THE TOP TEN
CHALLENGES
FACING EDUCATION
RIGHT NOW –

AND HOW EDTECH
CAN HELP BEAT THEM

EDTECH AND NEW EDUCATION REALITIES

Education in the modern world is in an interesting place. On one hand, more children, teenagers, and adults are receiving a quality education in the United Kingdom than ever before; on the other, government policy shifts, worldwide EdTech trends, and a variety of other factors mean there remains many education challenges to overcome.

The issues facing educators vary between sectors. The priorities of a lecturer at a higher learning institute will differ from those of primary school teachers, will differ from a secondary school teacher's.

So where does Education Technology (EdTech) fit into all this? Humankind has been using technology to its advantage for millennia, and teaching and learning has been no exception. EdTech has been a great boon for education establishments at all levels.

With that in mind, this whitepaper focuses on the big challenges currently facing educators in the UK – and how EdTech can help to overcome them.

Before we begin however, please bear in mind that educators and students are at the heart of education. Technology is not the be all and end all. It can help users achieve great things, but its effectiveness is reliant on how teachers, students, and education leaders interact with it.

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BUDGETS: PLANNING & USE OF AVAILABLE RESOURCES

LEVEL: PRIMARY & SECONDARY, SEND

THE CHALLENGE

Schools across the UK are feeling the pinch. Recent government policy has led to a large series of cuts across the public sector. Education has not been left unscathed.

The most recent revelation has actually come in the form of a 2.75% pay rise for staff. Of this, the government is only supplying .75%, deeming the remainder "affordable" for schools to cover themselves. The impact on budgets that have already been set for the coming school year is obvious.

Geoff Barton, ASCL General Secretary, said: "Our reading of the government's statement is that the first 2% of the award will have to come from existing school budgets which are already under intense pressure and cannot sustain more unfunded costs."

Elsewhere, SEND institutes have been subject to a £1.2bn funding shortfall, which has led to a greater number of affected children forced to attend out-of-area schools.

This bad news is compounded by statistics from the Department of Education who reported an 11% increase in the number of young people and children with special educational needs or specialist health and education plans from 2018 to 2019.

While it remains to be seen

FUNDING SHORTFALL

Head teachers say UK schools are facing a **£5.7bn** funding gap.

(BBC, 2019)

how the new government plans on tackling shrinking school budgets, it does suggest schools and educational centres must continue to be smarter, and more cautious, with budgets and financial planning moving ahead.

THE SOLUTION

While not strictly "EdTech", insofar as the below platforms are not focussed directly around learning, they can prove to be useful, smart, time and money-saving solutions for budget planners.

A number of companies offer cloud-based budget management systems which incorporate budget planning and monitoring software in a single platform. These include School Business Services (SBS). Access, and PS Budgeting to name a few.

Essentially, they function in the same way that accountants' online book software works. Users enter their planned budgets, incorporating staff salaries, IT spend and other costs, into the platform. This is then available on-demand, providing a reactive base for administrators and school finance officials to work from.

It may not ease the funding burden fully - only further government spending can really achieve that - but platforms such as these can make life easier for primary, secondary and SEND bursars, school business managers and MAT central offices.

It's worth pointing out that the benefits of a MAT include centralisation of back offices resources. This in turn can bring cost and time savings to planners working in the EdTech sphere.

If we look at case-by-case applications of the above tech, we can see positive feedback from schools, trusts and other education centres.

Taking SBS as an example, its software has been used in schools like Phoenix Primary and Secondary School in Tower Hamlets, London, the Castleman Academy Trust, based in Poole, Dorset and Culvers House Primary, Sutton.

IMPROVING STUDENT WELLBEING IN HIGHER & FURTHER EDUCATION

LEVEL: HIGHER & FURTHER EDUCATION

THE CHALLENGE

Identifying at-risk students to aid and improve their wellbeing is a top priority for higher education institutions across the UK.

Academic-related stress has been rising in UK students for several years. Between 2012 and 2017, for example, the number of students seeking some form of counselling while at university rose by 40%.

