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PEDTECH UPDATE

REDEFINING EDTECH

Spring 2025 Edition

THE SIGNIFICANCE OF PEDTECH IN INTENTIONAL INTEGRATION OF TECHNOLOGY IN EDUCATION.

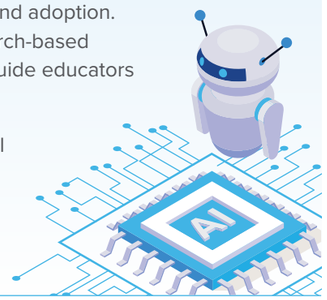
IN THIS ISSUE:

EDTECH UPDATE – SPRING 2025

WELCOME TO PEDTECH UPDATE, A SPECIAL EDITION OF OUR REGULAR EDTECH UPDATE DEDICATED TO THE GROWING IMPORTANCE OF PEDAGOGY-DRIVEN TECHNOLOGY IN EDUCATION. THIS ISSUE FEATURES INSIGHTS FROM LEADING CONTRIBUTORS WHO BRING THOUGHTFUL PERSPECTIVES TO THIS INCREASINGLY VITAL AREA.

As classrooms and technology evolve rapidly, the integration of digital tools must go beyond adoption. A pedagogical approach ensures that technology is used purposefully, grounded in research-based methodologies like constructivist learning and social learning theory. These frameworks guide educators in thoughtfully adapting technology to meet the diverse needs of their students.

In an era where educational practices are rightly informed by robust research, it's essential that schools approach EdTech with pedagogical intent at the forefront. By beginning with clear learning outcomes, educators can align the right tools to their teaching goals, rather than retrofitting technology into existing practices. This edition explores how schools can achieve that balance and build future-ready classrooms.



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EDITION CONTRIBUTORS

LIAM BUGGS. CHIEF INNOVATION OFFICER

Liam Buggs is the Chief Innovation Officer at eduthing, where he supports schools with all education and curriculum-focused activities, training, and consultancies. With his experience as a teacher and senior leader in primary schools, Liam brings his education background and knowledge of school life to his work.

Liam works with all stakeholders on an ongoing basis to ensure project success, workflow efficiency, and most importantly, transformative learning experiences for pupils linked to individual and personalised school curricula.

He is passionate about bringing computing and educational technology to life for pupils, helping staff to realise the impact that effective use of technology can have in the classroom every day, developing digital skills to help our young children become competent digital citizens, and unlocking curiosity so that students are not just consumers but producers, tinkerers, and doers who question the why and how of the ever-evolving digital world.

Liam is a strong advocate for the use of technology in education. He believes that technology can be a powerful tool for learning, and he is driven to help schools use technology effectively to improve student outcomes.

NAOMI GALE. EDTECH SPECIALIST

Naomi is the EdTech Specialist at eduthing, supporting schools to develop their computing curriculums and purposefully embed technology across the curriculum. She has a passion for transforming the landscape of primary education and championing diversity in the technology sector. With a wealth of experience as a primary educator and computing subject leader, she understands the pivotal role that early education plays in shaping the future of technology.

Naomi has worked with stakeholders at every level within school communities, driving the seamless integration of technology across the curriculum. She makes setting ambitious goals for computing curriculums accessible to schools, ensuring that all learners have access to an outstanding technology education. Naomi is a Professional Development Lead with the NCCE and is experienced in the delivery of training and coaching to support educators in their delivery of the computing curriculum. Naomi is also the creator of many innovative technology curriculums and experiences some of which will soon be available with eduthing. She believes that engaging children with technology through exciting and memorable experiences empowers the future generation and prepares them for the digital advancements of tomorrow.

BEVERLY CLARKE MBE. EDUCATIONAL CONSULTANT

Beverly Clarke is a TechWomen100 Award winner and a leader in education. A former teacher, she is an education consultant, published author, ambassador, board member, coach, mentor, speaker and trustee. Beverly, seeks to raise the outcomes for all through understanding of and access to technology. She has national and international experience of computing education. Additionally, through her childrens' book series, she is a #SBS small business Sunday award winner.

She is the author of published books - "Computer Science Teacher" – insight into the Computing classroom (2017), aimed at attracting new entrants into the computing teaching profession and of the self-published series – "The Digital Adventures of Ava and Chip" a children's book series with the aim of making tech concepts exciting, relatable and easy to understand.

To connect with Beverly use the following channels – on **Twitter/Instagram (@MsBClarke), LinkedIn (https://www.linkedin.com/in/beverly-clarke/)** or to follow the **book series (@AvaChipBooks)**.

DR FIONA AUBREY-SMITH. EDD MA(ED) MMUS PGCE BA(HONS) FCCT FRSA FHEA

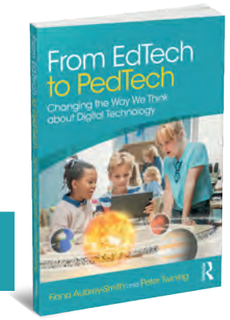
Named by Education Business as one of the 50 most influential people in education (2022), Dr Fiona Aubrey-Smith is an award winning teacher, leader and academic with a passion for supporting those who work with children and young people. As Founder of PedTech and Director of One Life Learning, Fiona works closely with schools and trusts, professional learning providers and EdTech companies. She is also an Associate Lecturer and Consultant Researcher at The Open University and sits on the board of a number of multi academy and charitable trusts.

Co-author of the best selling book From EdTech to PedTech: Changing the way we think about digital technology, Fiona is also a regular contributor to events and publications about Education, Pedagogy and Education Technology. She is a Founding Fellow of the Chartered College of Teaching, and has been awarded Fellowships by RSA, NAACE and the HEA and was awarded the TPEA Research & Development Award in 2021.

In 2023, Fiona was granted Freedom of the Worshipful Company of Educators, City of London, and was named one of the Top 5 Visionary Women in Education by The Knowledge Review.

WHY IS EVERYONE TALKING ABOUT PEDTECH?

