.

Expectations for all

While the underlying strategy of AfL was sound, its application – as is so often the case – was sometimes misguided.

Thankfully, things have since changed. Here in 2022, high-performance learning preaches high expectations for all and scaffolding up, rather than differentiating down. This is long overdue, and now being practised with technology playing a pivotal role as a de facto TA.

That said, there are still plenty of misconceptions regarding technology being perpetuated in schools. Technology isn't replacing teachers; it's facilitating more efficient teaching practices, whereby provision can be tailored to individual students based on their needs.

We are now well into an age where virtually all students have some form of access to portable computing devices, with schools harnessing new opportunities for learning as a result.

The students of today have certain expectations of what education can – and indeed should – look like. Making that happen means embracing the promise of technology to drive the learning experience forwards.

Even better outcomes

Tools like Socrative (socrative.com) have become a staple in leading whole-group questioning, ensuring that

no students can disappear at the back of the class. We should now create more opportunities for one-to-one discussion between students and teachers, where 'why' questions are asked more frequently than 'what' questions, while other students make their own progress independently.

Of course, the challenge is finding the time for all this during a busy lesson. Differentiating with technology shouldn't increase workload, but rather facilitate an improved work-life balance and even better outcomes.

One solution is to use videos students can pause, rewind and watch again, untethering the teacher from the front of the class and changing their role from 'sage on the stage' to 'guide by the side'. There are many sources of great video content available online, but it's also possible to create great content yourself using a mobile phone to capture important aspects of teaching episodes and demonstrations.

Software like Showbie (showbie.com) can be used to collect assignments, but also provide more meaningful, powerful and less time-consuming forms of feedback, such as voice notes. You can also use software to create dynamic seating plans that allow students to help peers who may be struggling and encourage rich conversations between students who are excelling.

Elsewhere, the likes of Smart Revise (smartrevise.online) and Tassomai (tassomai.com) can automatically set personalised questions for computing and science lessons respectively, helping students to retain more knowledge over time and beat the forgetting curve.

Deciding on outcomes

Over the years, 'differentiation by outcome' has become a taboo concept – but was it simply misunderstood? Is it necessary for a teacher to specify the outcome of a task, or could students demonstrate their learning by deciding their own outcomes instead?

Learning can be amply demonstrated with the aid of a video clip, mind map, stop-motion animation, or brochure, to name but a few. Tools like Movie Maker (bit.ly/T10-DDR2), Padlet for display boards (padlet.com), Popplet for mind maps (popplet.com), Explain Everything for modelling an IWB (explaineverything.com) and Canva for assorted display formats (canva.com) all have much to offer.

The key is to engage students by putting them in the driver's seat, while at the same time freeing up the teacher's time to support, question, direct and challenge them. At the same time, however, we shouldn't forget the basics.

The future's bright

The Post-It app for iOS and Android can be used to collate handwritten student thoughts in a digital format. Microsoft OneNote's built-in Ink Math Assistant can help students solve handwritten maths problems, with an accompanying step-by-step guide to reaching the solution. You could even use a basic smartphone camera to share lesson information in advance by taking a picture of your whiteboard.

Technology enables students to create high-quality work they can feel proud of, while affording them the chance to make as many mistakes as they need to along the way – undoing, deleting, refining as they go, before ultimately delivering the best-possible finished product they can.

There can be no doubt that the future of education lies with technology. Augmented and virtual reality both promise whole new experiences for learners. Examination boards are investigating the potential for fully online exams and adaptive questioning that will remove the need for tiered papers. The recent need for blended learning approaches, while not perfect, have shone a light on a multitude of alternative possibilities.

The upshot of all this is that differentiation isn't about supporting weaker students – it's about enhancing, engaging and enabling the best possible learning experience for all.

THE TAKEAWAY

Differentiation is no longer about just supporting 'low ability' students, or providing different worksheets to different groups. The focus is now much more on enhancing, engaging and enabling all students on their own personal learning journey.

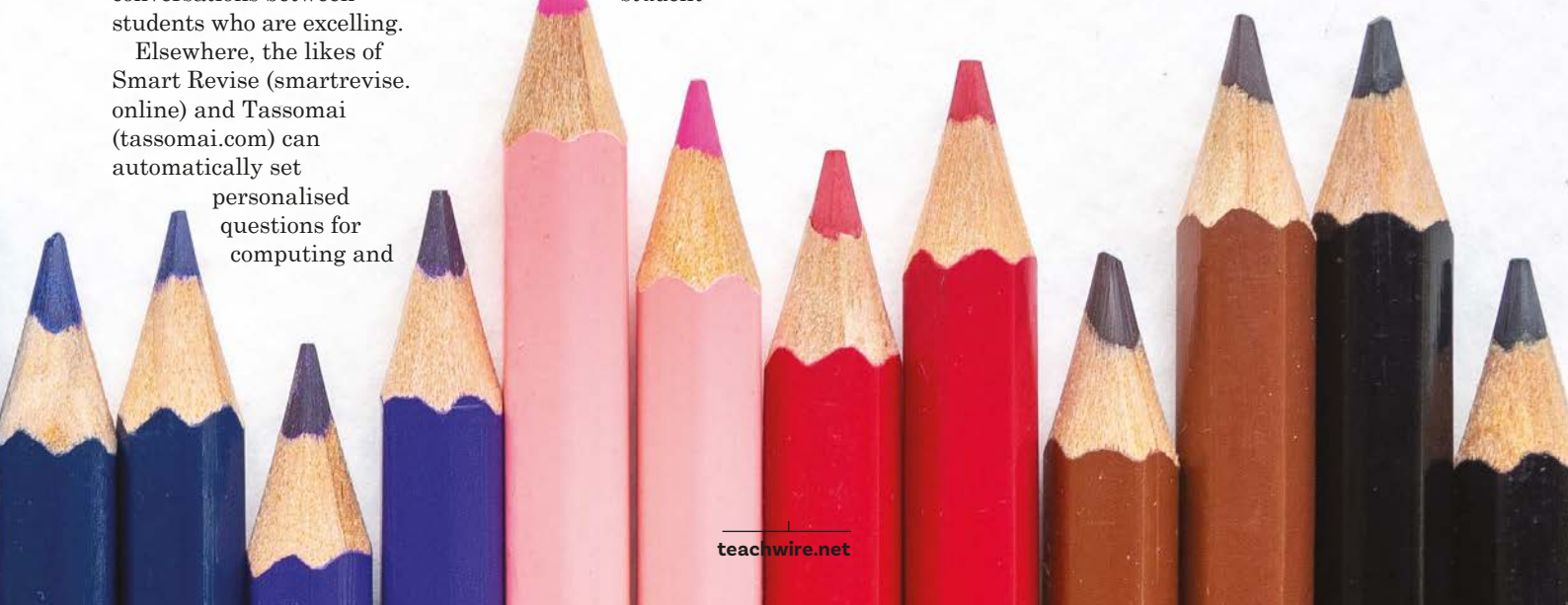
By making effective use of technology an integral part of their planning, delivery and assessment, teachers can expect the best from all of their students by scaffolding up, rather than differentiating down.

With the aid of today's technology, students can become active participants in the classroom dynamic, and play an even greater role in shaping their own learning experience.

ABOUT THE AUTHOR

David Hillyard has been a secondary school teacher for 25 years, having previously held roles that include head of department, assistant headteacher, chair of governors and subject leader for ITT with the University of Gloucestershire

Now better known as 'the Dave from Craig 'n' Dave', he supports thousands of schools, teachers and students with digital classroom resources – for more information, visit craigndave.org or follow @craigndave1



Screen tests

It's just a matter of time until formal assessments are carried out digitally, rather than on paper, observes **Monir El Moudden** – but there remain a few challenges to overcome first...

Teachers and students have emerged from the pandemic having learnt a huge amount about online learning, and how it can be best delivered. We all saw the need for resilience in the tech-enabled systems used by schools across the world, and witnessed the ability of teachers to adapt to change at a moment's notice.

Yet while some schools and teachers have continued to use digital assessments wherever possible, many others have opted to return to traditional paper-based exams.

So, as the pandemic was dramatically changing the landscape of education, I embarked on a school-based practitioner inquiry with the aim of evaluating the impact digital assessments were having on teaching and learning processes, as well as student outcomes.

Frame of reference

Assessments are an essential part of the teaching and learning process, particularly when evaluating students' work and performance. Educators' motivations for transitioning away from paper-based assessment models often include the desire to implement assessment approaches more in line with our increasingly digital society, opportunities to enhance the validity of assessments and the potential for improvements to teaching and learning.

My research sample consisted of six teachers – three computer science teachers and three non-computer science teachers – and 43 students spread across Y10 to Y12 due to sit their GCSE and A Level exams in 2023. Half the teachers reported having some experience of using digital assessments, whilst the other half described their experience as limited.

The students from my sample sat five online/onscreen tests using Microsoft Assignments and two traditional paper-based exams. I also compared the results of students who took the digital exams with a group that sat the same test on paper to measure any improved learning outcomes.

> ***"A key concern was that digital assessments made malpractice harder to detect and challenge"***

Compelling benefits

There is evidence that online/onscreen assessments, when employed in this way, offer clear benefits for teachers and schools. These include the prospect of auto-marking (whereby student answers can be automatically compared to a set of accepted responses), ease of providing feedback and record-keeping, a reduced possibility of marking errors and bypassing of physical distribution issues (papers going missing, transport of heavy volumes of paper and so forth). Exams can also be repeated multiple times without having to mass produce additional paper scripts, and there's the potential to carry out question-by-question analysis with reference to an overview of all responses. The marking and feedback stages of the assessment process are certainly much quicker and easier to complete than with paper-based exams.

Half of those teachers interviewed observed that the process as a whole was quicker to implement, saving them at least 30 minutes of time. Those teachers possessing more experience in implementing online/onscreen assessments indicated that they could save as much as 100 minutes on each assessment cycle per class. It seemed the more teachers used online/onscreen assessments, the quicker the process became to implement.

Students got to benefit too. On a difficulty scale of 1 to 10 (10 being very easy, 1 being very difficult) the score averaged out at 7.98, with 39 out of 43 students selecting 7 or better. 44% of my sample found online/onscreen assessments easier and quicker to implement, removing some of the anxieties caused by ineligible handwritten responses. Answers were easier to check, and it was easier to navigate between both questions and pages.

More compelling still was the impact that online/onscreen assessments had on students' learning outcomes. In almost all cases, taken from five separate assessments over the course of the year, classes that sat online/onscreen exams outperformed those that sat a paper-based equivalent by an average of 5%.

What are the roadblocks?

When asked to identify the challenges involved in using onscreen/online assessments, teachers cited access to

computer equipment, unreliable internet connections and the need for staff and students to receive training before using digital assessment solutions.

Half the teachers pointed to the limited tools available in Microsoft Assignments for letting students draw diagrams and show working without the use of a stylus (an option typically not available on desktop machines).

The most challenging factor was variable IT provision across different departments, which could restrict the ability of some departments to prepare themselves at pace, potentially leading to unfair outcomes for students. This was compounded by different departments often using a variety of desktop machines, laptops and tablets, all with different operating systems and web browsers. This could give rise to software compatibility issues and inconsistent hardware specifications across whole cohorts, affecting the likelihood of all students being able to sit their exams at the same time.

It was clear that teachers and students would require robust internet connections to ensure reliable access to assessment and lesson resources, and comprehensive technical support so that any issues could be resolved promptly. For their part, schools would need to be given adequate training and time to practice administering digital assessments, thus giving teachers more confidence and the capacity to provide their students with appropriate support.

Another key concern raised by the group was that digital assessments made malpractice harder to detect and challenge, As such, there would need to be careful consideration over how best to monitor this and maintain the accuracy of assessments, so that no student would ever be unfairly disadvantaged.