Low student engagement can be a warning sign of mental or physical stress. Failure to spot how and why grades are dropping off, or why students aren't using available learning resources, or other issues, can result in students dropping out of higher education.

Smarter learning analytics to understand student behaviour will come into sharp focus in the next few years. Being able to make predictive judgements on students' learning issues would be of great benefit to education leaders in order to a) track students' progress

IT SPEND

UK universities spend an average of **£825 per student** per year on IT equipment.

(Universities UK, 2017)

and b) determine problems before they escalate. In this fashion, at-risk students can be identified and given appropriate support.
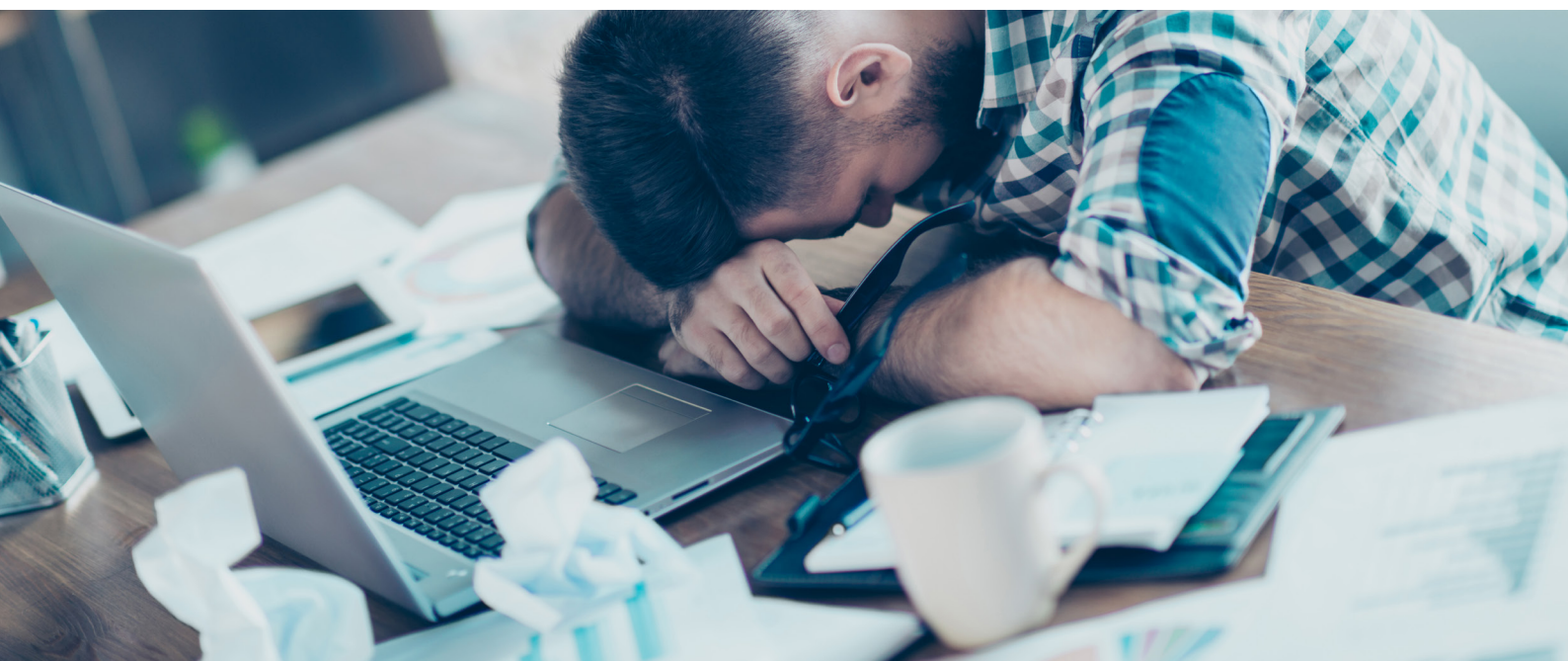
THE SOLUTION

Universities across the world are already using various technologies at their institutions to monitor and improve student engagement.