BY DR FIONA AUBREY-SMITH



The start of last academic year saw the release of a hotly anticipated new book by Dr Fiona Aubrey-Smith and Professor Peter Twining, From EdTech to PedTech: Changing the way we think about digital technology. Going straight to number 1 on global bestseller lists, and with critical acclaim from leading education figures from around the world, this new book shifts the paradigm for thinking about digital technology in schools, encouraging us all to think about moving from an EdTech mindset to a PedTech mindset.

SO, WHAT IS THIS BOOK ABOUT AND WHY IS IT SEEN AS SUCH A KEY POINT IN THE GLOBAL EDTECH CONVERSATION?

Dr Fiona Aubrey-Smith explains,

"For many years, EdTech has been plagued by a well-meaning hype cycle, whereby each new technology innovation offers promise and inspiration for teachers and learners. Yet despite huge investments in infrastructure, tools and training, the sector has found it very difficult to identify the impact or codify it at scale. This book tackles that challenge head-on, by summarising the vast body of existing research, setting out what leaders and teachers need to know, and then providing a sequence of activities that walk individual teachers as well as school teams, through what to do next".

For example, if you are leading conversations around EdTech in school this year, these are the '6 key research findings' that this book recommends focusing on:

WHO'S DRIVING THE EDTECH BUS?:

Any decision in a school is ultimately a pedagogical decision because it will affect choices that can be made by teachers and learners. Therefore, any decision about EdTech should be made by those who understand its pedagogical implications and possibilities (not just the technology, security or training implications). As Headteachers and senior leaders you must lead these conversations – drawing in expertise to advise your own thinking – you must lead from the front.

KNOW THY PEDAGOGY:

Every teacher and leader needs to understand their individual Pedagogical Beliefs and how these translate into strategic intentions as well as everyday classroom practice. There are many things that influence teacher beliefs – most of which are rarely (if ever) unpacked. Think about your own childhood teachers for a moment – you may not remember the content they taught, but you will probably remember their interpretation of what 'being the teacher' felt like.

Pedagogy incorporates ideas, systems and structures that are put in place to support learning. This includes teaching but also goes way beyond that to incorporate ideas about where knowledge comes from, what the idea of 'going to school' means, and who is part of a learner's support system. We must all invest time in developing a meaningful understanding of our own pedagogical values and beliefs because these are the single biggest influence on the learners we work with.

DEVELOP AN ON-DEMAND MINDSET:

This means that learners need to be able to independently access and meaningfully use a laptop or tablet device as and when they feel it supports them in their learning. This is not about children using screens all day long, or a 'free for all', and it is not about a 1:1 device ratio. It is about classroom culture and relationships – removing the barriers that teachers often put in place, and allowing children access to tools and resources that will meaningfully support their learning – at the point of need. Mindset about use matters far more than the number of devices, and it is mindset that results in greater impact.

TRUST CHANGES EVERYTHING:

Digital technology changes power relationships in the classroom. This can be intimidating for those in school contexts where there is a lack of trust of learners and/or teachers. However, digital technology offers the most benefit in a context where learners are taught to be agentive within their own learning. Schools who embrace this find significant improvements to behaviour, attendance, motivation, inclusion, and consequently, progress and attainment – notably closing the gap for learners facing different forms of disadvantage. But it all starts with developing a culture of trust. Sometimes that's about taking a risk, creating a plan, and having faith in the plan and the people.

MONITOR WHAT YOU VALUE:

Leaders often talk about the importance of learners becoming confident, independent, curious and collaborative, yet how often are these meaningfully monitored through robust data analysis? Digital technology can make a profound impact on learning that is not explicitly captured by existing performance measures (e.g. autonomy, dignity, metacognition). These ingredients are the foundations for accelerated progression, sustained outcomes and lifelong trajectories. So be clear about what you really value and then monitor that diligently and robustly. You'll quickly see what the impact and implications are.

THE EVIDENCE ICEBERG:

Evidence and understanding about specific learners' needs and about effective pedagogical approaches to meet them should be at the heart of all thinking, decision making, and action. We are now in an evidence-informed era in education which can feel overwhelming for many. But we must be more discerning about research headlines and soundbites which are often misleading or heavily biased. Detail is key, and understanding how published research findings relate to your own specific and nuanced context really matters. Furthermore, taking a balanced approach to the use of both quantitative (measurable) and qualitative (describable) data – and avoiding an over-reliance on just one form of data.

With each of these ideas explored in depth in their book there is a lot to think about. But as Fiona explains,

"From EdTech to PedTech was written to provide a practical handbook to support teachers and leaders in making sense of it all and to make some fairly complex research more accessible to practitioners. But we also wanted to provide practical activities to help readers unpack and understand their own practice more meaningfully and ultimately bring clarity and precision to support future improvement. Through our own research, teaching, consulting and advisory work around the world we have seen the transformational and significant impact that pedagogically underpinned uses of digital technology can have. We deeply believe that every child and young person should benefit from these kinds of opportunities and accelerated learning experiences – rather than just the lucky few."

BARRIERS TO TECHNOLOGY IMPLEMENTATION & HOW TO OVERCOME

BY BEVERLY CLARKE MBE

Very early on in my education career, on a subject leaders course, I became aware of a worrying issue. On the course, one of the areas for discussion was EdTech and infrastructure. It turned out that a local school had invested heavily in iPads, but did not have the necessary infrastructure (WiFi) in place.

The result of this was that the iPads were effectively useless and there was no more money in the pot to attempt to rectify this matter. In essence, the school was sold a product but not a solution that would have any impact for either learners or teachers.

This matter has stayed with me for years. I believe that the reason, it has done so, is because, sometimes non-technical professionals place their trust in others who do not ultimately consider the matter holistically, but rather through a narrow lens.

This reality, provides the backdrop, for this article in which I will explore barriers to implementing technology in the classroom along with how to manage them. The challenges of a tech strategy vary depending upon educational context, resources and stakeholder involvement.

Let's look at 9 areas barriers to tech implementation along with considerations and solutions.

TEACHER TRAINING:

Before teachers can be expected to use tech, effectively in the classroom, there needs to be a training programme in place. Also, I feel, the programme should show and share contextualised examples of tech used within subject areas. This is a bug bear of mine. I have sat through countless, "training programmes" that have been so generic, I have left without any substance. Once training has taken place, I suggest taking schemes of work or specifications and annotating where EdTech would be beneficial, and to whom it would be beneficial.