Net positives

A comprehensive introduction of digital assessments would require schools to overcome numerous digital challenges – something the DfE itself recognises, having published guidance for schools on meeting IT service and digital equipment standards in March 2022 (see bit.ly/ts116-osa1).

The DfE is known to be considering making more extensive use of digital exams within formal assessment, and is keen to explore its potential applications over the next three years.

Via my practitioner inquiry, I've seen first-hand how digital assessment can deliver net positives when it comes to workload, workflows and assessment processes. The evidence of student performance improving through the use of digital assessments seems positive, though it's still too early for conclusions – at least until more data is gathered from multiple departments across different schools.

I would therefore encourage school leaders across the country to begin collecting data from within their school settings, and commence the process of preparing their staff and students for the very likely prospect of formal paper-based assessments giving way to online/onscreen equivalents.

ABOUT THE AUTHOR

Monir El Moudden (@monirelmoudden) has taught computer science for over 13 years and is currently based at an independent school in London; his full report into onscreen/online assessments is due for publication in autumn 2022

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GETTING STARTED

As we return to a new, post-pandemic 'normal', attention will again be turning to preparation for those all-important terminal examinations. When should students start their revision? After Christmas? At February half term? At Easter? Evidence suggests that the very best practice is to establish revision as ongoing preparation throughout a course, not just at the end. After all, that's how marathon runners prepare to run a race. It takes years and months of preparation, with gradual increases in distance and performance improvements over time. Similarly, we need to apply the same approach when preparing for school exams.

WHAT WE DID

As practising teachers, we recognised several problems our own students were experiencing as they were learning. It's common to go through the content of a course in a linear fashion. Not necessarily in the order of the specification, but certainly one topic at a time. More recently, it's been suggested that interleaving concepts, instead of blocking learning, might have a positive impact by frequently returning to previously taught material and building upon it.

This requires careful curation of the scheme of learning, as students can get lost in the journey if it doesn't match the specification and published textbooks. We found it frustrating that regardless of approach, students could sometimes forget the basics – the very foundations upon which their knowledge should develop. In computer science, for example, we might ask, *'What is the purpose of the memory address register?'* – only for students to forget this days and weeks later. We thought there must be a more effective way to retain knowledge over long periods of time.

HOW WE IMPROVED

Frequent, low stakes quizzing on all previously taught material was the answer. It's important to find time in busy lessons for knowledge recall, but that can be quite a challenge when you only have just enough time to cover the course content. This is where technology can provide a solution.

Many online quizzing tools will only create short quizzes of content from a single unit, but Smart Revise is different. It automatically interleaves and melds questions, in response to the teacher enabling topics as the course progresses. Crucially, it also creates a never-ending differentiated question playlist that is personalised for each student. Adapting over time with a focus on mastery, these question sets will change dynamically for each student in real-time as they engage with Smart Revise. Since the questions prioritise and cycle in an infinite loop, there is no fixed number of questions. Instead, students always have another question to answer, with teachers free to choose how long they wish to spend on the activity.

Did we mention?

We know that frequent low stakes quizzing isn't enough to ensure success. It solves the problem of retention, but doesn't prepare students for longer answer questions. Smart Revise therefore also includes hundreds of examination-style questions with a 'Smart Advance' mode, together with command word help and a unique guided marking interface for students, which encourages them to engage with mark schemes. Additionally, there's the 'Smart Terms' function, which facilitates the Leitner system with subject-specific terminology.

Contact:
Craig Sargent and Dave Hillyard, AKA Craig 'n' Dave
admin@craigndave.co.uk
smartrevise.craigndave.org

THE PLACE:
Stroud High School was an early adopter; Smart Revise has now been used by over 68,000 students.

THE CHALLENGE:
Tackling the 'forgetting curve' – a phenomenon whereby students forget what they have been taught over time, as investigated by Ebbinghaus in 1885 and later measured by Murre & Dros in 2015.

AI in the classroom

If your classroom doesn't already make use of artificial intelligence, it soon will, asserts **Graham Glass** – which is a development that teachers should welcome with open arms...

Not so long ago, most of us were only aware of artificial intelligence (AI) through its portrayal in films, TV shows and books. Yet within a relatively short space of time, we're now at a point where AI-based technologies are being used to enhance our workplaces, homes, communication tools and even how we fall in love.

However, some sectors – notably education – are playing relative catch-up, with just 18% of teachers currently incorporating AI into their classes (see bit.ly/T10-ai1). Teachers have the power to change this. They can ditch their outdated tools and print textbooks, encourage students to take a break from note-taking, and give themselves the space to tap into the great potential of AI to make classes even more exciting and fun.

Pupils will reap numerous benefits from the incorporation of AI technologies into their classrooms – not least a distinct set of knowledge and skills that AI can equip them with, which will help to prepare them for the heavily tech-reliant jobs market of tomorrow.

Classroom AI benefits

But what does this mean for teachers in practice? The first thing to note is that AI can be configured to act as a trusty assistant that's ready at all times to complete various dull and repetitive tasks, allowing educators to focus on what's really important – giving more attention to their students, while providing personalised learning journeys.

If your school already uses a learning platform to deliver lessons, congratulations – though it's always good to learn what such platforms are capable of now, and what they may be able to deliver in future.

If you currently lack any way of exploring the learning potential of AI within your setting, the points outlined below might be sufficient to convince you to take the leap.

> ***"AI can be configured to act as a trusty assistant that's ready at all times to complete various dull and repetitive tasks"***

Task automation

How good would it be to grade student work using an intelligent system? How about enrolling students in classes in minutes? Thanks to the magic of task automation, teachers can take their minds off comparatively mundane tasks – sending home reminders to students' families, for instance, assigning homework or grading tests.

Educators can also make their classes more engaging via the 'gamification' potential afforded by automation. The concept is simple. Whenever students take an important action, such as completing a given task or activity, they're awarded a mix of points and badges based on a rewards system that motivates them to continue learning and measure their progress in a fun way.

'Intelligent' AI-powered learning platforms can track student progress, and be made to show or hide specific lessons or assignments based on current levels of understanding. The concept of adaptive learning makes learning more personalised and assists students along the way by showing them what they need to learn, when they need it.

Personalized learning journeys

One of the biggest challenges associated with teaching in a traditional classroom is that educators often aren't able to readily identify the main strengths and weaknesses of individual students, making it harder to offer certain learners the individualised attention they surely need. Given the inherent difficulty of dividing students into multiple groups and teaching lessons based on their respective knowledge levels, all that's left is to largely follow a one-size-fits-all approach.

However, by incorporating AI in classrooms, teachers can easily identify problem areas, track student performance and ensure every student receives personalised recommendations based on their future career goals and aspirations.

Individual needs can be easily addressed in this regard, because of how intelligent learning platforms track learning goals. If, for example, a student wants to improve their music skills, they can select competencies that will teach them more about 'musical instruments,' 'how to read choral chores', and 'the greatest composers of all time'.

Once appropriately configured, the platform itself will be able to automatically recommend specific classes for that student to take, materials that would be useful for them to check out and study groups they might be able to enrol in. If you're thinking that parts of this sound similar to the experience of using Netflix – that's because it is.

Superior outreach

Classes that incorporate the use of AI technology can be made more inclusive and sensitive to the needs of pupils with SEND and other potential barriers to learning. Different learning preferences and speeds can be catered to via functions such as screen reader support and 'skip-to-content' shortcuts. Students will be able to progress through learning materials at their own pace and retake a class as often as they need to.

AI platforms are also often more inherently engaging and visually appealing, enabling pupils to find their way through lessons with the help of numerous visual aids and cues.

AI can also reduce the impact of missed lessons or teacher absence, since the technology allows students to check out class content using their phones and thus continue their learning. This doesn't mean students are guided by a machine, however; teachers maintain full control over what happens on a platform, and over every student's learning journey.

Better exam security

Whether you're teaching in person or utilising hybrid learning, data security remains a key concern among teachers and school leaders for the obvious reason that they're regularly called upon to deal with sensitive data relating to students, examinations, attendance and enrolments. AI effectively increases this security, as it safely keeps track of said data, avoiding the need for teachers to do so manually.

In other instances, there may be concerns that students might try to 'trick' the system into awarding higher scores in online exams. The presence of anti-plagiarism tools in AI-driven learning platforms helps teachers prevent the possibility of cheating taking place when students are called upon to complete online assignments.

Improved class content

As well as personalising students' learning journeys based on their prior knowledge and goals, AI also has the potential to also help educators zero in on competencies they need to master. For example, the system can analyse students' learning abilities, history, and level of understanding, before highlighting to teachers which particular lessons may need to be re-evaluated.

If most students are shown to have failed a certain geography quiz, or can't reach a threshold required to move to the next module, it could mean that the content of the relevant class is too difficult for them to process and therefore needs some tweaking – something that's otherwise often hard to ascertain.

Accept no substitutes

AI-based systems let schools create and oversee learning programs tailored to their students' needs and close any knowledge gaps well before they start to fall behind.

More broadly, AI as a technology shouldn't be seen as a worrying development that paves the way for teachers being replaced by machines at some point in the future. Rather, it should be seen as a form of supportive advancement that augments teachers' capacity to deliver personalised learning experiences, and help students reach their learning goals more easily.

By adopting AI-driven learning platforms and incorporating them into their schools' daily routines, teachers can save themselves time while simultaneously ensuring that their students can achieve better learning outcomes.

ABOUT THE AUTHOR

Graham Glass is a former computer science lecturer at the University of Texas at Dallas, now CEO at the e-learning platform provider Cypher Learning (@CypherLearning); further discussion of edtech and AI can be found in the articles available at the company's NEO Blog – see blog.neolms.com for more details

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A better blend

To provide blended learning, schools have typically had to juggle multiple software systems – but they'd be better off keeping it simple and opting for an integrated system instead, advises **Nadav Avni...**

Despite educators' best efforts, the transition from in-person to online and hybrid learning wasn't entirely hitch-free. The sudden onset of the coronavirus pandemic forced many schools into a position where they had to scramble in order to change their systems virtually overnight.

As a result, numerous schools found themselves rushing to purchase online education technology tools. It soon emerged that only a comparatively small proportion of schools had had the foresight to invest in reliable classroom management software at an earlier stage, so that what they needed was already in place.

Remote connections

After almost three years of switching between in-person and online teaching, hybrid learning has, for many, become bedded in as the 'new normal'. If, for whatever reason, students are unable to physically attend classes, they can now join their classmates via remote connections.

Of course, the practical applications of hybrid learning extend far beyond the immediate demands presented by the pandemic. Students needing to stay at home in order to look after a sick relative can still attend classes. Others may be too ill themselves to travel, but still able to actively participate in the day's lessons.

Then there's the way in which students lacking reliable access to private or public transportation, or having to to contend with adverse weather conditions, can still attend classes. With a hybrid option always available, students forced to stay away from school grounds can still show up and learn.

How teachers have adapted

Under a hybrid learning model, instructors will often try to replicate their teacher's desk virtually, if they can. This will typically entail converting printed instructional material, lesson plans, activity sheets and other lesson resources into electronic versions and somehow distributing them via online means.

The hybrid teaching schools had to provide during lockdown meant having to prepare revised course material in advance, in a far shorter timeframe than would usually have been the case – preparations that would have included deciding on how best to deliver the material so as to generate the most interest from students.

With the pressure to deliver hybrid teaching at scale now less than it was, and with teachers able to spend more time on their preparations, they will have come to appreciate just how much dexterity is required to deliver remote learning effectively. At a minimum, teachers must know how to operate at least three distinct software applications – video conferencing tools, learning management systems and classroom management software.

Managing the systems

Video conferencing software lets teachers connect to individual students via a series of video links, which can be combined to form a virtual classroom. These live lessons can be fully interactive, with students able to verbally interact and/or interject with typed comments, or configured for a more one-way, instructional approach.