Nottingham Trent University (NTU) has been using analytical platforms to keep on top of student welfare since 2014.

Its NTU Student Dashboard, developed alongside Solutionpath, measures engagement with their course through monitoring things like library and VLE access, lecture hall swipe card rates, and other similar metrics.

After its initial test phase, tutors reported better communication, stronger relationships with students, and higher retention rates. Similar programmes and platforms have been rolled out at other universities.

Smarter analytical EdTech can also improve several other aspects of teaching:

Personalised learning

Machine learning can provide students with their own learning programmes, based on their current performance and activity.

Adaptive learning

Similar to personalisation, adaptive learning can mould itself to aid struggling students by providing course materials more suited to their current level, or offer further challenges to gifted ones.

Assessment

Machine learning AI can also grade assignments to a higher degree of accuracy, faster than a human could, freeing time for tutors.

Learning analytics

Deep diving into student and teaching data and pulling out actionable results is a job best suited for AI.

STAFF WELLBEING & RETENTION

LEVEL: PRIMARY & SECONDARY

THE CHALLENGE

Studies initiated by the National Union of Teachers (NUT) and Leeds Beckett University, alongside a survey by teacher wellbeing charity Education Support Partnership (ESP), are painting a damning picture of UK teachers' mental health.

ESP's results revealed 76% of education professionals experience some sort of behavioural, psychological, or physical disorder as a result of their busy workload. That compares to 60% of the wider UK workforce.

The NUT's and Leeds Beckett's results are even more telling. 90% of those surveyed were on the verge of leaving the profession, and 86% said they knew someone who had left due to excessive workload. Indeed,

two thirds of participants in the Leeds Beckett research were deemed to have a mental health problem due to their job.

Some of the big issues affecting teacher health include:

- Workload
- Time management
- Communications
- Safeguarding & problem solving
- Wellbeing & work/life balance

This isn't just for educators. Happier, healthier teachers provide a better learning environment for their students. 81% of teachers surveyed by the NUT said their own issues have provided a negative impact on their relationship with their pupils.

TEACHER WELLBEING

An NUT survey says up to **96%** of teachers' workloads has negative family or personal life consequences.

(NUT, 2019)

CEO of ESP Julian Stanley commented on this, saying: "Teaching is one of the most important jobs there is, a chance to shape the future of the next generation. But by turning the role into an unmanageable task or failing to make wellbeing a priority in schools we risk alienating those with the passion and skill to succeed."

THE SOLUTION

The NUT has identified how apps and teacher-focussed EdTech solutions can help lighten the load and improve educators' mental and physical health. Praising said apps, the NUT says the correct application of EdTech can:

Give teachers insight into the classroom	Make the teaching process more efficient
Personalise their teaching	Offer in-depth analysis to support struggling students

Collect valuable real-time data on student performance and progress

A wide range of planning and teaching-aid apps are available, such as Twinkl. Twinkl that provides tailored tools, activity ideas, and lesson plan software. According to the app's designers, over 500,000 lesson plans have been created using the app so far.

INTEGRATING & COLLABORATING WITH INDUSTRY

LEVEL: HIGHER & FURTHER EDUCATION

THE CHALLENGE

As this whitepaper makes very clear, technology is everywhere. Seemingly all aspects of life, including working life post-higher education, have felt the effects of global digitalisation.

The problem is that a large bulk of the student body does not feel prepared to dive into a digital after their line at university ends. A Jisc survey of 37,000 students revealed only 41% of them felt their courses prepared them for life in a digital workforce.

The poll further revealed that two thirds of respondents felt they are not told which skills they will need before starting their course. Less than half agreed that they have regular opportunities to review, refresh and improve their digital skills either.

This isn't just a problem with students. CBI research reveals that 44% of employers nationwide feel that school leaves, college or university graduates are not "work ready".

UNPREPARED

41% of students believe their courses prepare them for a digital workplace.

(JISC, 2018)

With the UK government industrial strategy sating 90% of jobs requiring a degree of digital proficiency within 2 decades, a big emphasis has been placed on improving student's tech knowledge.