ASSESSMENT CHALLENGES:

Part of implementing EdTech should involve consideration for how work will be assessed, both formative and summative. Having experienced first-hand systems that took more than the teaching time to mark an individual piece of work! Automated marking systems and those that can be easily customised to organisational needs, are the ones that win my vote. Anything that effectively reduces teacher workload.

RESISTANCE TO CHANGE:

There are many different factors that can play into resistance to change. This can range from learners, teachers, administrators, senior leadership, governors and parents. Everyone needs to be brought along the journey of tech within an organisation. The clear and tangible benefits of tech implementation and investment must be known, made visible and appropriate for each particular audience.

SCREEN-TIME BALANCE:

A real consideration when using tech in the classroom is to look at how much time across the day a student will be potentially looking at a screen, in addition to time out of class looking at a screen. The latter may be unknown. However, it is widely recognised that reduction in screentime is important for overall health and areas such as reducing eyestrain, preventing headaches, increasing focus and productivity and in greater social interaction.

DIGITAL INEQUALITY:

Is an important consideration, when making decisions around tech. There are many schools in the country, with limited devices for learners in school. This then magnifies outside of the classroom in terms of "digital" – covering devices and connectivity. Here at eduthing we bridge this divide through EdTech loan kit, to help schools enrich the curriculum without added expense. Some of the equipment in our kit, supports AR, VR and 3D printing activities.

Nationally, there is also the Digital Poverty Alliance (an initiative of The Learning Foundation) which has programmes in place to help bridge the digital divide such as Tech4Families

Another current initiative is that from the **National Centre for Computing Education** (NCCE) available for state schools that do not currently offer GCSE Computer Science to learners. Schools can be supported with funding to address areas such as budget, infrastructure, staff development and more. By pulling all of these aspects together and making a plan this also helps to bridge the digital divide.

DATA PRIVACY:

With any system implementation, due consideration needs to be taken to ensure that the use of tech does not put personal and organisational data at risk of a cyber security threat or a data breach. Here at eduthing we offer our schools a bespoke cyber incident response plan as part of our managed service.

SUSTAINABLE SOLUTIONS:

As our world becomes more digital, we must consider the impact of tech upon the environment. Sustainability needs to be part of the plan for implementing a tech solution. We help our schools with "mapping your journey to the cloud" and all aspects of sustainable tech.

BUDGETARY CONSTRAINTS:

With funding being a big factor in education organisations, resulting in not being able to implement tech effectively, I recommend also having a member of staff who is knowledgeable in grant bidding to ensure that your school is able to access as much funding as possible.

LACK OF INFRASTRUCTURE AND RESOURCES:

coming back to the start of this article, the correct infrastructure must be in place to deliver an effective solution, this means, up to date devices, both in terms of hardware and software, along with reliable connectivity. With this in mind utilising a managed service will go a long way toward strengthening your tech offering.

As I draw to a close, my last few words of advice are to consider tech now and future tech, along with impact and implications it may have within your setting. We are preparing our learners for an as yet unknown world and we need to give all the best possible opportunity. Tech solutions are a part of the answer. I also encourage you to read this recently released research report from the Department for Education - 2022-23 Technology in Schools Survey Research report November 2023.

https://assets.publishing.service.gov.uk/media/655f8b823d7741000d420114/Technology_in_schools_survey__2022_to_2023.pdf

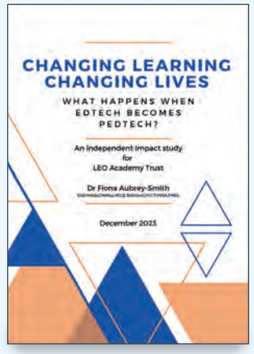
CHANGING LEARNING. CHANGING LIVES:

WHAT HAPPENS WHEN EDTECH BECOMES PEDTECH?

BY DR FIONA AUBREY-SMITH

In November 2023, a debate was raised in the House of Lords asking the Government what assessment they have made of the role of educational technology (edtech) being used in UK schools. Specifically, the debate enquired about impact in relation to educational outcomes and social development. Few would argue the need for this robust debate given that parliamentary sources record UK schools spending around £900 million a year on edtech, and historically, impact evidence has been anecdotal and often influenced by political or commercial agendas.

However, a ground-breaking new report, being launched by LEO Academy Trust in December 2023, raises the bar for all those seeking to understand the impact of digital technology when used in school contexts. The report, entitled 'Changing Learning. Changing Lives: What happens when EdTech becomes PedTech' is a 185 page review forensically probing all aspects of Multi Academy Trust life. The research, led by Dr Fiona Aubrey-Smith, sets out findings which address the impact on teaching and learning, attainment and progress, inclusion and equity, as well as drawing out the impact on recruitment and retention, teacher workload, financial efficiencies, environmental sustainability, attendance, behaviour, SEND, mobility, MAT growth and many other areas besides.



SO WHAT'S THE STORY?

In 2019, LEO Academy Trust embarked upon a journey of digital transformation, investing significant time, money and human energy into an ambitious new future. Every member of staff and every child in Key Stage 2, was given their own Chromebook and every child in Early Years and Key Stage 1 was introduced to on-demand access to an iPad or Chromebook to support their learning. For the price of £12 per child per month, LEO have implemented a transformational approach to teaching and learning across a trust that now includes 4,500 children and 600 staff across 9 schools.

In 2020, a global pandemic struck and the whole concept of 'going to school' changed overnight for children worldwide. Since that pandemic, schools nationwide have faced significant challenges ranging from children reluctant to return to school, budget shortfalls, a significant drop in attainment, disengaged learners, rising SEN register figures, and a teacher recruitment and retention crisis. In 2023, despite living within the same political, economic and societal structures, LEO Academy Trust stands in a very different place to the national picture.