Learning management systems (LMS) are used to store and manage the data needed by teachers for their daily lessons. An LMS will likely contain a school's instructional modules, including the term's curriculum and lesson plans, where applicable. It can also be used to archive students' learning materials, such as slides, presentations, activity pages, and quizzes, which teachers can distribute via file sharing protocols.

The third crucial component of blended learning delivery is classroom management software (CMS). This grants teachers an over-the-shoulder view of students' learning progress, which they can use to adjust the content and pacing of lessons. A CMS will additionally enable teachers to monitor whether the devices of individual students are displaying the intended content. If not, said devices can be commandeered and locked down to prevent the installation and running of unauthorised apps.

Are teachers handling hybrid learning better?

The COVID-19 emergency in schools may have receded somewhat, but the benefits provided by online learning solutions still very much apply.

Ongoing coronavirus infections aside, students can still be prevented from travelling to class for a host of different reasons, not least physical conditions that may result in them being immunocompromised. Hybrid learning systems enable students who would have been otherwise indisposed to learn alongside their classmates – some or all of whom may be attending school in person.

Even the most experienced teachers initially felt overwhelmed with the technological requirements of hybrid learning, but most have since learned to adapt by letting the technology work with them, instead of becoming yet another layer of workload.

That's why it's important for instructors to be given tools that actually help them manage a hybrid classroom. Instead of devoting time to making the software work, they ought to be given more scope to focus on instruction, coaching struggling students, resolving disputes and highlighting accomplishments.

"Students can still be prevented from travelling to class for a host of different reasons"

The decision as to which software you'll use to deliver your hybrid learning system is therefore a hugely important one. Teachers need all the help they can get to maintain control within the modern hybrid classroom, since juggling three separate software systems while tending to two distinct audiences can be overwhelming.

All-in-one

One great way of helping teachers cope with the demands of in-person, online or hybrid learning is to utilise purpose-built, all-in-one software. This will usually handle all three of the aforementioned core functions – except rather than switching between student interactions, learning management and classroom management, the software can be integrated into an existing whole school learning management system and get the data it needs from there, thus saving teachers time and effort.

As an added bonus, this will also reduce the likelihood of blended learning sessions grinding to a halt in the event of one component failing. A further advantage of lightening the technical demands involved in virtual learning is that it gives teachers more time to do what they do best – enlightening young minds.

Trusts and LAs that are heavily invested in online educational technology ought to consider the merits of software which is capable of working well in all learning scenarios – whether that be in-person, online or hybrid. There are plenty of reasons for schools to continue offering students access to hybrid learning. Regardless of their reasons for being unable to attend class in person, students should at least find it reassuring to know that options for continuing their education at a distance remain available to them.

ABOUT THE AUTHOR
Nadav Avni is chief marketing officer at Radix Technologies; for more information, visit radix-int.com or follow @radixtech

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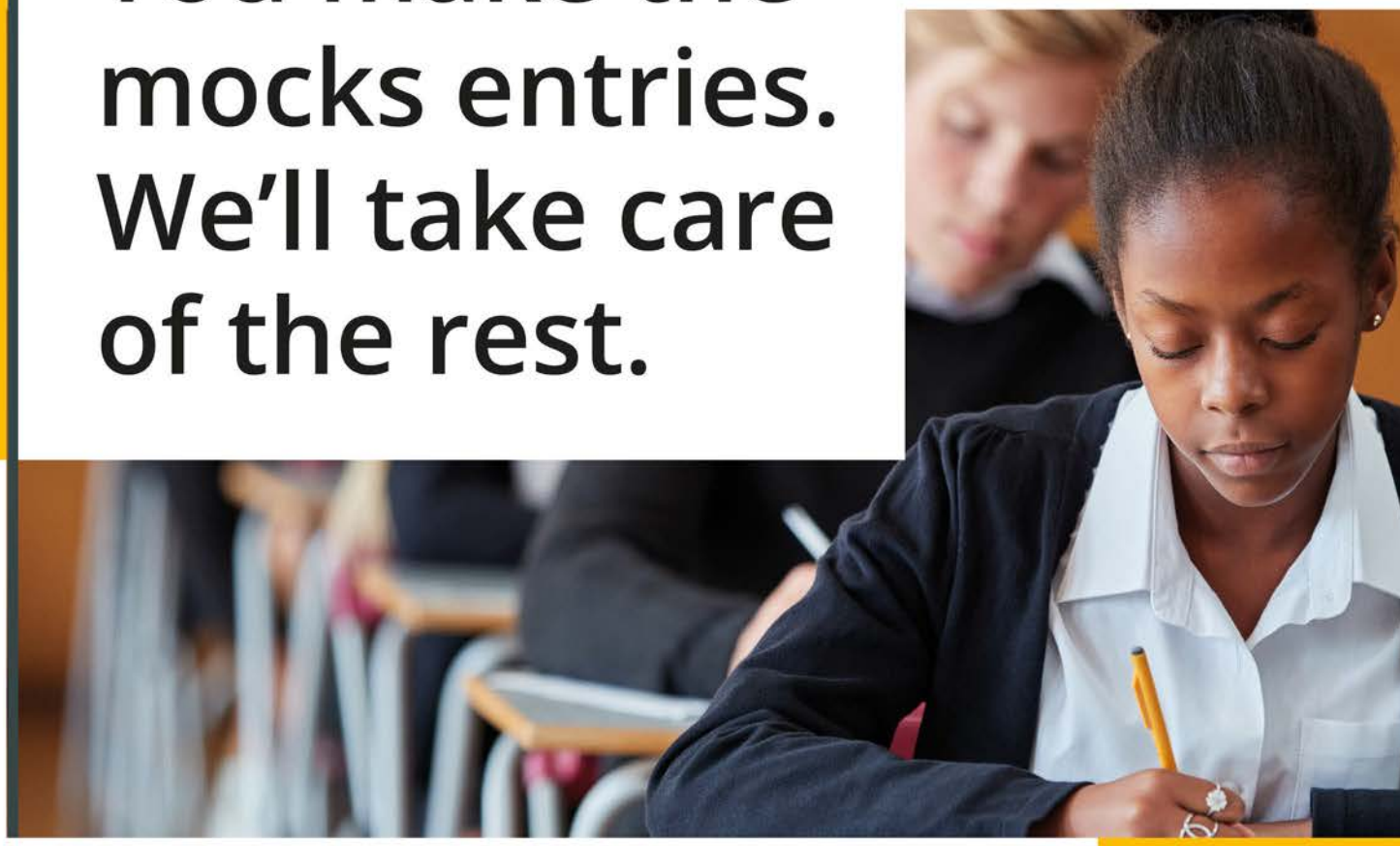

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Edtech must do more

Kim Rihal explains why current levels of edtech provision are doing disadvantaged learners a disservice...

Narrowing the attainment gap between disadvantaged groups and their peers remains a key challenge right across the education system. Edtech can do some of the necessary heavy lifting – it obviously played a massive role in supporting children's learning over the past two years – but it must do more if the needs of disadvantaged children are to be properly met.

Too often, edtech providers have over-promised and under-delivered in terms of the impact it's supposed to have. Yet I feel there's still plenty of cause for optimism.

The user's perspective

I recently took part in a roundtable hosted by the learning program company Tassomai, which gathered together some of the education world's leading thinkers and innovators to consider the role that edtech can and should play in tackling the issues presented by disadvantage among students.

Defining exactly who makes up these disadvantaged groups is vital if edtech is to effectively address their needs. Disadvantaged children are fundamentally hindered by circumstances beyond their control – perhaps for reasons related to having SEND or EAL. Whatever the case, it's important to recognise that 'disadvantaged' certainly doesn't mean that the pupils in question have less ability than their non-disadvantaged peers.

Edtech software offers huge potential for supporting and enabling effective learning for these groups, but we've seen some fervent discussion around how it should be designed and delivered so that all learners can benefit from it – especially the most disadvantaged.

I believe that placing a laser focus on the needs of disadvantaged learners should be a priority for all designers of edtech tools. Asking questions from the perspective of users at the beginning of a product's development process would help designers better address the needs of disadvantaged learners. By way of a starting point, designers should carefully consider how it feels to be that child when confronted with an unfamiliar piece of edtech for the first time.

Edtech design should take into account the needs of different disadvantaged groups, and avoid any barriers that might disproportionately impact upon the most disadvantaged pupils. Because after all, designing a solution that works for disadvantaged groups will also work for everyone else.

Small changes, big differences

At the roundtable we agreed that if the edtech industry was to step up and play a bigger, more effective role in supporting disadvantaged learners, then there were a number of small changes that could be implemented by developers and schools in order to make a big difference.

Firstly, efforts could be made to raise more awareness of the accessibility functions many edtech applications and software systems include as standard, such as audio transcription tools and fine control over contrast and colour settings for visually impaired users.

Schools could also be empowered to conduct robust evaluations of software, so that they can ensure their applications and systems are having the positive impacts they were originally promised. An 'edtech assessment' framework could cover areas relating to accessibility, engagement, usability, progress and learning value – though schools would need to be clear as to the benchmarks these evaluations are being measured against.

Edtech as mediator

Teachers could meawnhile host short audio/video explainers on their platforms to help foster student relationships and deliver explanations of specific learning points.

Schools could additionally look at building in a social layer that gives all learners a voice and boosts peer-to-peer support (albeit with effective safeguarding functions in place from the start).

Once an edtech service or solution is being actively used, statstics could be regularly published to help gauge average levels of engagement between different pupil groups and establish whether the attainment gap is indeed being narrowed.

Above all, we could make edtech a mediator within the teacher/student relationship, and less of a self-contained tool that sits outside of it.

ABOUT THE AUTHOR

Kim Rihal (@KimRihal) is co-founder and CEO of Equal Education – a social enterprise targeting global educational inequality. Kim's insights are part of a new report from Tassomai, 'Bridging the attainment gap: edtech and the struggle to level up', which can be downloaded via bit.ly/T10-KR1

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Built to scale, Radix TeacherView gives teachers the tools they need to host a seamless traditional physical classroom experience virtually, enabling to monitor not just students' cameras but also their desktops in real-time. Teachers can virtually 'walk' between students and engage in either one-to-one or group communications, while observing the class' attention levels and assisting students in real time using AI.

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- Complimentary training is available online four times a week or upon request

REVIEW

BY JOHN DABELL

Virtually all teachers won't have been trained to teach virtually – but this isn't just a training issue. The technology teachers have been using has massively contributed to their success or failure.

Corporate platforms aren't a good fit for education, which is why I'm completely sold on TeacherView from Radix. This is a sensational, cutting edge, cloud-based e-learning solution that transforms remote/hybrid learning by combining video conferencing and classroom management into a single user-friendly platform.

With 57 fabulous features, this trailblazer allows everyone to share a virtual space that's genuinely close to being a physical, in-person classroom environment experience.

Interactive, intelligent and inspirational, I love that this software is designed for truly collaborative learning and is able to manage all devices – freeing teachers up to easily monitor and assist their students in real-time.

This is next level stuff, and easily best of breed.

Key features:

- Share teacher or student screens and video camera feeds
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- Respond silently to electronic 'hand raises'
- View thumbnails of students' screens in real-time
- Work alongside students or remotely take control of screens
- Lock screens to maximize attention and minimise distractions
- Limit access by blacklisting and whitelisting websites
- Conduct surveys and quizzes

"How are they doing?"

Rob Eastment offers some advice on how to ensure your next online parents' evening goes without a hitch

Dad had just come off a long shift on an oil rig off the Norwegian coast, hundreds of miles from his family in Birmingham, but he was still able to make parents' evening.

Back in the era of dial-up internet, there would have been no way of enabling Dad to attend this important appointment – yet advances in technology have since made such practices seamless and almost routine. Even for those who happen to be situated in the middle of the North Sea...

Pragmatism and convenience

That story is just one of many vignettes regarding online parents' evenings that have been shared with me over the past few years – especially after the pandemic forced pretty much every school in the country to embrace the practicalities and potential they can offer.