THE SOLUTION

As these are tech-related issues, we should look to EdTech to solve them. According to Jisc Chief Executive Paul Feldman, EdTech holds "real potential to empower both staff and students, saving time and making their learning experience more flexible, immersive and engaging for all."

The big solution is to introduce more technology into lecture halls and practical spaces within universities and higher education centres.

There is a wide variety of apps and software designed to improve student engagement via digital means. For example, Skype is used throughout the world in millions of businesses, so universities are starting to introduce it for collaborative student projects.

Apps like MeeTwo can also provide further interaction during lectures, seminars, and other workspaces. For instance, students can tweet to specific teacher-supplied hashtags for further review at the end of sessions.

Augmented reality is expected to be used by some 70% of businesses all over the world by 2022. This suggests that teachers and education leaders should look at implementing similar technologies in the lecture hall and classroom to a) familiarise students with the tech itself and b) improve engagement and understanding of complex topics.

Another aspect to consider is collaboration with industry leaders in specific industries reliant on tech. Take building firm Balfour Beatty. The builder has worked with Leeds Beckett University, White Frog Publishing and Coventry University to create a new automated solution to tackle challenges faced by the construction industry in adopting Building Information Modelling (BIM) technology.

Essentially, the more EdTech is smartly adopted and deployed, preferably in collaboration with actual industry players, then students' digital skills will be heightened.
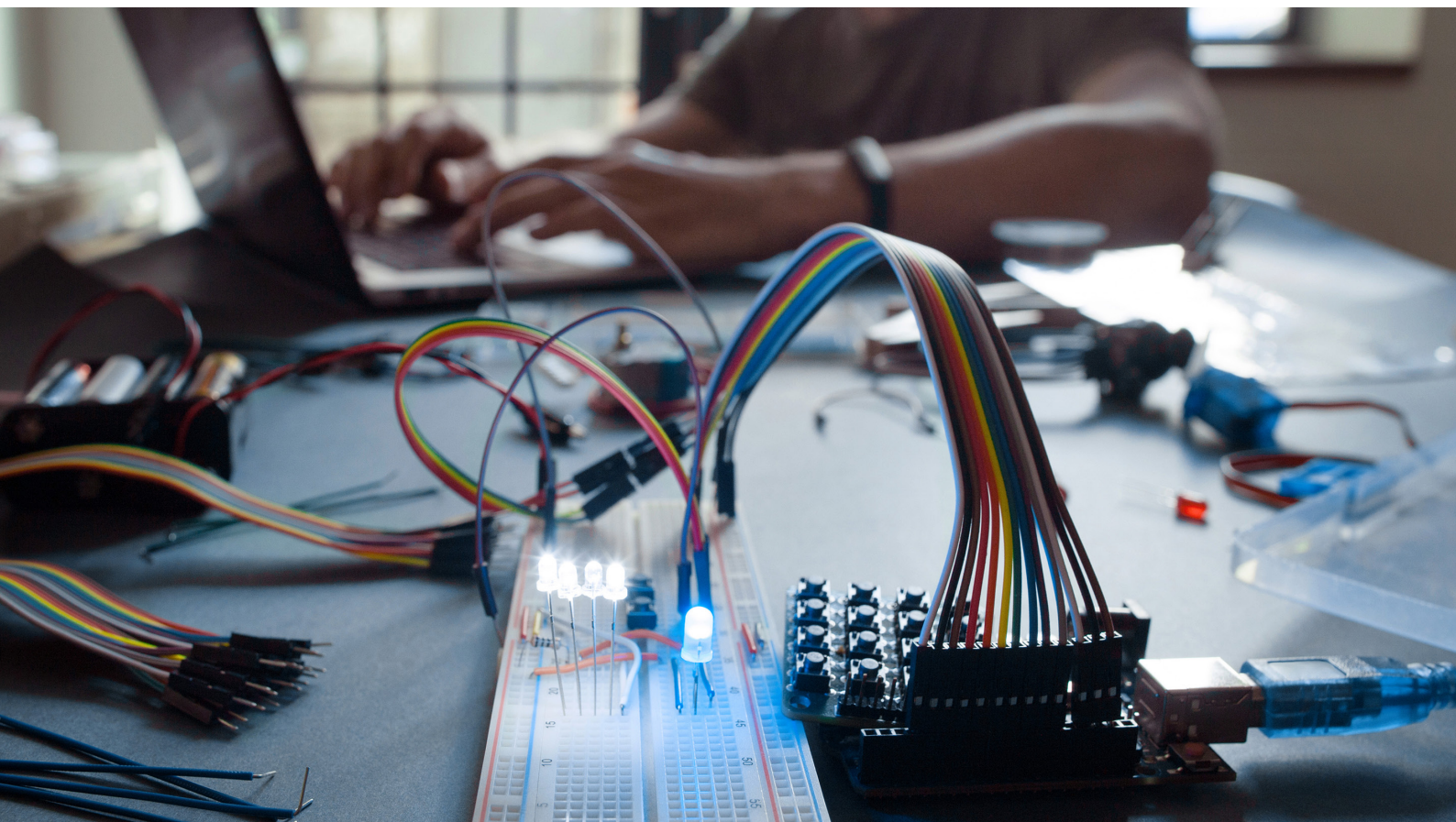
PUPIL WELLBEING