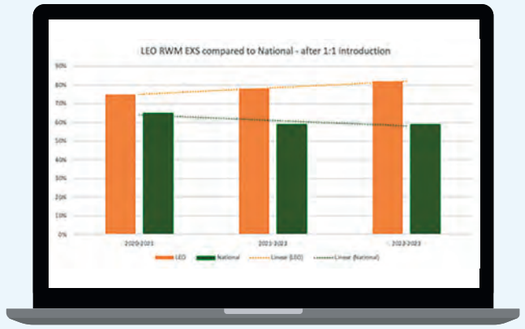
As Phil Hedger, CEO of LEO Academy Trust explains,

"Having embarked upon our digital journey across the trust some years ago, it was important to us to understand exactly what impact that investment had made. We knew our results had gone up, teachers were saving time and the trust was growing, but we wanted an independent, critical assessment so that we could learn from it and inform our strategic planning".

The independent research study conducted by Dr Fiona Aubrey-Smith and a team of 17 researchers, opens, unpacks and dissects the ingredients which LEO have put in place, drawing upon a combination of 4,500 survey responses, 606 documents, 154 observations, 65 interviews, 24 focus groups and hundreds of hours of professional discussion and reflection. The consequent report presents a comprehensive analysis as a narrative, a series of findings (about successes as well as about how challenges have been overcome), and a set of recommendations for the future - for the benefit of both the LEO community, and for the wider educational landscape.

Evidence in this reports details a breadth of significant findings that have emerged as a result of LEO's journey, including that:

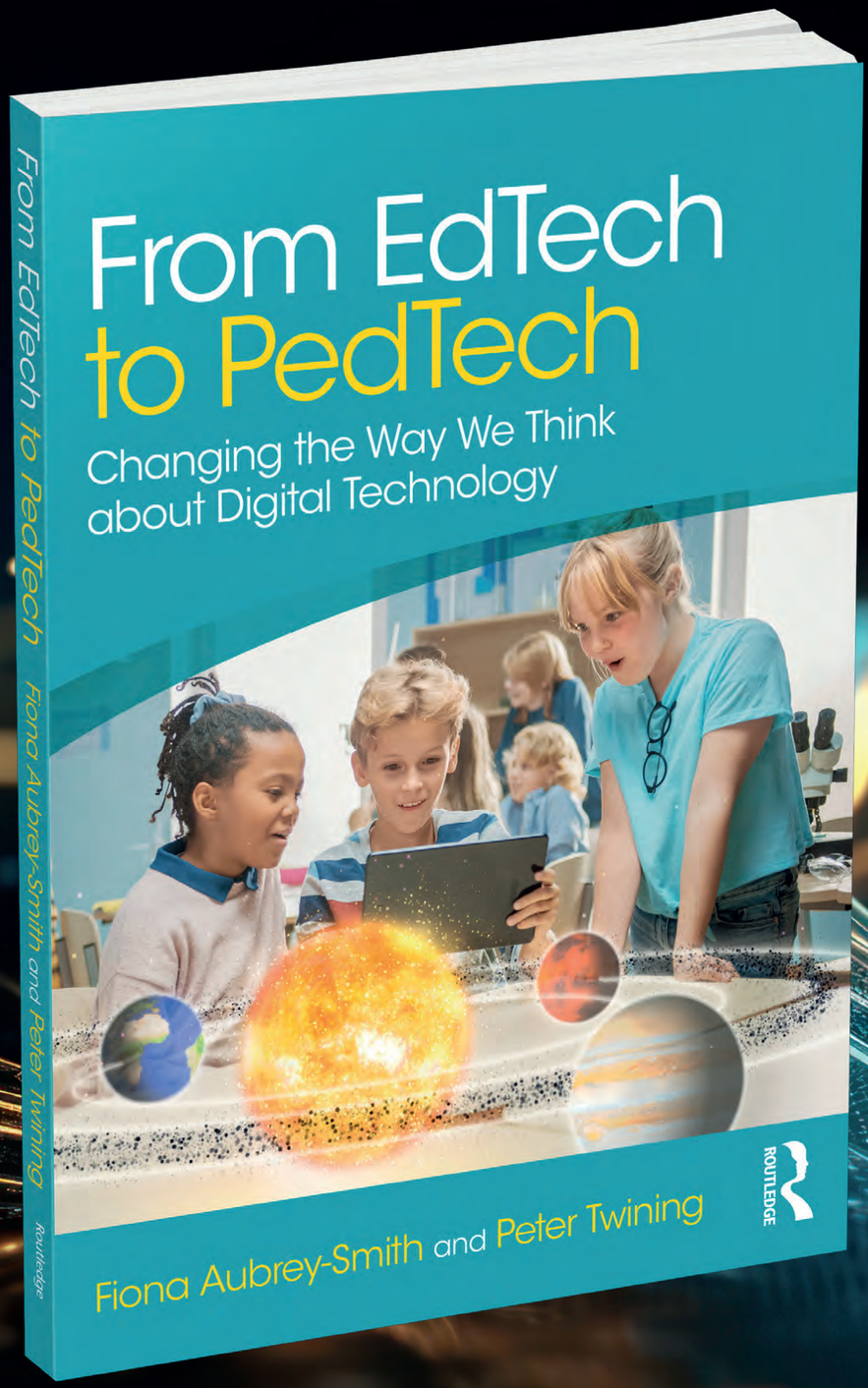
+ **The attainment of children at LEO schools significantly outperforms national norms in national tests, with the gap between national averages and LEO widening each year (rising from 14-23% over the last 3 years)**



+ **The proportion of children achieving greater depth in national assessments in RWM at LEO being more than triple the national average over the last 3 years**
+ **The number of children on the SEN register requiring expensive intervention programmes has reduced by around a third because of embedded inclusive practice**
+ **Attendance figures across LEO show being higher than the national average, with net mobility at LEO being just 4% compared to an average of 20-48% across other London schools**
+ **Teacher capacity repurposed as a result of moving from paper-based to digital tasks adding up to the equivalent of 11 full time members of staff**
+ **Digital tasks increasing classroom efficiency by 23%, allowing the repurposing of time for more targeted and inclusive learning - leading to the significant attainment gains outlined above**
+ **Nearly 15,000 digital badges completed by LEO children, and nearly 75% of staff having certified digital skills - comparable with a MATs 8-10 times the size of LEO - embedding digital skills at the heart of children's future trajectories**
+ **Staff satisfaction being consistently 15-20% above national benchmarks with LEO seen as an employer of choice - leading to exceptionally high levels of staff retention (through internal professional growth), high quality candidate appointments, and significant advertisement and recruitment cost savings**
+ **The reduction in worksheet printing and lesser amounts of exercise books saving approximately 400 trees per year with a trust wide saving of around £78 per child per year (just over half the cost of the Chromebook provision)**
+ **A consistent and sustainable increase in number on roll with LEO schools being targeted as the school of choice by families**
+ **Children across LEO classrooms being autonomous, independent, supported, capable and confident learners with a sense of belonging and purpose**