As the coronavirus lockdowns recede into history, there has been some debate in parts of the media over the future of online parents' evenings. While some activists and commentators are calling for a wholesale return the old ways of meeting in person, I believe that parents and schools will be minded to take a more pragmatic approach. Because they know how convenient online meetings are for most of those concerned, and how, if done right, they just *work*.

What seems clear to me is that teachers find it easier to schedule meetings for online parents evenings, and that those meetings will often be more focused and more likely to run on time as a result.

For parents, of course, there's no need to rush back from work, before travelling a further distance through rush hour traffic to be at their child's school on time. Online parents' evenings don't make onerous demands on their already pressurised lives.

Reviewing your whole approach

Deciding that online should provide the long-term model for your parents' evenings, rather than simply serving as a stop-gap, requires more than ensuring that the tech works well. It should also be an opportunity to review your whole approach to parents' evenings.

Schools and parents both want what's the best for every child. Parents' evenings have always provided a chance for teachers to show that they're open, approachable and supportive. Increasingly, teachers now need to accentuate the positive, celebrate achievements and highlight the crucial importance of home-school partnerships.

Parents' meetings should focus on the future, and avoid wasting limited time by simply covering old ground – the details of which can be presented to parents before the meeting takes place. Reviewing a student's progress against targets and teacher feedback shouldn't be a static, once or twice a year event, but rather communicated throughout the year. With that in mind, it's best to focus the meeting on how to take things forward.

When pursuing an online-only approach to parents' meetings, the updates parents receive ahead of meetings assume greater importance. Parents who receive regular updates throughout the year will bring with them a different set of expectations – and indeed questions – to parents' evenings. Parents who are sufficiently well-informed can form more balanced, long-term pictures of their child's progress. They're less likely to be surprised by unexpected information, and more open to discussing difficult topics, such as behaviour issues.

This will, in turn, make for calmer meetings with greater purpose and less potential for conflict. It's a fairer and less stressful approach to home-school partnerships for all concerned – teachers, parents and students.

DOWNLOAD

a free guide to planning, effectively managing and delivering your next virtual parents' evening via

bit.ly/T10-ope

Three-phase planning

The key to making all this work is to prepare for online parents' evenings well in advance. Assemble a small 'Parents' evening support team' and task them with co-ordinating all aspects of your virtual parents' evenings – from the event's scheduling and promotion, through to the co-ordination of targeted communications, monitoring of registration levels and sending out of reminders to parents who don't respond.

This support team should also be able to help teachers make effective use of the booking platform you're using, and assist with the delivery of basic platform training, if required. The team could also collect feedback at the end of the parents' evening series, and ensure that any potential improvements are made in time for future events.

When planning the evening itself, it's a good idea to adopt the following 'three-phase' approach:

BEFORE

1 Target your messaging, invites and reminders. Make sure parents know the date, and when and how to book well beforehand. Send reminders as the event draws nearer.

2 Issue your protocols and guidelines for parents. For example, recommending that they ideally log in five minutes before each meeting to make sure their connection works.

3 Use an automated scheduler platform. Some purpose-built parents' evening platforms allow teachers to customise their availability, providing parents with a more accessible, 'on demand' system. This can make parents' evenings much more flexible, and avoid the scheduling challenges that can arise when all teachers in a given year group participate in the same evening.

4 Choose the right platform. Zoom, Teams, and Google Meet are all highly regarded video meeting tools, but require schools to set up each video meeting individually, which can be time-consuming. Purpose-built parents' evening platforms can create such video meetings automatically, thus saving time.

"Parents' meetings should focus on the future and avoid wasting time by covering old ground"

5 Integrate a purpose-built parents' evening platform. Importing the school's MIS database, curriculum and other records will make the setting up of your next parents' evening much faster.

6 Provide parents with continuous visibility of grades and results throughout the year. This will ensure the parents' evening meetings can focus more on immediate concerns and the future, with data kept in the background and mostly used to inform target-setting.

DURING

1 Provide teachers with troubleshooting instructions.

2 Share tips on audio considerations and visual background. For instance, echo can be reduced by having teachers and parents both use headphones during the meeting. Make sure your face is illuminated, and avoid placing bright lights and windows directly behind you.

3 Be mindful of body language, and be conscious of what viewers will be seeing on their screens.

4 Be ready to pick up on one or more topics or issues after the parents' evening has concluded.

AFTER

1 Seek feedback. Ask parents and staff alike to tell you what went well and suggest what could be improved by sending out feedback questionnaires.

2 Don't stop at parents' evenings. Keep parents up to date throughout the year via continuous reporting, and plan your parents' evenings as part of a wider interaction strategy with parents. This could potentially include a range of complementary channels, such as emails, newsletters and occasional direct meetings.

It seems unlikely at this stage that traditional face to face parents' evenings will make a full comeback. My guess is that schools and parents will continue to value the online approach for years to come, so it makes sense to invest time and thought into making such approaches as coherent and as slick as possible.

ABOUT THE AUTHOR
Rob Eastment is a former assistant headteacher and head of ICT, now head of learning at the school engagement platform, Firefly; for more information, visit fireflylearning.com or follow @fireflyteam

5 steps to better digital learning

Emma Darcy and **Les Hopper** outline the five steps that are essential if you want to create a digital offering which works for pupils, staff and schools as a whole

If nothing else, the past two years have shown that many schools are ready to embrace innovation when it comes to developing their students' digital life skills.

The first national lockdown of March 2020 prompted the education community to evolve at an unprecedented pace, as staff and students were rapidly upskilled in working remotely. Today, learning companies such as Pearson, and schools across the country like Denbigh High, continue to build on that transformation.

What have we learned from this shared learning experience, and how can we keep evolving in a way that maintains the best elements of those remote lessons for our students?

1 Set aside time for reflection

Following the last national COVID-19 lockdown, many schools – Denbigh High School included – entered a period of self-reflection, assessing what worked well and less well within the systems they were using, and evaluating the subsequent impact on teaching and learning, student wellbeing and staff workload.

For Pearson, this is what's driving the evolution and continual improvement of our digital services. Our guiding principle is that we harness technology in education not because we must or can, but because it's the right tool to maximise teaching, learning and assessment.

Data-driven insights enable schools to identify exactly how students are taking on new information, while helping to address learning gaps and identify broader learning trends. The more digital platforms are used, the clearer the picture they can build of a school's community, and the more targeted support your learners will receive.

When planning your school's ongoing engagement with digital learning, it's important to give staff and student voice due consideration. Consider engaging user groups in digital surveys, for example, as well as organising face-to-face meetings.

Denbigh High School's weekly 'Friday Forums' for students have become excellent opportunities for learners to feed back about their experiences, and have had a direct impact on the strategic direction of technology usage at the school. Technology use is also a regular agenda item at leadership team and governor meetings.

2 Tap into the big picture

People's views concerning edtech – including its current role and perceived future – and the role of the National Curriculum were sought out by Pearson for its 2022 School Report. A key finding identified this year was that 52% of teachers believe a better 'digital curriculum' is needed to adequately prepare learners for an online world.

In the same research, around 80% of teachers stated that digital wellbeing or digital literacy should be incorporated into the curriculum over the next five to ten years. Nearly half felt that reading and writing for digital media ought be incorporated, while 32% thought the same could be said for teaching around digital communities and networks.

3 Prioritise wellbeing

These findings paint a picture of an education community which clearly recognises that students are experiencing new environments, new ways of working and assorted mental health challenges as a direct result of our ever-changing digital landscape. We should all acknowledge this, with a view to effecting positive, long-term impacts upon the whole pupil – not just their academic achievements.

At a school level, student and staff wellbeing remains an absolute priority in the provision of edtech. At Denbigh High, staff continually seek to identify ways in which technology can improve communication and understanding (especially for SEND and EAL students), and act as quickly as possible to remove any barriers to this happening.

"Mobile devices provide a powerful means by which schools can offer flexible learning environments"

4 Find the gaps and fill them

Following pupils' return to the classroom, school networks and infrastructures have had to be redeveloped to meet demand. Leadership teams have needed to refine the technology they use for their learning strategies in line with increased demand for access via mobile devices and technology-assisted CPD. What works well online doesn't always work in classrooms, however, making it essential to adapt pedagogy accordingly.

Mobile devices and digital access are now critical considerations when deciding on how students can be best supported. While many schools still require fixed ICT suites to support elements of the curriculum, the vast majority of technology used for learning is now delivered through mobile devices.

Given that many schools operate out of buildings never designed with digital innovation and infrastructures in mind, mobile devices provide a powerful means by which schools can offer flexible learning environments – regardless of their classrooms' physical limitations. This provision can also be a huge help for students from disadvantaged backgrounds, who may not have personal access to laptops or tablet devices at home.

Over half of the respondents to Pearson's 2021 #digitalclassroomsurvey recognised the existence of a digital divide in their schools, with social isolation and lack of motivation presenting major challenges to some students' ability to learn online. The learning company is now striving to create ever more inclusive programmes that will work on any screen, anytime, anywhere.

5 Reassess your assessments

At Denbigh, staff firmly believe in distinguishing trends from the transformational. With that in mind, the movement we've seen towards onscreen assessments and marking seems to be genuinely transforming examinations on a national scale.

Pearson's recent Spotlight on Onscreen Assessment report (see bit.ly/T10-pearson1) found that 65% of teachers would be interested in adopting onscreen assessments within the next four years, while 77% would like to see more technology being used in teaching and exams. The demand is high, as is the need for further CPD in these areas, with 95% agreeing they need more training in technology for teaching and assessment.

As well as delivering the first onscreen exams for Pearson Edexcel GCSE (9–1) Computer Science this summer, Pearson delivered 4,000 mock exams completely onscreen last year via its Mocks Service, which saw exams taken online and results delivered electronically. The support this could offer in enhancing teaching, learning and assessment around the country is immense. To fully realise the potential of onscreen assessment for GCSEs and A-Level, we'll need to continue collaborating, sector-wide.

As we all know, technology never stands still. That's why it's so important that schools continue to utilise what one Denbigh High School staff member describes as 'measured innovation' – a process whereby we move forward collectively through reflection, adaptation and development.

Ultimately, collaboration is what will shape the future of education technology in the most positive and inclusive ways. Your voice matters. Learners' voices matter. With schools and learning companies working together, and hearing each other, we can take big strides for the benefit of every student – and those who support them.

NO-COST STARTERS

Emma Darcy outlines three initiatives via which schools can commence their edtech journey for no upfront cost

• Take time to research
Not everything has to move at lightning speed. Take time to research different schemes, pilot new ideas and share outcomes with all stakeholders, including parents. This will help greatly if and when you decide to roll out a scheme more widely.