LEVEL: PRIMARY & SECONDARY

THE CHALLENGE

Data from NASUWT, the Teacher's Union, has revealed that student wellbeing is starting to slip at an increasingly early age.

In recent years, there has been a big focus on improving the mental health of secondary school students, but now more primary school children are affected by negative mental wellbeing. Some 41% of 1,300 teachers surveyed said they had spotted mental health difficulties in children aged 4-11.

Mental health issues continue to be a significant challenge for many teenagers. Depression rates in adolescents have grown 70% over the past 25 years, a report from charity Young Minds says.

The government has pledged $1.7bn to help improve children and young people's access to mental health support. Improved links between schools and the NHS has been flagged up as part of the government's scheme.

Teachers play a big role in identifying welfare issues amongst students and that's not just in the classroom. A BBC schools report from March 2017 showed that 73% of educators often worry about

STUDENT WELLBEING

96% of teachers say they have come into contact with pupils of all ages experiencing mental health issues (NASUWT, 2018)

pupil's wellbeing inside their free time too.

A suite of solutions is available for tech-savvy teachers who wish to help engage with their students, discover and begin to deal with mental health issues before they escalate.

THE SOLUTION

Where does EdTech fit in? There are, of course, multiple apps that deal with student wellness in a variety of guises. These are applicable for both primary and secondary learners.

Mind Moose, for instance, is an app designed by former Head of Year Sarah Ross. The app, using bright, friendly animations, teaches users on key topics including self-esteem, how to manage emotions, and how-to problem solve to develop resilience. In this way, children can work though their issues and learn how to deal with them at a younger age.

That's a more primary-focussed app. What about secondary school students? In an age group where many mental issues, such as depression and anxiety, are increasingly common, a wide variety of products and apps are now on the market to help teenage learners cope.

For Me is an app developed by four students at Poynton High School, Cheshire. The goal was to provide easy access to confidential support and advice. Childline has taken the idea and formulated it into a full app alongside sponsors Barclays. For Me includes features like a private "locker" area where users can note their thoughts and also a daily mood tracker. As a Childline app, it also provides access to online counselling if necessary too.

Communication is essential in understanding student's wellbeing at all levels. A number of platforms provide such facilities. MeeTwo, mentioned earlier in this whitepaper, allows this by letting users anonymously post messages about their current feelings in an online space, and users can respond in kind. Speaking to others can help normalise the experience of mental struggle, app designers Kerstyn Comley and Suzi Godson explain, which MeeTwo allows.

While the above apps may not be education-focussed per se, they do help impart vital life lessons and aid teachers and students alike by helping improve learner wellness.

UPSKILLING AND DEVELOPING EDUCATORS & STAFF

LEVEL: HIGHER & FURTHER EDUCATION

THE CHALLENGE

In the further and higher education environment, digital technologies are regularly used in lectures and seminars. Career personal development in the future will be dependent on educators' ability to pick up and adapt to new teaching technologies.