These headline findings are powerful and persuasive, but they are not simple. Behind each of these findings sits a story about a journey that LEO have undertaken over a number of years and involving a great deal of time, energy, thoughtful reflection and sheer hard work. It has been a fusion of visionary leadership, strategic thinking, operational planning, daily delivery, partner relationships and community mindedness that has led to the significant outcomes seen above. This is not an easy road to travel, nor are any of these outcomes attributable to one single act, intervention, person or project. However, the range and scale of these findings could not have been achieved without LEO's deep integration and embedding of digital technology.

By embarking upon their journey with confidence, LEO's leadership and governance set out an ambitious agenda for what the future of schooling could look like. In just 4 years, LEO have seen significant positive impact across a range of trust metrics and descriptors ranging from accountability and inspection to inclusion and equity. But perhaps the most powerful ingredient embedded within every aspect of the trust is that there is a genuine widespread belief every child, every adult, every leader, and every one of us, is, and always will be, a life long learner.



Routledge
Taylor & Francis Group

https://routledge.pub/From-EdTech-to-PedTech

Aimed at teachers and leaders looking to create greater impact on teaching and learning through the use of digital technology in schools, *From EdTech to PedTech* translates research on the effective integration of digital technology in education into relevant, accessible and practical guidance for teachers and school leaders. This much-needed handbook bridges the gap between knowing 'what works' and knowing how to make it work for you and your learners. This engaging research-informed guide is an essential resource for any school leader or classroom teacher looking to maximise the value and the learning impact of digital technology in their school.

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> "It should be read by every school."
>
> – PROFESSOR SIR TIM BRIGHOUSE

> "This is a great read full of practical advice."
>
> – PROFESSOR ROSE LUCKIN

> "This is a brilliant book about rethinking digital technology in education."
>
> – PROFESSOR YONG ZHAO

> "A must-have resource."
>
> – PROFESSOR DAME ALISON PEACOCK

> "Who's driving the EdTech bus? After reading this book, you will become the driver."
>
> – PROFESSOR JOHN HATTIE

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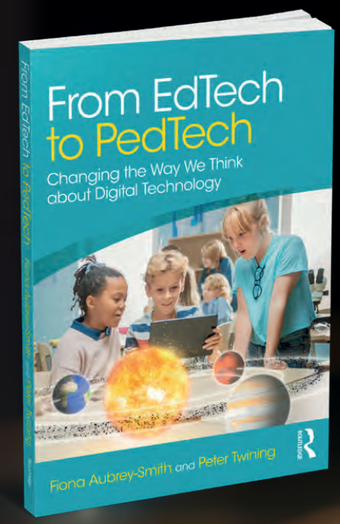

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PEDTECH IN ACTION: REDUCING COGNITIVE LOAD

BY NAOMI GALE

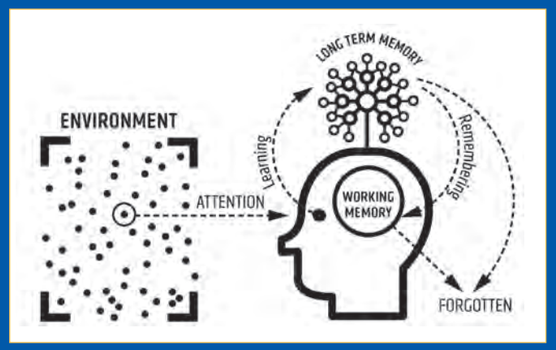
Many in education will be aware of the charity, Education Endowment Foundation (EEF), and its value when trying to better comprehend the value of different pedagogical approaches in the classroom. Recently, there has been increased promotion of cognitive science approaches as a beneficial pedagogical approach. In fact, an EEF teacher survey found that 85% of respondents said that cognitive science strategies were central to their own approach to teaching. Pedagogies underpinned by cognitive science are broad and include:

- SPACED LEARNING
- INTERLEAVING
- RETRIEVAL PRACTICE
- STRATEGIES TO SUPPORT COGNITIVE LOAD
- DUAL CODING

I looked more closely at retrieval practice in our Autumn EdTech Update and so in this article, I will zoom in on how technology can be a powerful tool to manage cognitive load. In Dylan William's own words, he's stated to have 'come to the conclusion Sweller's Cognitive Load Theory is the single most important thing for teachers to know.'

COGNITIVE LOAD THEORY - WHAT IS IT?

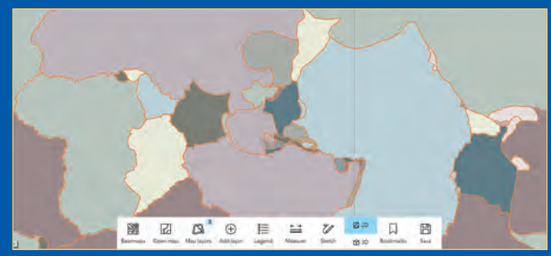
I won't cover the theory in-depth here instead I will focus on the basic principles and how it has been suggested that cognitive load can be reduced to improve students' learning outcomes during lessons. Cognitive Load Theory provides an explanation on how new knowledge is acquired by students and most importantly that the working memory has finite capacity to process new information. This means that when learners are unable to process the quantity of new information in the working memory, it will not be able to transfer to long term memory. In teaching, reducing cognitive load does not need to mean over-simplifying new learning but rather minimizing unnecessary load ensuring the working memory is focused on new information.