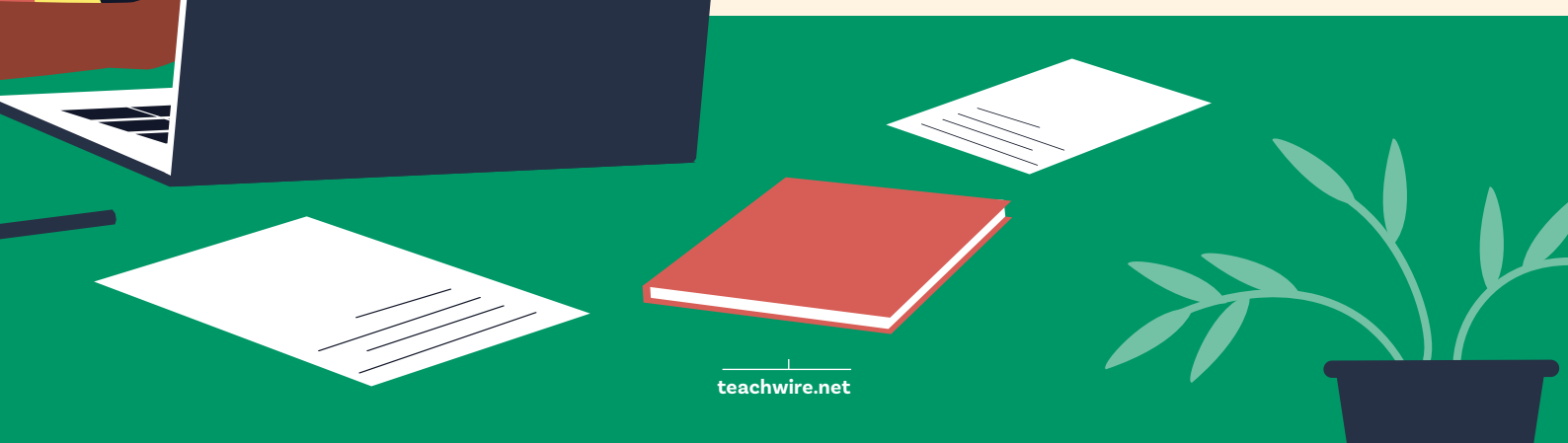
• Appoint student digital leaders
Trained student digital leaders can assist and support teachers, as well as other students. The impact will be felt school-wide, and demonstrate that you're taking digital strategy seriously.

• Create a school vision
It costs nothing to have a vision, but in creating one you can become more outward facing, learn from others and set targets concerning where you'd like to be five years from now.

ABOUT THE AUTHORS
Emma Darcy is director of technology for learning at Denbigh High School in Luton and the Chiltern Learning Trust

Les Hopper is director of digital and assessment at Pearson School Qualifications

Find out more about the work Pearson is doing to support schools with the process of digital transformation by visiting go.pearson.com/DigInnovation



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ASK THE EXPERT

Centralise your MAT broadband services

Louisa Mason describes her journey with Schools Broadband as they centralised their 16-school trust's broadband, filtering and security service

Why was it necessary to centralise broadband services across your trust?

The primary reason for centralising services is to reduce the time and resource involved in procuring good value, high quality services across multiple schools. Having a single managed service provider for our broadband means we remove unnecessary procurement pain from our individual schools. This leads to increased efficiencies and improved service all round.

We also know that when all our schools are connected, each one of them will meet our cyber security standards and comply with DfE safeguarding standards.

How did you choose your broadband provider?

We knew we needed a specialist provider, like Schools Broadband, with experience in working with MATs. They understand the various safeguarding, web filtering and cybersecurity requirements within schools.

Our chosen provider additionally needed to be OJEU-compliant. Schools Broadband is listed on The Yorkshire Purchasing Organisation (YPO) OJEU compliance framework, which made accessing their service much easier. We carried out a Direct Award through YPO.

What advice would you give to other MATs planning to centralise their broadband services?

Collating technical information about existing broadband services from 16 different schools was very challenging. Don't assume your schools necessarily know what type of broadband connection they have.

If you're a medium to large trust planning on centralising your broadband services, you will likely have multiple schools in multiple counties with multiple providers. I would say you would probably need a project owner with admin support to manage this. Smaller trusts will be less complex.

EXPERT PROFILE

NAME:
Louisa Mason

JOB TITLE:
Chief Operating Officer, The Good Shepherd Trust

CUSTOMER OF:
Schools Broadband

AREA OF EXPERTISE:
Using technology to deliver central services across multiple trust schools

What lessons did you learn?

The Good Shepherd Trust is upgrading all its schools to leased lines, and we underestimated the additional timescales because of this. These installs are dependent on both your broadband provider and wholesale contractor, but be warned – councils won't let wholesale contractors operate at the same time as other contractors in the area, so roll-out can take longer.

Schools Broadband did everything possible to expedite the build and put contingency connections in to cover the delay. My advice would be to start the install process at least six months in advance of services going live.

What qualities should you look for in a specialist MAT broadband provider?

One experienced in working with MATs, and which understands safeguarding context around broadband. Choose a provider who will speak your language. Schools Broadband placed great emphasis on speaking ours, so make sure your provider is similarly accessible. We continue to have monthly meetings with Schools Broadband, and I know I can call them any time. Schools Broadband's customer service level and quality of service are both excellent, which counts for a lot.

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EQUAL ACCESS

Glen Harrington surveys the different ways in which technology has helped ensure that modern classrooms are inclusive spaces for all learners

Back in June, a government-commissioned report into the future of edtech in English schools (see bit.ly/T10-ICT1) highlighted the need for a 'reboot' of how equality and inclusion is handled throughout the system.

Not all of the concerns raised in the report were necessarily applicable to the entire education system, but there was enough contained in its findings to suggest that there's considerable room for improvement. And with that, of course, comes an opportunity to change direction, remodel and improve the teaching experience – especially for SEND students.

For a number of years, enhanced funding has been one of the main drivers behind these inclusivity efforts, alongside the adoption of improved pupil integration strategies at a growing number of schools. Here, I want to explore some of the historic changes that have occurred, and look at how further advances in technology might be able to help us accommodate further positive changes in the near future.

Just like the use of technology, inclusivity *per se* hasn't always been a standard expectation within school classrooms – both took time to be introduced, gradually adopted and eventually considered indispensible.

> ***"Schools using integrated technology to support their knowledge and skills development see better outcomes across the board"***

A better kind of inclusion

As innovation within the edtech space has continued to pick up speed – due in no small part to the pandemic – the practices pursued by teachers have similarly had to evolve. The ways in which many teachers now deliver learning and connect with their students are very different compared to just a few years ago – as indeed are teachers' options when it comes to making learning spaces more inclusive and accessible for all students.

We can trace some of the earliest such improvements to around the late 1970s, when a key challenge of the time was the assertion made in the 1978 Warnock Report (see bit.ly/T10-ICT2) that, "Inclusion is about much more than the type of school that children attend: it is about the quality of their experience; how they are helped to learn, achieve, and participate fully in the life of the school."

A wave of technological advances followed soon after. From the use of basic overhead projectors, to the subsequent availability of school internet connections and innovations such as IWBs in classrooms, edtech has continued to evolve – often in parallel to the development of new ideas concerning inclusion.

There's perhaps no better example of how far we've come with respect to technology and inclusion than the education system's rapid transformation during the COVID pandemic to support remote learning and teaching.

Across the globe, millions of students were – and largely still are – able to access fully digital learning environments, allowing for whole new forms of connectivity between students and teachers. Systems were devised to not only place devices and learning content in the hands of students and families, but also identify creative ways of ensuring they had access to the information and connectivity they needed to maximise their utility. While the pandemic undeniably highlighted many gaps in learning provision, it also showcased the profession's ingenuity and resilience when it came to filling them.

The cost of not evolving

We've reached the point where a curious student,

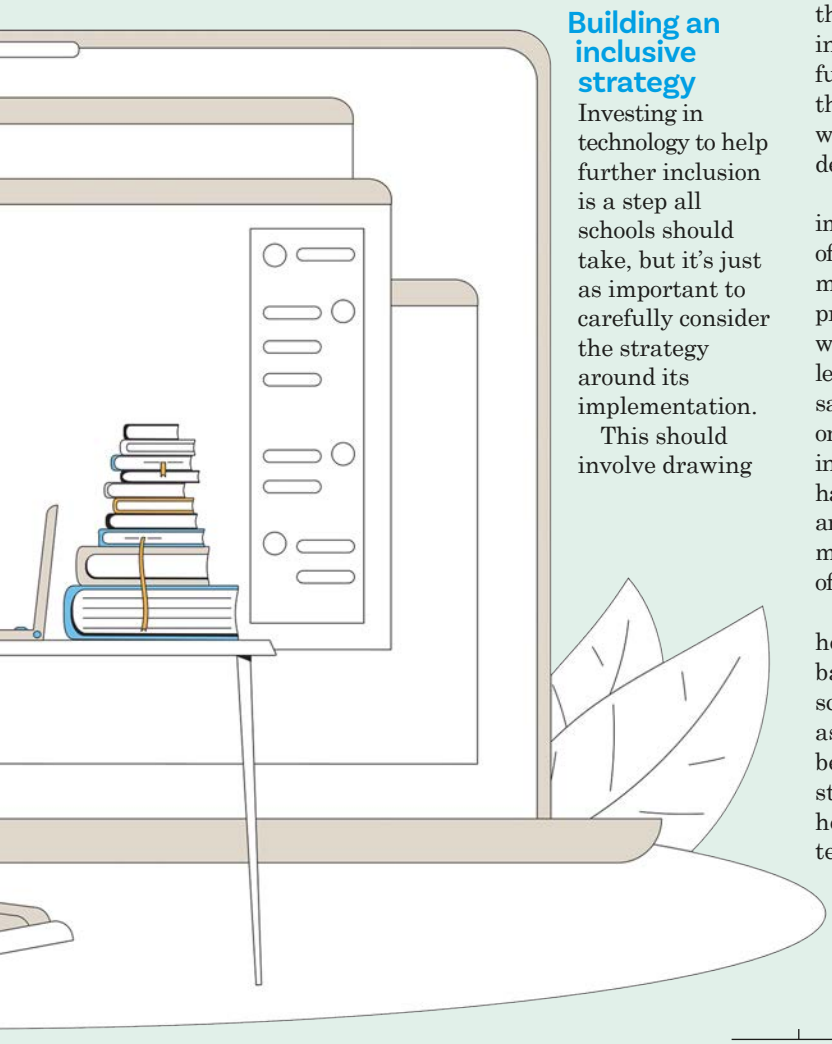
irrespective of ability, can answer almost any question in just a few clicks. This has prompted a shift in emphasis from classrooms as being simply places where knowledge is acquired, to becoming places where the skills needed to usefully engage with and process that knowledge are honed.

At the same time, the adoption of technology within classrooms has led to some speculation over the costs involved. At a time when the costs of living and general inflation are creeping ever higher, the question has naturally been raised as to whether schools can afford to invest in what are often expensive learning technologies.

The reality is that schools which are using integrated technology to support their knowledge and skills development see better outcomes across the board – even in measures such as teacher retention, Ofsted ratings and pupil attendance.

Recent data from the Audit Commission (see bit.ly/T10-ICT3) suggests that nearly one in five children in England and Wales have SEND. That includes not just students with serious physical or learning difficulties, but also many others whose reading, writing and numeracy skills develop at a slower rate compared to their peers.

The past few years have vividly shown how educational technology can help teachers accommodate students' needs where previously they may have struggled to – from providing audio description for visually impaired students, to presenting students with innovative ways of sharing their own voices with others or granting students greater autonomy via assistive technology.



Building an inclusive strategy

Investing in technology to help further inclusion is a step all schools should take, but it's just as important to carefully consider the strategy around its implementation.

This should involve drawing up a comprehensive timeline for training on new devices, software and technology – for teachers, as well as students. Educators have to feel comfortable and confident when using edtech, so that they can develop a greater understanding of what it can do and impart this to their students. Remember to also include parents and carers in this training, since they're essential cogs in your students' support systems.

Implementation can often present barriers to the adoption of edtech, in part due to difficulties in carrying out the necessary planning and professional development. When schools opt for technology solutions that are more affordable, but harder to install and run, any potential savings will soon become costs that could have easily been avoided. As such, schools should take care to ensure that any technology investments they make are fully considered, and entail the trying and testing of whichever devices they decide to adopt.

The continuing improvement and refinment of edtech solutions is making it ever easier to provide support for students with mild to even severe learning difficulties. At the same time, however, the ongoing cost of living and inflation crisis is making it harder for schools to budget and plan for how they might be able to make use of such solutions.

These current, and hopefully temporary barriers mustn't deter schools and teachers from aspiring to provide the best teaching for all students. Only with the help of appropriate technology can educators be confident that they're providing the support that pupils with SEND ultimately deserve.