Teachers and education leaders need to upskill to keep up with technology's relentless pace. According to a Jisc survey of 2,000 HE teaching staff members, 38% rate their institution's digital training provisions as better than average, yet 26% said it was below average.

One big barrier is time. An unnamed lecturer surveyed by Jisc said: "Workload is so cluttered during term time that developing new digital teaching practice in response to student feedback during the semester itself is difficult/impossible."

Another is visibility of teaching services, says a JISC-surveying college teacher. New staff, in

EARLY ADOPTERS

61% of teaching staff consider themselves early adopters of digital teaching technology

(Jisc, 2018)

particular, may not be aware of upskilling opportunities and tech support services provided by their college or university.

THE SOLUTION

There is a wide variety of third party EdTech training courses and platforms available to HE and FE staff.

The Education & Training Foundation provides a number of digital teaching frameworks, personal digital skills courses and enhanced teaching platforms for staff to take advantage of. Jisc itself has its EdTech Launchpad, providing a touchpoint for staff and tech companies to meet, collaborate and train together too. These are just two examples of the myriad of services out there for teachers to take advantage of for their CPD.

Universities are also undertaking this training themselves. For instance, the University of Edinburgh has its own Digital Skills and Training development programme for staff and students alike.

There are five key areas institutions need to consider when boosting their staff's EdTech and digital skills:

Content focus – Training sessions need to be hands on and include concrete examples of succesful digital learning methodologies.

Active learning – Technology development never stands still, and neither should skills training. Staff should be constantly being trained.

Sustained use – It's not feasible to simply show staff new tech, platforms and devices once and expect them to become experts. Sustained exposure and training is important.

Collective collaboration – One of the best sources for skills training is other educators. They ought to be brought in at the training stage. Also use the tech suppliers' knowledge.

Coherence – Ensure there is a coherent view of what EdTech will achieve at the institute and ensure training is arranged to match.

INTERPRETING THE NEW OFSTED FRAMEWORK

LEVEL: PRIMARY & SECONDARY

THE CHALLENGE

As of 2019, Ofsted is changing its inspection methodology. Gone is its "one-size fits all" approach to school inspections. Ofsted's new aim is to find and review accurate, actionable data on what actually occurs in classrooms.

Ofsted's new criteria, in effect from September 2019, seeks to establish a gap between the "bad data" collection of the past and "good data".

What is meant by that? "Bad Data" refers to simply collecting statistics based on old performance metrics. Some commentators have dubbed this "national accounting", and say it doesn't really provide a nuanced view of student's progress, outcomes, and the teaching environment as a whole.

"Good data" then is a more balanced, almost holistic, view, taking into account students' strengths, weaknesses, and progress paths.

However, this is harder to measure in fail/pass terms than the old, criteria-led Ofsted

TOUGHER STANDARDS

As of June 2019, just **16%** of previously "Outstanding" schools have kept their Ofsted rating after being reassessed.

(Schools Week, 2019)

inspection approach. Real-time assessment is now required, which can only really be achieved by the use of suitable technology.

THE SOLUTION

Using digital technologies to deliver quality teaching and engaging education is becoming vital in the modern classroom.

While the impact of EdTech in schools is not measured by Ofsted, it can still be used to improve the overall quality of education students receive.

One aspect of EdTech that can provide tangible results for Ofsted inspectors is Virtual Learning Environments (VLEs). For those unfamiliar with VLEs, they are tools to structure, manage, and deliver learning activities and content. Some can be single solutions, such as Blackboard or Moodle, while others are composed of multiple integrated educational products in a single suite.

In this context, VLEs can help compile actual actionable, insightful data based on real learning outcomes from real students. Student work is often collated digitally with VLEs, which provides a database to dip into and analyse to see learning effectiveness. This will be key in Ofsted formulating school ratings, especially in an environment where ratings levels are becoming tighter.

EdTech, when properly used, can play a very big role in providing a quality teacher experience. This is what Ofsted is ultimately measuring after all.