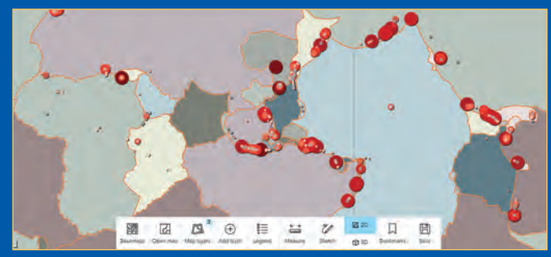


Technology can become a powerful tool in reducing cognitive load and I could fill this entire publication with ideas, but below I've boiled it down to share a few examples of creative ideas that will perhaps inspire your own ideas.

IDEA 1: TEACHING TOOL

While as teachers we are often familiar with using atlases in geography, I wonder whether you have considered using digital alternatives? There are many available online and the National Geographic Mapmaker is a particular favourite of mine. When considering cognitive load, digital maps can be enormously helpful in reducing cognitive distraction by limiting the information we choose to display and introducing overlays on a map to enhance understanding.
For example, shown below are screenshots that demonstrate how I have used a digital map in the teaching of volcanoes. A key understanding that learners must acquire is the relationship between tectonic plates and natural phenomena like volcanoes. With a digital map maker, I can remove all unnecessary detail from the map and initially choose an overlay which only displays tectonic plates and their boundaries. At this point, I can introduce another layer to the map which adds red dots to shows volcanic eruptions. I can add and remove that layer freely and discuss with students their observations. The digital map therefore becomes not only a powerful visual tool evidencing the correlation between volcanoes and tectonic plate boundaries but I've also been able to remove any unnecessary detail from the map that could be adding to cognitive load.





IDEA 2: STUDENT TOOL

At times, it may reduce cognitive load by providing a digital tool for students to use as opposed to the traditional pen and paper. On the j2data platform there are a number of simple graph making tools. It involves a simple interface in which students press a plus or minus to add images to a pictograph or complete a frequency table to have a bar, line or pie chart produced alongside. Importantly, in the example shown here, the bar chart is produced one step at a time as each row of the table is completed. For some students this can be an important scaffold to reduce cognitive load because at each point a quantity is added to the table a corresponding bar appears. As a result, they are seeing a broken down, step-by-step production of their graph being created. Digital maths manipulatives can similarly reduce cognitive load and focus working memory on the mathematical interaction with a resource rather than the practicalities of giving out equipment, tidying it away and perhaps pieces dropping off the sides of desks! This isn't to say that students' should always use digital alternatives but rather suggests how they can be used at appropriate episodes in learning to reduce cognitive load.

IDEA 3: TASK DESIGN TOOL

Microsoft Flip is a fantastic free tool that can be used in the classroom. It is a platform which enables students to record video responses of learning and easily return this recording to a central classroom style 'hub'.
As educators, I'm sure we are acutely aware that task design has a significant relationship to our individual students' cognitive load. For students who may find writing at length a challenge, videos can become a fantastic alternative to record and demonstrate their understanding of learning without expending cognitive load on sentence structure, handwriting, spelling etc. Flip enables teachers to control video length and format while providing students with simple tools to capture videos. Within the tools students can even overlay themselves on another screen where they can be drawing or showing workings.

What I hope is that I have in some way persuaded you that digital resources can, not only reduce cognitive load, but can sometimes also, on occasion, trump traditional classroom resources. And if you're interested in understanding more on how to integrate digital tools across the curriculum from a pedagogically informed perspective, please get in touch to discuss how we can work together to provides staff training or consultation to benefit your school!

PEDTECH IN ACTION: WITHIN THE COMPUTING CLASSROOM

BY BEVERLY CLARKE MBE

EdTech is big business and an industry sector that had enormous growth recently, in part due to the pandemic, which saw educators turn to EdTech tools en masse to bridge physical divides and to include learners at what was a challenging time for all.

However, EdTech is one dimension of classroom practice. In this column I am going to reflect on PedTech, by taking you through a series of reflective exercises.

EXERCISE ONE

*(*based upon your current understanding of what is EdTech)*

1. Consider the last lesson you taught, in which you utilised edTech, in any format.
2. Now I would like you to make a note of that edTech
3. Then I would like you to note down what influenced your decisions to use the chosen EdTech

We are now going to drill down further

EXERCISE TWO

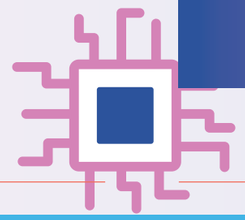
1. How did that tech help each of the learners in the classroom and meet their needs?
2. How did that tech help you as a classroom practitioner?
3. What can you draw from your answers?

Once you have considered these points, we will develop a bit more... My next questions to you are:

EXERCISE THREE

1. Did you consider pedagogy in tandem with the EdTech solution(s)?
2. Would this reflective activity be different if the process was to consider first, the topic and then which Computing pedagogical approach worked best for the students, then choose the edtech solution to support the pedagogical approach?

It certainly flipped the script for me to think in this way. This is a good thing as reflective practice is part of how we grow as educators.



PEDAGOGIES FOR COMPUTER SCIENCE

Let's take a step back and look at the most up to date Computing Pedagogy Principles currently available from the National Centre for Computing Education (NCCE).

Lead with Concepts	Structure Lessons	Make Concreate
Unplug, Unpack, Repack	Work Together	Read and Explore Code First
Foster Program Comprehension	Model Everything	Challenge Misconceptions
Create Products	Get Hands On	Add Variety

12 Principles of Computing Pedagogy from the National Centre for Computing Education

For each of these principles there are pedagogy examples associated with the principle. I encourage you to download The Big Book of Computing Pedagogy and use it, to question and enhance your practice.

I would now like you to consider the previous reflective activity differently and consider the next lesson where you will be teaching the same group you identified earlier. **Asking yourself these questions:**

EXERCISE FOUR

1. What will I be teaching?
2. What pedagogy would work well for the learners individually and collectively. Why would this be so?
3. How does the EdTech support learner engagement and retention?
4. Is there a need to utilise classroom support staff in a different way? Perhaps some learners need a different pedagogical approach?
5. What support do you need to fully utilise an EdTech solution?