THREE STEPS TO BETTER INCLUSION

1. Do your research
There will be a time for discussing costs and finances, but surveying your staff and students is a great initial step when identifying what those areas for improvement might be, and developing an action plan for evolving your school's edtech environment.

2. Don't compromise your edtech inclusion policy
Inclusion isn't something schools can do in a half-hearted way. Be sure to take into account any and all forms of learning difficulty (be they audio or visual, related to ADHD, etc.). Keep in mind that this is work that will benefit *all* students, because when we accommodate for those with the greatest need, we're ultimately assisting everyone.

3. Begin training staff – and don't stop
The key to making an edtech inclusion strategy successful is consistent training from the outset and throughout, aimed at both students and teachers. You'll eventually want to ensure that students with SEND can use the new technology to accomplish tasks while working at their own pace, and simultaneously set benchmarks so that teachers see where students are, and tangibly measure their progress over time.

ABOUT THE AUTHOR
Glen Harrington is an edtech software professional with experience of working within SEND settings alongside a range of students with complex and additional needs

Accessibility unboxed

The standard operating systems and apps used in schools often include a wealth of accessibility features that teachers and students are scarcely aware of, but could do with knowing about, observes **John Galloway...**

In recent years. the major technology companies have significantly upped their game when it comes to providing features and functions for individuals with additional needs, generally known as assistive technology (AT).

However, having spent millions developing them, they don't seem to have put much money aside to actually publicise what they've been up to. You can find out what Microsoft, Apple and Google now offer via extensive information areas at their respective websites, but you could be forgiven for having missed what they have to say.

Benefits to all

Working with technology offers benefits to all learners, but even more so to those with SEND. As well as offering the capacity for personalisation – by allowing the adjustment of, for example, fonts, point size, colour contrasts and cursor qualities – it can also facilitate independent working, provide support for text creation and correction and allow for provisionality. The latter refers to the capacity for change and revision, which in a learning context, will involve the creation and revising of works until a final version is reached that fully reflects what a learner can achieve.

This ability to develop a piece of work one step at at time enables a supportive, structured approach that would be nearly impossible without a machine. When writing an essay, for instance, a learner might begin with planning – perhaps using mind-mapping software such as Inspiration (inspiration-at.com), Mindview (matchware.com) or Claro Writing Helper (clarosoftware.com) to create a structure for the work.

The next step is transcription – namely the act of getting words down. At this point it may be worth actually turning off features such as 'as you type' spelling and grammar checks, so that students aren't distracted by the on-screen presence of various red and green wavy lines.

Once the words are on the page they can move onto editing, ensuring their work says what they mean it to say, and attending to the technical aspects of grammar and spelling. For many learners this will be best done on a printout, since errors are easier to overlook onscreen.

Finally, there's the publication stage where the output is made fit for presentation. This might entail focusing only on rudimentary aspects, such as line spacing and justification, or engaging in more elaborate design processes, like adding images and borders.

Step by step

In contrast, with handwritten work students will need to remember what they want to say, how to spell it and where the punctuation goes, while simultaneously keeping everything neat, with well-formed letters and appropriate spacing. This will result in a document that's difficult to correct if you've missed out something important, short of rewriting it all (though this applies to everyone, not just those with SEND).

"These tools won't make much difference unless users know that they're there, and how to use them"

When using a computer, however, there are widely available tools to assist with every stage of this process, which are often already part of the operating system, browser or application being used.

When planning, we can provide a writing frame to help guide students in the form of a document template. For transcription, there are capable speech-to-text functions built into iPads, editions of Word and the Google Workspace for Education suite, plus predictive text input features in Windows 10 and other operating systems.

When editing, students will frequently refer to a built-in spelling and grammar checker, but could also benefit from using text-to-speech features to listen back to what they've written. This is especially useful for sense-checking and spotting any omissions, neatly circumventing the kind of error we've all made where we read text on a screen and mentally insert into it what we mean to say – regardless of whether it's there or not.

During our final publishing stage, we can look to particular fonts and colour schemes in order to make a document more readable, or add 'tool tip' descriptors to images so that visually impaired students can access them

It's not just in the creation of work that technology can provide a readily available helping hand – it can support students with their reading, too. Apple's macOS and iOS operating systems include a 'speak selection' option that appears whenever text is highlighted. Microsoft's Edge browser includes a

'read aloud' feature that works in a similar way. There's also an option in PowerPoint to add automatic subtitling to presentations, and an 'immersive reader' viewing mode in Word that strips out all on-screen distractions (toolbars, menus, buttons, etc.) and presents on-screen text in a plain and simple manner.

Users of Microsoft 365 Education for Schools can additionally access features that include highlighting portions of speech, breaking words down into homophones and displaying a letterbox reading guide. As well as being helpful for learners with literacy challenges, they can also be put to use as teaching tools, enabling teachers to analyse texts and focus on key elements while delivering to the whole class.

Taking a shortcut

And yet, useful though these tools are, they won't make much difference unless users actually *know that they're there* and crucially, *know how to use them*.

The first issue can be addressed with a little self-reflection. How do we, as adults, use technology? Which features and functions make our own lives easier? Perhaps it's the ability to have text messages spoken out loud to us as we drive, dictate chat replies as we walk, or use our voices to conduct searches. Some of us will change the colour temperature of our phone screens when using them at night, or have previously used a phone to translate the menu in a foreign restaurant.

By being conscious of how technology has previously helped us, we can become more attuned to the ways in which hardware and software can improve the learning experience for our students.

The next challenge is to help those learners use said tools effectively by showing and teaching them how. This needn't be too fiddly to do, since many accessibility functions can be activated via keyboard shortcuts rather than having to go through a device's settings. For example, the 'high contrast' display in Windows can be switched on at any time via the key combination Alt+Left Shift+PrtScr. Dictations can be started with 'Windows Key'+H. Teaching students how to use these shortcuts provides autonomy, and equates to one less task for the adults in the room.

Embrace the possibilities

Knowing how to use technology effectively both increases independence and aids productivity. We know full well how electronic devices allow for limitless editing and refinement of what we want to express, and so do our students.

Since 2015, the JCQ exam regulations have allowed laptops to be used in exams by students for whom laptops are integral to their usual way of working (albeit with some caveats around internet connections and writing aids). This may have previously only been the case for some students with SEND, but since the pandemic it's become much more common.

If learners more broadly can be taught how to use devices effectively in ways that ultimately improve their productivity, then there may be a strong case to be made for seeing more of them in exam rooms. That aside, just having the opportunity to edit and revise their responses to exam questions will only deliver better results and exam outcomes.

From voice recording to image and video capture, not to mention instant access to online blogging and broadcast platforms, modern devices afford students ample ways of getting creative and showing what they know.

All we need is an increased awareness of the possibilities, and the willingness to give our learners the skills and opportunities to act on them.

MASTERS OF ONE

The accessibility functions already included in operating systems are certainly handy, but it remains the case that students with SEND can be better served by dedicated software, where viable.

Helperbird
helperbird.com
A browser extension that includes a screen reader and predictive text, and will open Microsoft's Immersive Reader when prompted. A paid-for 'pro' version adds even more features.

ReadandWrite by Texthelp
texthelp.com
Available as a browser extension or dedicated application, this literacy support tool can read text out loud, define unfamiliar words and even proof written work, making it useful for all learners.

Dragon by Nuance Communications
nuance.com/dragon
For all the improvements made to built-in dictation systems, this long-established speech software offers a wealth of additional functionality, such as the ability to listen to your own dictation, and automatically generate written transcriptions from recordings.

DocsPlus by Crick Software (www.cricksoft.com)
Provides a range of literacy tools, including text to speech, predictive text and word banks, making it a useful application for opening up access to exams taken in formal settings.

ABOUT THE AUTHOR
John Galloway is a freelance writer, consultant and trainer specialising in educational technology and SEND

4 REASONS TO TRY... EasyReader App

Every SENCo's secret weapon! Try the free EasyReader App from Dolphin today, and make your classroom more inclusive...

1 ACCESSIBLE READING

EasyReader App is a free reading app that enables children to read on any device. Read with enlarged text, audio or a combination of both – with words highlighted as the speech reads them aloud. Neurodiverse readers also benefit from dyslexia-friendly fonts and customisable colour schemes.

2 FREE ACCESSIBLE BOOKS

EasyReader App works in partnership with RNIB Bookshare to provide UK students with free books in accessible formats – including textbooks currently on the UK curriculum. Every book is free to download and read in EasyReader App.

3 DYSLEXIA-FRIENDLY

Children with dyslexia or other print impairments can read their own way using EasyReader App. Adjust letter spacing and choose dyslexia-friendly colours and fonts. Read with word highlights, synchronised with audio. Teachers have found that comprehension of text improves, and that students with dyslexia enjoy reading in class and at home.

4 FOR VISUAL IMPAIRMENT

Children with visual impairments are empowered to read independently. Each child can customise their reading experience in EasyReader App by adjusting and magnifying text, changing colour schemes, synchronising text with audio, reading with speech or connecting to a braille reader.

Contact:
Learn more about EasyReader and other Dolphin products at YourDolphin.com/Education

At a glance

+ Empowers students with dyslexia or visual impairments to read independently

+ Provides access to over 900,000 books in the RNIB Bookshare Education Collection

+ Free to use in class and at home – on smartphones, tablets and laptops.

4 REASONS TO TRY... Edulink One

Management and engagement software with a host of solutions for engaging teachers, learners and parents

1 IT'S ALL-INCLUSIVE

Edulink One's portal provides all the functions a school needs, including registers, mark sheets, messaging, data collection, parents' evenings and more, avoiding the need for separate expensive software purchases. It integrates with SIMS, creating a user-friendly experience on any device, and can be easily customised according to a school's needs.

2 MONITOR YOUR REGISTERS

The combined seating plan and register feature is a favourite amongst schools. Teachers can create their own easy-to-read table layouts (pictured) and 'drop' learners into these, adding learner tags and assessment data where needed. The registers can also be used for more than just attendance, featuring the ability to add tags, meal options, behaviour and achievement points, and even homework assignments!

3 MANAGE YOUR HOMEWORK

Set up and submit assignments via the portal's homework area, and use the notifications function to ensure students receive automatic deadline reminders. It also integrates with Google Classroom and Microsoft Teams, pulling through homework assignment details and status, enabling parents, students and staff to see them in Edulink One. Department heads can also view homework set by staff.

4 MANAGE CLUBS

Use the app to manage club activities and access your registers on the go. Parents and learners can sign up to clubs themselves in the app, or teachers can assign students to them. A club attendance report in the Analytics section helps track club impact, which can be useful for reporting Pupil Premium spending.

edulinkone

Contact:
For more information and resources, visit overnetdata.com; new customers can contact our sales team at sales@overnetdata.com

At a glance

+ Edulink One is designed and supported by former school staff; they understand what schools want

+ They value and listen to customers, refining features based on schools' suggestions

+ Edulink One is affordable – you can replace multiple systems with one that does it all!

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* Minimum term applies. Excludes VAT at 20%.

TECH IN ACTION

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MOVING ON UP

Bronnie Williams considers whether COVID-19 has made primary to secondary transitions harder, and how technology may have a role to play in ensuring they go more smoothly

Do you remember how you felt on your first day at secondary school?

The transition from primary to secondary education is among the most stressful events in a young person's life, and one that was only heightened by the pandemic. Thanks to continuing record levels of pupil absence related to coronavirus, many pupils still aren't used to being physically around others, and feel anxious about any changes to their environment.

As a trust, we offered full days of live virtual lessons during the pandemic. Even after schools reopened we still offered the option of signing into classroom lessons virtually, in case of students needing to self-isolate.

Our students were able to take Microsoft Surface devices home with them from school, so that they could continue to access lessons and complete assignments. This use of technology ensured they were still able to make good progress and maintain regular contact with their teachers and peers.

Yet when the time came for some of our students to transition to secondary school, we found ourselves having to think as innovatively as we could about how the process could be eased for them, given the technology available to us.