The key, however, is not to let EdTech overtake or replace traditional teaching methods. Rather, it should enhance and upgrade teachers' education leaders' ability to engage with their students in a productive, outcome-friendly manner.

EVOLUTION OF LEARNING MODELS

LEVEL: HIGHER & FURTHER EDUCATION

THE CHALLENGE

As EdTech evolves, and adoption rates at universities and colleges rise teaching methods to evolve to keep up.

Students are more comfortable with technology than ever before. Keeping them engaged via EdTech is clearly accomplishable, but the technology does demand a different approach to teaching.

Education leaders cannot stand still on this. Without it, they risk being unprepared for a new era of digital education. This will have a negative effect on both their own effectiveness, their student's wellbeing and final learning outcomes.

DIGITAL DESIRE

A third of all higher and further education students want digital technology to be used more often on their courses

(JISC, 2018)

THE SOLUTION

This all depends on the type of technologies higher education institutes decide to employ. However, what follows are some examples of teaching methodologies being rolled out nationally in response to new technology.

Blended learning – Blended education essentially fuses traditional teaching methods with new tech-lead approaches. This means smart analysis of learning statistics to gauge student performance, automated marking & grading, and student empowerment by providing a hands-off approach, supplemented by online materials, letting them go at their own pace.

Platform facilitation – Students are more accustomed than ever to curating their own content, thanks to streaming services like Netflix. Universities are now considering following similar models, using similar curated content distribution platforms.

Experiential curation – A complex title for essentially using digital platforms to continue learning outside of the classroom or lecture hall. What does this mean in practice? We're talking smarter analytics for better student communication and assessment, as well as software like video conferencing to extend teaching hours.

Learning certifier – Through mobile applications coupled with university dashboards, and gamification methodologies, learning certification keeps on top of students' development. By accruing micro credentials integrated with online dashboards, this allows tutors to see which of their students are excelling or failing behind, and they can plan personalised teaching experiences accordingly.

Workforce integration – Establishing collaborations with companies to build curricula and even extracurricular activities, helps to give students the skills they need to excel in a digital era.

CREATING A DIGITAL STRATEGY

LEVEL: PRIMARY & SECONDARY

THE CHALLENGE

In August 2018, then UK Education Secretary Damian Hinds laid out the government's plans to create a new tech-led future for primary and secondary schools nationwide. The full strategy was launched in April 2019.

It's now on schools and academies to look into developing their own digital strategies, in accordance with government goals.

Now, there are a number of challenges inherent in working up a new digital plan from scratch.

Ofsted regulations – At present, Ofsted lacks a rating system for use of EdTech in schools, even with the organisation's updated criteria. Even so, Ofsted has said it will be looking at how EdTech "facilitates education". While it may not have its own criteria, schools will still need to take Ofsted's tech-focussed findings into consideration.

Procurement – Procurement processes vary from school to school, but a recent whitepaper from VLE designers Canvas suggests they can be streamlined. The whitepaper flagged up primary schools in particular, which often do not have the staff to commit to working on a protected procurement process.

Training – Our view is that ongoing training is an essential component of any digital strategy. Education leaders must be equipped with the skills they need to be comfortable with EdTech used in their classrooms. Teachers up to speed with EdTech often provide better student outcomes.

Legacy equipment & services – Updating or replacing legacy IT systems in a cost-efficient manner is a key priority. When mapping out a plan for digital transformation in your school, it is also important to plan how purchases made at different times can be integrated to ensure maximum impact.

ANNUAL SPENDING

UK schools spend roughly **$900m** a year on EdTech

(The Guardian, 2017)

THE SOLUTION

Firstly, schools should carefully consider how they can measure the impact and efficacy of any purchase, whether it be for teaching & learning or for back office activities. This is an important step that should be taken in advance of any budgeting or procurement.

Choosing when to purchase new digital solutions is also an important point to consider. As with many aspects, timing can be everything. It's advisable not to buy everything at once. Rather, a staggered approach is more beneficial.