(these are a few questions – there is more on probing your practice in the recent book From EdTech to PedTech)

EXERCISE FIVE

1. Who on the SLT team determines the EdTech and considers the pedagogical practice in subject areas? perhaps this is an area that needs to be discussed, with consideration for learners impacted by EdTech.

DEVELOPING EDTECH IDEAS

Now that you know the pedagogy you will be using. Then consider the EdTech solutions you will use within the classroom and why each is being used, use the list below to help you with EdTech ideas and perhaps add some of your own.

+ Adaptive learning platforms
+ Collaborative Learning tools
+ Conferencing software
+ Educational apps/games
+ Interactive Quizzes
+ Interactive whiteboards
+ Learning Management Systems
+ Mixed Reality Tools
+ Podcasts
+ Resource Sharing Tools
+ Self-marking/Realtime assessment tools
+ Student Management Systems

Is there anything that you would now change within your practice?

Having given this consideration, another question to ask is

CASE STUDY

For the purposes of this article, I worked through this activity with an secondary teacher of Computer Science, here is what we found.

EXERCISE ONE

1. **Consider the last lesson you taught, in which you utilised edTech, in any format.**

2. **Now I would like you to make a note of that edTech**

Codementum - game based Python programming, also a whiteboard

3. **Then I would like you to note down what influenced your decisions to use the chosen EdTech**

Student engagement using game based learning

EXERCISE TWO

1. **How did that tech help each of the learners in the classroom and meet their needs?**

Students enjoy gamification, it allows them to reflect on their learning and identify gaps in knowledge. This can be problematic for students who find learning challenging. They are able to identify the specific skills they are missing to solve the problem. They are independent enough to be able to go away and review these.

2. **How did that tech help you as a classroom practitioner**

Allows me to get feedback on learning and progress. I can review students' progress on particular topics and can see how well they have solved the problem presented.

3. **What can you draw from your answers?**

How well students have understood the concept, do I need to re-cover/re- teach the content.

EXERCISE THREE

1. **Did you consider pedagogy in tandem with the EdTech solution(s)?**

Yes, gamification and enhanced engagement.

2. **Would this reflective activity be different if the process was to consider first, the topic and then which Computing pedagogical approach worked best for the students, then choose the EdTech solution to support the pedagogical approach?**

I'm not sure it would be for this example. But it is an area, that I can explore and experiment with.

EXERCISE FOUR: CONSIDER YOUR NEXT LESSON WITH THE SAME GROUP

1. **What will I be teaching?**

Python Programming

2. **What pedagogy would work well for the learners individually and collectively. Why would this be so?**

Collaborative - Paired programming, working together, sharing skills, ideas etc.

Inquiry/Problem solving with more realistic examples

Reflective - Tasks to review learning at the end of the lesson

3. **How does the EdTech support learner engagement and retention?**

Gamification enhances engagement, increases motivation and resilience. Rewards, competition, tracking and achievement can all enhance engagement and participation.

4. **Is there a need to utilise classroom support staff in a different way? Perhaps some learners need a different pedagogical approach?**

Whilst I think this has made the learning/content more accessible, it means a different way of supporting. Support staff will need to be aware of the logistics of the technology and receive training on use. They also need to be able to identify the skill that is missing preventing the task being solved so they can direct the student back to content to revise that content.

5. **What support do you need to fully utilise an EdTech solution?**

Knowledge on the logistics of the technology (training), budget to fund it, infrastructure (tech support)

EXERCISE FIVE

1. **Who on the SLT team determines the EdTech and considers the pedagogical practice in subject areas? perhaps this is an area that needs to be discussed, with consideration for learners impacted by EdTech. What do you think and why?**

The Deputy Head (line manager of Computing) and Business Manager (line manager of IT Support) consider the technology, but mostly the Deputy Head for pedagogy as the Business Manager isn't a trained teacher.

I think this is an area that isn't considered enough, do SLT have enough time to research and consider the impact of a wide range of tech for different subjects, the pedagogy and impact. For Computing it's ever changing which is a lot to keep up with if you don't have a keen interest/time to research.

PRIMM, paired programming, gamification etc, I wonder how many SLT who are non-specialists are aware of these more recent developments? Perhaps it is more stable in other subjects where the focus of learning isn't technology which is changing so quick?

There are technologies which would apply across all subjects, like a visualiser, I think Computing's exception is that the content changes so quick.

How do your responses compare? Are there any actions you will take after reading this article?

My final suggestion in closing this article, the next time you will be investing in EdTech, I encourage you to consider the impact of the tech against the points raised in this article. I also encourage you to read more about EdTech in this DfE research report.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1117067/Edtech_market_in_England_Nov_2022.pdf

EDUTHING PUPIL WORKSHOPS 2025

INSPIRING PUPIL WORKSHOPS

Unlock creativity and innovation in your classroom with our dynamic **Pupil Workshops!** Designed for learners from **EYFS to Year 6**, with **KS3 workshops coming soon**, our engaging sessions blend hands-on learning with cutting-edge educational technology. From interactive digital experiences to creative skill-building, our workshops provide students with exciting opportunities to explore, create, and grow.