Substantial preparations

Perhaps more than at any other time in recent history, students may now require substantial preparation, planning, adjustment and support to help them thrive as they embark upon secondary school.

In my experience, most primary and secondary schools will have some form of transition program in place but strategies differ, with many schools not taking advantage of the extra support that technological solutions can deliver.

Educational platforms, such as ClickView, offer access to a wide range of learning videos for teachers, including 'Transition to Secondary' which features advice on how schools can ease students' moves to secondary school education.

> ***"We organised a virtual walking tour around the secondary campus, which helped students feel more at ease"***

Teachers and school leaders will be broadly familiar with the aspects of transition students typically need most help with, but it's still worth considering them closely, and checking whether the support you offer could be adjusted or improved in a number of areas.

A sense of belonging

Most of our Y6 students typically move on to a local secondary in the same village. It receives each child's end of KS2 SATs results, so our focus will tend to concentrate on the more holistic aspects of every child – chiefly who they are, and how their learning opportunities might be optimised.

Before the pandemic, we would organise regular opportunities for primary students to visit the aforementioned secondary school, where they were able to meet teachers and engage with students, thus helping them to feel a sense of belonging well before their first day. Staff from the secondary school would also visit our primary schools to meet the students in their own environment.

While we still offer these opportunities, the circumstances of pandemic meant that we had to make these experiences virtual ones. We did this by hosting Microsoft Teams meetings, where students would be introduced to their new secondary teachers. This ensured that pupils were able to meet the people who would soon be teaching them, irrespective of whether they happened to be learning in school or at home that day, and helped familiarise newer teaching staff with a platform that students were used to and felt safe using.

We also organised a virtual walking tour around the secondary campus, which helped students feel more at ease when embarking on their Y7 journeys. During a virtual meeting with their new head of Y7, our Y6 students were able to watch videos of some secondary students talking about various fun aspects of the school. Taken together, these efforts helped our Y6s feel more prepared and comfortable at the thought of commencing the next stage of their academic voyage.

In common with most MATs, we endeavour to draw on our teachers' specialisms so that they can benefit children across all of our schools. This can be challenging, however, since our four schools are situated at least 50 miles apart from each other.

To overcome this, we now use video conferencing to help 'beam' teachers into different classrooms., depending on where they might be needed. By the time our students have moved to secondary school, they will therefore be used to having lessons with teachers they're not already familiar with, further softening their transition to Y7.

Increasing pressure

According to an article in *The Lancet Psychiatry*, the incidence of mental health problems in 5- to 16-year-olds rose during the pandemic, from 10.8% in 2017 to 16% in July 2020, alongside more than a quarter of children reporting disrupted sleep.

These impacts, when combined with the anxieties that have historically accompanied the primary to secondary transition, illustrate how important it is that mental health provision forms a core component of all

transition support for the foreseeable future.

At this point it should be remembered that while purpose-designed edtech can be used to help reduce this anxiety, the online technologies young people routinely use outside of school can negatively impact upon their mental health.

Multiple studies have identified strong links between social media use and increased risks of depression, anxiety, loneliness and even self-harm in young people. Y6 students might not be active on social media, but they may well be concerned about the increasing pressure they'll face to acquire a social media presence after transitioning to secondary school.

Encouraging students to explore emotions

To help further smooth their transitions to secondary school, we will encourage students to share their anxieties with their teachers and parents.

ClickView and other educational platforms can again come in useful here, by reassuring students and helping them feel comfortable with what will often be new and unfamiliar emotions. ClickView's short, impactful videos can be used in both primary and secondary settings to help students explore topics such as strategies for developing social skills, resilience, how to build relationships, the development of emotional intelligence, the nature kindness, belonging and extending expectations – all of which are in line with the latest government guidance regarding the RSE curriculum.

Forming friendships

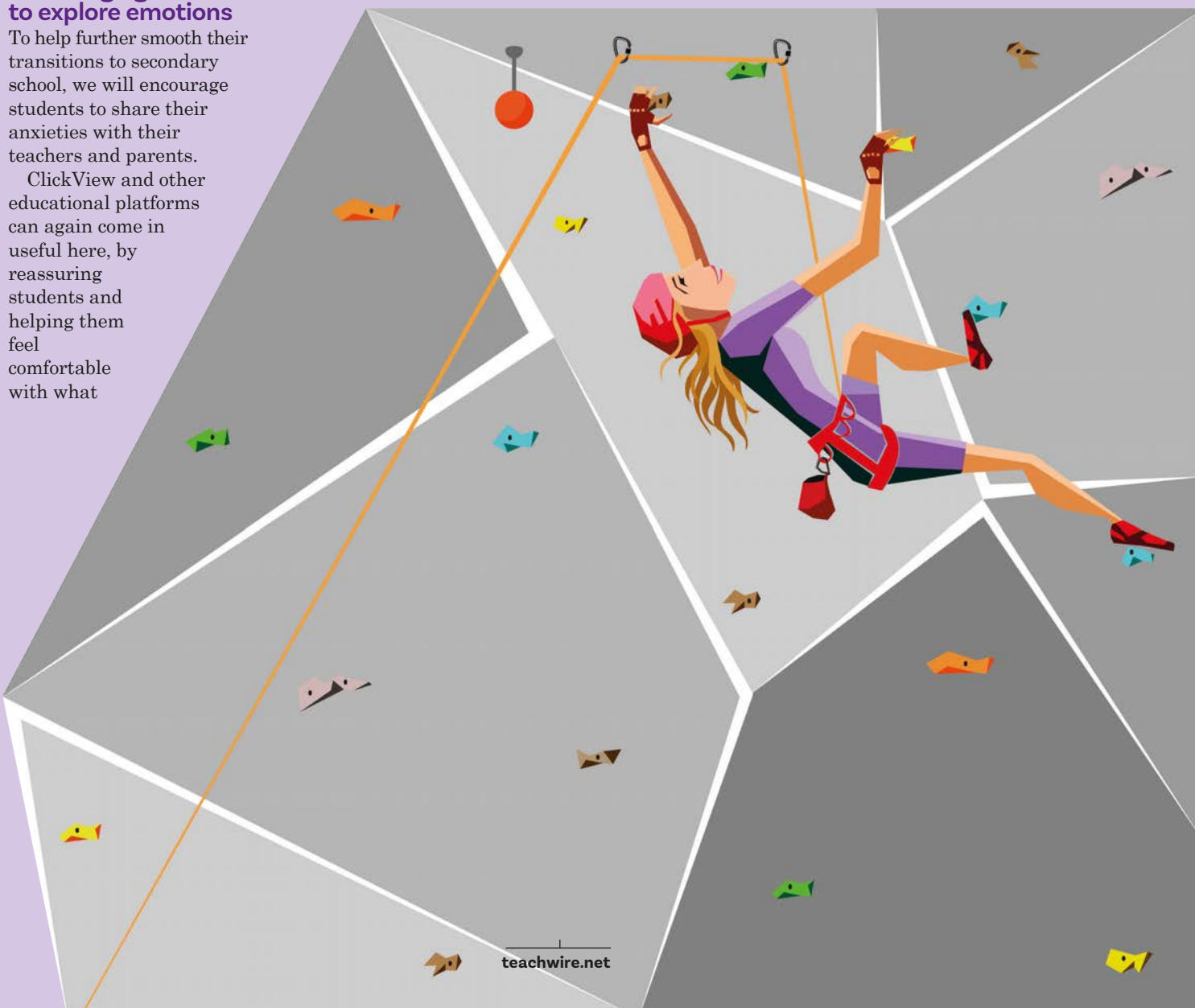
For many students, the prospect of losing old friendships and having to make new ones will be a major source of concern. Since the majority of our students move on to the same secondary school this aspect of the transition is usually less pronounced for them, yet pockets of our students will go on to attend other schools, for whom it's a much bigger issue.

You can help build the skills they'll need to cope with this by setting up plenty of school clubs and activity groups. Giving students various opportunities to apply themselves in teamwork activities and share common interests with new peers will go a long way towards encouraging the formation of new friendships.

Edtech can play a part in this too, with the creation of Teams chats to support the planning and organisation of clubs, which will in turn give their members a safe online space in which to socialise and help friendships grow.

The transition from primary to secondary school can certainly be a precarious time for many students, but there are multiple ways in which schools and parents can offer support, including via edtech, and make their earliest days at secondary school ones to remember – for all the right reasons.

ABOUT THE AUTHOR
Bronnie Williams is a teacher and KS2 lead at Cornerstone Academy Trust, Cornerstone Digital Academies



"Connectivity brings complications"

Young people may seem confident in their use of modern technologies, but we should recognise the profound impact that connected devices and online services are having on their development, warns **Robert Wigley**

During childhood and early adulthood, we develop our 'identity' as a human. What's different in the digital age is that children now develop their identity in a world dominated by their internet interactions, rather than just their family, school and locality.

This means a much wider range of information and behaviours than would have affected previous generations will play a part in that development. This wider information will likely reach the child earlier than the physical equivalent would have for previous generations.

And rather than the child driving their own development by experimentation in and outdoors, it is partly being driven by the technology with which they are interacting for so much of the day. The technology may not have a preconceived developmental agenda (other than possibly fostering addiction), but by virtue of what it presents to the child, it will have a significant influence.

The new 'outdoors'

Understanding this influence is no doubt why Silicon Valley tech stars carefully control their children's screen time and, as has been well-publicised, often send them to tech-free schools. As long ago as 2011, 200 teachers, psychiatrists, neuroscientists and others wrote to the *Daily Telegraph*, identifying the drawbacks of digital devices and expressing alarm over what they called 'the erosion of childhood'.

Susan Greenfield, perhaps the UK's best-known neuroscientist and author of *Mind Change: How Digital Technologies Are Leaving Their Mark on Our Brains*, identifies that in the pre-internet world, children played at home and went 'outside' under controlled conditions – in safe places, or with a parent or carer to supervise.

> **"Silicon Valley tech stars carefully control their children's screen time and often send them to tech-free schools"**

Now children venture onto the internet, the new 'outdoors', often completely unsupervised and uncontrolled. She argues that, in relation to the internet, we need to rapidly develop a 'shared culture of responsibility'. Otherwise, we are allowing our children into the digital equivalent of the 'great outdoors' with potentially very harmful consequences.

The 'predator in the home' is how Dr Mary Aiken, leading global cyberpsychologist and campaigner for the rights of children online, describes the danger of 'missing parents' when it comes to kids spending time alone online. Talking of boys playing group video games, sometimes with people they don't know, she says that if you imagine looking through your front window and seeing your son talking to three men they didn't know over the garden wall, you would wonder what was going on and probably intervene to find out. Instead, she says, you think "Your boy is sitting in his bedroom. He's quietly playing his game. He's at home. He's safe, right?" Maybe not.

Not developing the same attitude to risk, understanding of the consequences of dangers and awareness that things can go wrong, are among the implications of children spending considerable amounts of time on the internet, rather than playing offline.

A dopamine hit

On the internet, things are often either programmed to 'work out', or at least the consequence of them 'not working out' is not terminal. Instead, you are tempted to try again. If you get shot or blown up in a computer game, the game ends and you start again with a new life. This can lead to

children being insufficiently risk-averse or even reckless. It is a dangerous lesson to learn that death (in the game) seemingly has no real-life consequence, and only lasts until you start the next game.

Harvard scientists have demonstrated that sharing personal information about oneself, as promoted on social networking sites, activates the same reward systems that eating and sex stimulate. Greenfield says, "Consequently, the appeal of social networking is rooted in a biological drive of which we are unaware, and which we find difficult to control voluntarily."

We get a dopamine hit every time we post, which excites us, and posting is therefore physiologically exciting. Greenfield argues that this, together with the new way identity is formed online, is why some have buried the traditional concern for privacy. "If identity is now constructed externally, and is a far more fragile product of the continuous interaction with 'friends,' it has uncoupled from the traditional notion of, and need for, privacy."