Not only does this allow for a more measured release of funds, making it easy to stay on top of budgets, it also means potential integration can be planned in phases. Planning in such a way means that IT and technical departments aren't overwhelmed, teachers can get to grips with the new EdTech and work training into their CPD too.

Training is the essential step here. Schools need to ensure their educators are kept up-to-date with the latest tech developments. INSET sessions

and close collaboration with suppliers will help embed new skills with teachers and ensure that they have the confidence to make the most of the technology.

The removal of legacy equipment should fall into the procurement phase. Identify which pieces need to be replaced/upgrade and plan accordingly. It should be noted that electrical equipment, like computers, are subject to special waste equipment disposal regulations. Be aware of this.

DELIVERING VALUE FOR MONEY

LEVEL: HIGHER & FURTHER EDUCATION

THE CHALLENGE

Higher and further learning tuition fees are currently at an all-time high in England, Wales and Northern Ireland

With students now paying over £9,000 per year to attend university, there is a real need to deliver value for money in higher education.

This is especially true given rising levels of industrial action amongst academics and lecturers. While staff issues are related to tighter education budgets and lack of proper pension schemes,

it is important to ensure that this does not have a negative impact on students.

For instance, The University and College Union has estimated that recent strike action undertaken by staff at 65 institutions UK-wide in 2018 has cost over 1 million students 575,000 teaching hours.

As education costs for students rise, universities, colleges and other higher education centres must now be more proactive in how they offer a return on their students' investment.

COMPENSATION

Students should be refunded **50%** of tuition fees for lost teaching times at universities the Office of the Independent Adjudicator recommends.

(The Independent, 2019)

While we talk about costs, it's worth mentioning students are investing lots of time in pursuing education. Thus, maximising learning time is also a priority for educators.

THE SOLUTION

A recent Jisc survey polled HE students on their preferred EdTech choices. The most requested technology was lecture capture software. This allows students to make up missed contact time and/or revisit lectures. Platforms mentioned in the survey include Kahoot, showbie, Duo and Scholar.

Tutors being reachable also has a positive impact on HE outcomes. Technology plays a key role here. Integrated systems like Classflow are accessible at all times, giving more touchpoints between tutors and students. In turn, this "borderless classroom" promotes further discussion, analysis and collaboration outside of classroom hours. Coventry University students are using similar platforms to share their work across the world.

Different courses have different needs, but their learnings can still be applied in a wider EdTech context. Science students at the Universities of Strathclyde and Bristol prepare for practical lessons by watching a video and completing an online assessment before they head to labs. That way, they already have the knowledge they need to transform into practical skills, maximising their learning time.

A mixture of on-and-off campus tech is proving effective in giving students more access to learning opportunities, but that isn't the whole story.

70% of HE students also felt confident and able to learn more when their teachers had a knowledge, and were confident using, digital classroom technology.

Staff should be trained on any new platforms or technologies. 20% of teachers surveyed by Jisc said they did not have sufficient digital skills to use IT and EdTech solutions to their full.

Ultimately, EdTech helps deliver a high ROI for students. The best solutions are simple to use for students and tutors alike, and delivered by teachers who are confident, well-informed, and up-to-date with any and all technology in use at their respective institutions.

bett

BETT LONDON: CREATING A BETTER FUTURE BY TRANSFORMING EDUCATION

Bett is the first industry show of the year in the education technology landscape, bringing together 850 leading companies, at least 100 exciting new EdTech start-ups and over 34,000 attendees (representing more than 140 countries) from the global education community.

They come together to celebrate, find inspiration and discuss the future of education, as well as the role technology and innovation plays in enabling all educators and learners to thrive.

OUR MISSION AND BRAND VALUES

At Bett we believe in creating a better future by transforming education. Our mission is to bring together people, ideas, practices and technologies so that educators and learners can fulfil their potential.

Premium – Worthy of investment. Our job is to deliver stand out experiences that enrich the global education community.

Inclusive – Bett is open. We believe everyone has a role to play in transforming education and our role is to ensure they have the opportunity to do so.

Game Changing – We believe everyone has the potential to make a difference in education. We are passionate about discovering, elevating and amplifying these game changers.

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