WORKSHOP TITLE	DESCRIPTION	AREA	YEAR GROUP/ KEY STAGE	APPROX SESSION LENGTH
Code & Go Gruffalo Adventure	Join a coding adventure with Code & Go Mice as children help guide the mouse on a journey to find the Gruffalo! Along the way, they'll meet inquisitive animals and use sequences and algorithms to design the path. With fun, hands-on coding, they'll explore how technology and storytelling come together to create a thrilling adventure!	Programming	Year 1/2 - KS1	1 hour
Mindful Micro:bits	In this workshop, children dive into the world of the micro:bit. They create a personalised mindful device that helps regulate emotions. Through hands-on programming, they'll explore how technology can support well-being and creativity. It's a fun, interactive session where children learn to code, problem-solve, and bring their ideas to life!	Programming	Year 3/4	1 hour
Tech Tails: Creating a Micro:bit Pet!	In this fun, interactive workshop, children will use a micro:bit to design and code their very own virtual pet! They'll learn how to program their pet to interact, respond, and even "live" on their device. Through coding and creativity, they'll bring their pet to life while learning essential tech skills.	Programming	Year 5/6	1 hour
Manic Maze Adventure with OctoStudio	Embark on a thrilling journey with our OctoStudio workshop where learners will design and navigate their own maze adventure. This workshop introduces the basics of algorithms and problem-solving as learners create sequences of instructions to guide their characters through custom mazes.	Programming	Year 3	1 hour
Crafty Cooking Game with OctoStudio	OctoStudio workshop. Learners will last their own cooking games, learning to sequence actions and create interactive elements. This workshop focuses on developing on logical thinking and digital design skills as children create engaging cooking scenarios with chefs, ingredients and kitchen challenges. Get ready for a creative and deliciously fun experience that blends learning with play.	Programming	Year 4	1 hour
MakeCode Arcade: Chase the Pizza!	In this action-packed workshop, children become game designers using MakeCode Arcade! They'll craft their own Chase game, designing backgrounds, sprites, and coding exciting interactions, lives, and scores. From the first idea to final playtest, they'll bring their own pixel-powered world to life, ready to play and share!	Programming	Year 3 & 4	1 hour 15m
MakeCode Arcade: Barrel Dodge Mayhem!	Dive into the world of retro gaming with our MakeCode Arcade Workshop. Learners will create their own classic Barrel Dodge game, developing essential programming skills using block coding. This hands-on session will introduce concepts including loops, controls and collision detection, fostering creative problem-solving and game design thinking.	Programming	Year 5 & 6	1 hour 15m
Robots Unleashed!	Get ready to step into the world of robotics! In this interactive workshop, children discover what robots are, what they can do, and how we can program them. From walking and talking to rolling and backflipping, they'll explore different ways to bring machines to life. Expect gasps, giggles, and jaw-dropping moments as they witness technology in action!	Robotics/ Programming	Early Years to KS2	45 mins - 1 hour
All Aboard the Coding Express	In this hands-on workshop, children take control of the Intelino Smart Train, discovering how coloured tile sequences can program it to stop, change speed, and even drop off a wagon! After experimenting with different commands, they put their skills to the test with a sequencing challenge. Get ready for a fast-paced adventure where thinking like a coder keeps the train on track!	Robotics/ Programming	KS1 – KS2	45 mins - 1 hour
Time Travel and Tech: Bringing Learning to Life	Take your history, geography, science, or English topics to the next level with hands-on EdTech enrichment! Using tools such as green screens, CAD, VR and AR apps, we can transport children to different eras and locations around or out of the world! Learners can design ancient artifacts, launch rockets, or even interview historical figures. Whatever the topic, we'll customise engaging, immersive activities that make learning unforgettable!	Creative Media/CAD	KS1 – KS2	45 mins - 1 hour
Lights, Camera, ANIMATE!	In this hands-on workshop, children become stop-motion animators. Whether bringing a scientific process to life or creating a scene based on a chosen theme, they'll develop creativity, patience, and digital skills - one frame at a time! Get ready for big ideas, tiny movements, and amazing animations!	Creative Media	Year 1/2 - KS1	1 hour
AI Unlocked: Teach the Machine!	In this exciting workshop, children dive into the world of artificial intelligence! They'll explore how AI learns, train their own model using real data sets, and uncover the power (and limits) of machine learning. Through hands-on experiments, they'll think like AI engineers and discover how technology is shaping the world around them!	AI	Year 4, 5, 6	1 hour
Scotty and Leyla's Online Adventure	Guided by Scotty the Safe Squirrel and Leyla the Learning Ladybird, children will enjoy an engaging story, role-playing with puppets and a catchy song! This fun workshop teaches essential online safety rules in a memorable way, ensuring children understand the importance of not sharing personal information, being kind online, and asking for help when needed.	Online Safety Staying Safe	Early Years	30 mins
Screen Dream Team	This interactive workshop teaches children the importance of managing screen time and staying safe online. Through engaging activities, children learn key vocabulary, safe screen time practices when playing games or watching videos, and healthy habits for balancing screen use with other activities.	Online Safety Online Etiquette	KS1	30 mins
Hiroshi's Heroes	Our Internet Superhero, Hiroshi and his friends, guide children through this interactive workshop designed to promote online safety and kindness. Through discussions and activities, children will learn to identify unkind behaviour online, understand the impact of bullying, and develop positive online habits. They'll also discover how to seek help if they or someone they know is being bullied.	Online Safety Cyberbullying	KS1	40 mins
Gaming Guardians	This popular workshop explores the choices children make, and the potential risks associated with online gaming. The Guardians will guide children through PEGI ratings, encourage informed decision-making, and highlight the dangers of communicating with strangers. Children will pick up tips on how to modify their settings as well as block and report inappropriate behaviour and manage healthy screen-time.	Online Safety Gaming	KS2	40 mins
Digital Detectives	Children will learn to identify and combat misinformation and fake news online. Through interactive videos, discussions, and hands-on activities, they'll develop critical thinking skills and learn to verify facts. The workshop includes a fun quiz to reinforce key concepts, ensuring children leave with the tools to navigate the digital world safely and confidently.	Online Safety Misinformation	KS2	40 mins
Is It Reely You?	This workshop is designed to navigate the complexities of online identity and reputation. Through interactive activities, discussions, and the ReelLife online tool, children will learn to differentiate between online and offline identities, make responsible choices, and interact positively in digital spaces. This workshop fosters critical thinking about online safety, trust, and respectful communication, ensuring children are well-equipped to manage their digital personas.	Online Safety Social Media	KS2	1 hour
Detective Sam Scam's Phishin' Mission	Detective Sam Scam helps equip children with essential cybersecurity skills! Children will learn to identify and protect themselves against potential threats. Through interactive videos, discussions, and hands-on activities, they'll understand key concepts like malware, phishing, and strong password creation. Children will become "Phishing Detectives," investigating real-life scenarios to spot scams.	Online Safety Malware/ Phishing	KS2	1 hour

BRING EDTECH TO LIFE IN YOUR SCHOOL!

Ready to elevate your classroom experience? Connect with our education team today and discover how our workshops can inspire your students. Book your session now: **education.team@eduthing.co.uk**

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