A weaponised experience

Why are our devices so difficult to put down? Because, as is well documented, they are designed by some of the best neuroscientists in the world to hook us by giving us regular dopamine hits, based on research gathered at huge consumer trials in specialist laboratories.

Adam Alter – who I think first coined the term 'attention crisis' – states, "The problem isn't that people lack willpower" to stay off their devices, but rather "That there are a thousand people on the other side of the screen whose job is to break down the self-regulation you have. As an experience evolves, it becomes an irresistible, weaponised version of the experience it once was … In 2004, Facebook was fun; in 2016, it's addictive."

Alter further suggests that in our desire to get more done faster, "We've forgotten to introduce an emergency brake … or more relevant, the people who produce the engine don't want us to have a brake."

Since 2016, other platforms like Instagram, Snapchat and TikTok have grown rapidly in competition with Facebook, which is now used by the younger generation more for messaging and event planning than for its original purpose.

"Technology companies are trying to get more out of our brains per unit of time," says *New York Times* journalist, Matt Richtel. "It's as close to a business model as you can imagine. The more engaged you are in what they create, the more successful they are."

In his book *A Deadly Wandering*, he points out that this drives consumers away from what they are intending and trying to focus on, as technology designers aim "To figure out how to engage us as immersively as possible."

Primitive instincts?

Perhaps our devices are so compelling that, however disciplined we might be, we just can't put them down. According to Richtel, "Increasingly, technology is appealing to and preying on our deep, primitive instincts; parts of us that existed aeons before the phone … for the power of social connection, the need to stay in touch with friends, family, and business connections."

Richtel observes how the phone brilliantly combines the effects of Moore's law and Metcalfe's law, with 'Moore' delivering increased personal information ever faster, and 'Metcalfe' making said information as personal as possible to make the gadgets more seductive and addictive.

He concludes that "Fundamentally, the extraordinary pace at which consumers adopt these programs and gadgets is not the product of marketing gimmicks. or their 'cool factor', but because of their extraordinary utility. They serve deep social cravings and needs."

One tangible result of the socially normalised appetite for fame, celebrification and attention has been the revolutionary notion of having to be 'always on'. As MIT professor Sherry Turkle says of adolescents, "They experience their friendships as both sustaining and constraining. Connectivity brings complications … it can be hard to escape from new group demands. It is common for friends to expect their friends will stay available – a technology-enabled social contract demands continual peer presence. And the tethered self becomes accustomed to its support."

ABOUT THE AUTHOR

Robert Wigley is the Chairman of UK Finance, having formerly sat on the UK's Economic Crime Strategic Board, served as EMEA Chairman of Merrill Lynch and as a member of the board of the Bank of England. He is also an adjunct professor at the University of Queensland, a visiting fellow of Oxford University's Saïd Business School and an Honorary Fellow of Cambridge University's Judge Business School

This article is based on an edited extract from his book *Born Digital – The Story of a Distracted Generation* (Whitefox Publishing, £9.99)

Edtech TO THE RESCUE

Whether it's narrowing post-COVID learning gaps or imparting essential skills for students' futures, edtech is helping us address more problems than ever before, says **Al Kingsley**

A stark fact demonstrated by the COVID-19 pandemic was the extent to which digital participation can determine a person's ability to access education, participate economically, advance within their careers and communicate or socialise.

With digital transformation continuing to accelerate at an exponential rate, we must prioritise preparing children and young people with the skills, ability and understanding to fully exist within the digital world of tomorrow.

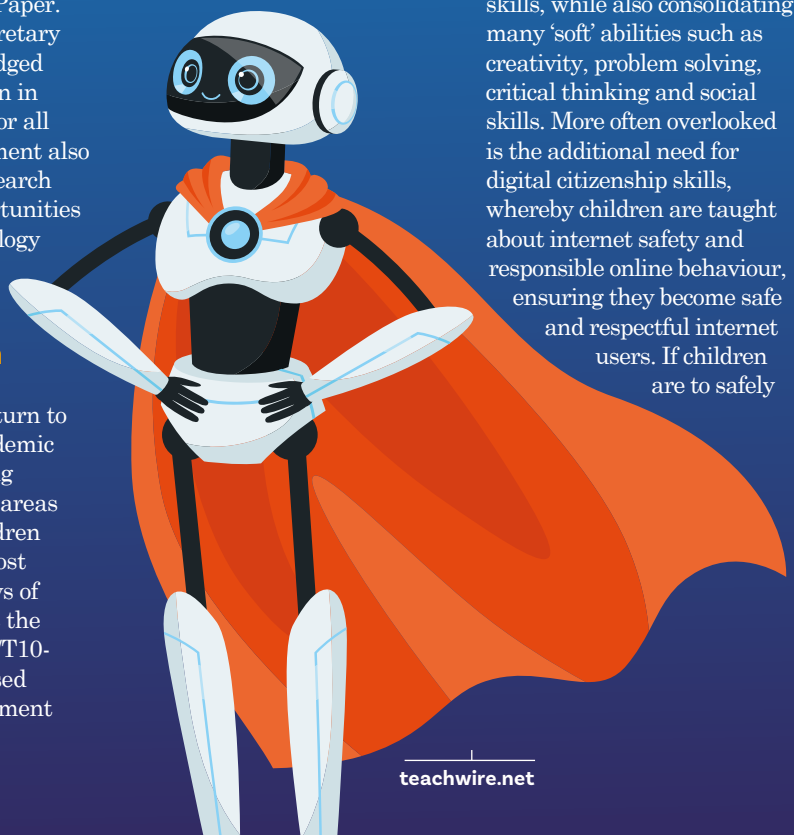
In recent months, the DfE has acknowledged the importance of digital access and skills by crystallising its commitment to edtech. Digital learning featured prominently in its March 2022 schools White Paper. Then Education Secretary Nadhim Zahawi pledged to invest £150 million in reliable broadband for all schools. The department also published a new research paper, 'Future opportunities for education technology in England' (see bit.ly/T10-AK1).

Personalisation

Despite a full and widely-welcomed return to 'normality', the pandemic continues to cast long shadows over many areas of society. With children in England having lost an average of 61 days of learning throughout the pandemic (see bit.ly/T10-AK2), the personalised feedback and assessment methods afforded by edtech can play a vital role in 'catch up' efforts by effectively identifying areas where children require additional support.

Beyond the post-pandemic present, enhanced personalisation and customisation has the potential to radically transform our whole approach to teaching and learning more widely. If implemented and used well, edtech can streamline teachers' workload at a time when this is urgently needed, obviating the need to carry out important but onerous administrative tasks, from photocopying and printing to marking.

Teachers' time and efforts can then be concentrated on supporting children's learning and wellbeing, as well as the careful maintenance of their own work-life balance. The latter is especially important in light of the ongoing retention crisis. The NEU, to pick just one example, has reported that nearly half of the teachers it recently surveyed plan to leave the profession due to unmanageable workloads.



Supporting a digital future

Despite our growing reliance on digital technology, more than 20% of employers describe their workforce as lacking basic digital skills, amid growing fears of an impending digital skills shortage (bit.ly/T10-AK2A).

Embedding technology in classrooms will enable students to gain vital computer and digital literacy skills, while also consolidating many 'soft' abilities such as creativity, problem solving, critical thinking and social skills. More often overlooked is the additional need for digital citizenship skills, whereby children are taught about internet safety and responsible online behaviour, ensuring they become safe and respectful internet users. If children are to safely access the full potential of the online world, digital citizenship skills will have to be incorporated into all aspects of the curriculum.

Another important use of technology in the classroom is in the teaching of specific digital skills, such as coding. Edtech presents a genuine opportunity to invest in, and prioritise, our children's futures.

With the pandemic having disrupted their lives and learning, edtech is now helping to ensure that children are supported through the recovery and return to normality. It also holds the potential for unlocking entirely new modes of learning and development.

In the digitised modern age, access to technology and the internet is no longer a convenient luxury but increasingly an essential right. Sustained and expanded investment in edtech will help to ensure fair and equitable access to technology, and the learning potential it offers young people – all of which is vital if we're to empower every child to grow and thrive in the post-COVID world we find ourselves in.

ABOUT THE AUTHOR
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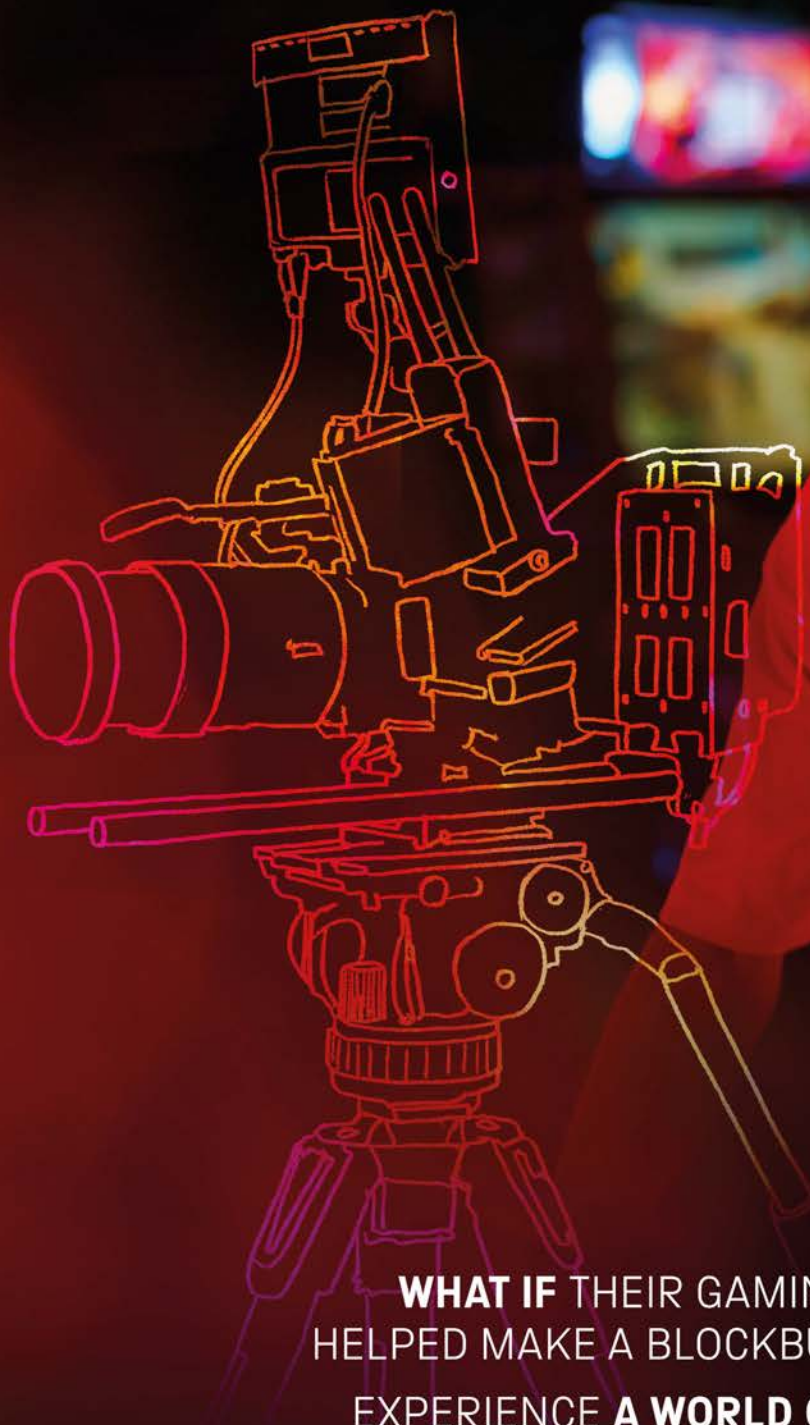

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