The Worshipful Company of Educators and The Chartered College of Teaching

The Future of Digital Technology in Education
Supporting Educators to Support Children's Learning

Context

In the summer of 2023, at The Guildhall in the City of London, the Worshipful Company of Educators and the Chartered College of Teaching co-hosted a roundtable to discuss the future of digital technology in education. This blended event acted as a catalyst for a fresh wave of thinking about leadership, teaching, learning, assessment and research in relation to digital technology in schools and colleges. Through a series of presentations and focus groups, nearly 200 educators discussed research findings, thought-leadership, hands-on experiences, provocations and solutions. This paper provides a summary of the key points and consequent recommendations.

An introduction to the research and its implications

Schools and colleges are investing ever greater proportions of their budgets on edtech tools and initiatives (BESA, 2023), and approximately 75% of schools have introduced new EdTech *since* the pandemic. Approximately 85% of teachers now report using EdTech in daily classroom practice (Teacher Tapp, 2023). In this landscape, teacher confidence has sharply risen – more than doubling since the pandemic, and continuing to rise (OUP, 2022). So it is clear that we now have more technology and digital skills in our classrooms than ever before. But what does that mean for the learners that we are all here to serve?

Today, schools and colleges around the world are using digital technology to improve educational provision for learners. Recent research brings us powerful and persuasive headline findings about impact from schools who are using digital technology in particular ways. At the roundtable, educators discussed different themes surfaced by research findings within their own schools and as shared through research reports and professional discussions. Evidence cited by colleagues included examples where
- school data showed attainment outcomes being better than they have ever been, and in particular closing the disadvantage gap
- school data showed double the rates of progress in learning where class time is used more efficiently
- school data showed attendance going up because learners are highly motivated by what is happening in their classrooms
- schools cited learner self-esteem increasing, in particular for children with SEND, due to greater learner agency
- school data showed behaviour issues and exclusions going down because every learner is meaningfully and purposefully engaged throughout every lesson
- empirical data demonstrated that learners with high levels of need are no longer standing out in classrooms, with dignity embedded in the provision of real-time support.

However, these kinds of impact are not yet consistently seen (UNSECO, 2023) which is in part due to methodological issues concerned with research in this space (Aubrey-Smith & Twining, 2023). Furthermore, as DfE commissioned research shows, the use of digital technology in classrooms remains highly variable with little consistency in terms of investment, priorities or strategic planning (Cooper Gibson, 2022).

Once a minimal level of infrastructure is in place, the variance between those who are seeing a positive impact on learning and those who are not, is directly attributable to differences in pedagogical intentions (Lewin et al., 2019; Barrett et al., 2019). Most notably, whether the focus for digital technology is on teaching and management (which tends not to significantly impact learning), or learning and inclusive practice (where greater impact on learning tends to be seen).

Being clear about pedagogy

Much of the discussion between educators centred around the role of pedagogy. There is now widespread agreement that effective uses of digital technology are underpinned by effective pedagogy (e.g. Aubrey-Smith & Twining, 2023; Cooper-Gibson, 2022; Fawns, 2022; Lewin, 2019). Yet there remains an unresolved debate about what effective pedagogy really means and what it looks like in practice (Twining et al., 2021; Hammond, 2020). This is attributable to the fluid way in which the term pedagogy is currently used by the professional sector to incorporate both a wide range of theoretical perspectives (e.g. Traditional behaviourism through to forms of Constructivism and Sociocultural views), as well as a broad spectrum of politically influenced methods and practices (e.g. robustly evidenced effective learning practices through to populist teaching strategies). Learning organisations as well as individual professionals each attributed subtly different meaning to the word 'pedagogy' when in discussion – a direct result of the influence and interplay of individual value and belief systems (Aubrey-Smith & Twining, 2023). With such a diverse spectrum of interpretation about theory and practice, conclusions about what *effective* pedagogy therefore looks like become more complex and can be seen across the range of examples cited by those attending the roundtable.

Effective Pedagogy exists only when the intentions of the teacher, and internalised meaning on the part of the learner, are aligned. We must see clear evidence of both if we are to justify use of the word 'effective'. Otherwise, we are thinking only about what 'should be', rather than what 'is'.

Effective Pedagogy is more than just Teaching and Learning

Throughout the roundtable, leaders and teachers concluded that strategic discussion needs to take place to shift thinking about digital technologies from intentions (of suppliers, policy makers, leaders and teachers) to a broader reflection about the lived experiences and realities of the learners who it purports to be supporting. Furthermore, that thinking about digital technology use to support learning is addressed in relation to all aspects of pedagogical decision making – recognising that pedagogy is not just about teaching and learning strategies, but underpins decisions about strategic priorities in every school.

A number of educators pointed out that there is a common myth that the use of digital technology can adversely impact test results because its use cannot be transferred to exam or test situations. However, as other educators highlighted, schools which embed digital technology to support learning (rather than to support teaching) have seen increases in attainment rather than decreases. Furthermore, JCQ guidance makes specific provision for digital technology to be used in exam and test situations in both primary and secondary contexts where it can be evidenced as being part of a learner's normal way of working, and where appropriate mitigations are put in place to ensure the robustness of the assessment process (JCQ, 2023). The defining factor is where digital technology is used to support learning as part of a learner's *normal way of working*. This requires a learner (rather than teacher) centred strategic view on the role of digital technology in the classroom – something that many schools talk about, but is not necessarily reflected in practice.

As Selwyn (2019) argues, suppliers, leaders and teachers act as pedagogical gatekeepers for the learners that they work with. Ultimately, every decision made in a school is a pedagogical decision because it affects consequent choices available to teachers and learners. These decisions include core priorities and budget setting, infrastructure and policy, training and resources as well as everyday classroom practice. As educators explored, such gatekeeping determines individual everyday actions, as well as setting the tone for how students see their identity as a learner (e.g. as annual test conformers, or as lifelong curiosity seekers). Importantly, it also demarcates how learners conceptualise the role of others – particularly teachers - around them in relation to their learning (e.g. the teacher as the determiner of right answers, or the teacher as a facilitator of independent learning).

A new form of digital divide

The digital divide was a re-occurring theme at the roundtable, and teachers and middle leaders felt that the differences in the values and beliefs underpinning individual and organisational pedagogy are vital to understand if we are to make progress in using digital technology more meaningfully within schools. As increasingly argued by many worldwide, value-based decisions about the use of digital technologies are creating a new form of digital divide (OUP, 2021). This new digital divide is being created by the decisions made by school leaders and teachers in some schools, compared to the decisions made by leaders and teachers in other classrooms and schools. As educators highlighted, it is creating a gap between (a) learners who are seeing their learning accelerated and enhanced through meaningful, autonomous and impactful uses, and (b) schools who are perpetuating a model where learner potential is determined by the capacity and capital of their teacher.

All those at the roundtable discussed the need for training to address this new form of digital divide – with a focus on deep and meaningful understanding of pedagogically led, impactful, uses of digital technology. Educators felt that it is timely to challenge the aspirations of those in decision-making roles about whether individual or organisational actions are pivoting around: educators, organisations or learners. Furthermore, the extent to which those decisions align with, and deliver on, global ambitions (e.g. UN SDG4, UN Rights of the Child), as well as localised ambitions (e.g. school vision, mission and values). These kinds of discussions surface very practical reflections and challenges which encourage us all to be more precise when planning future teacher professional development in utilising digital technologies to effectively support student learning.

From EdTech to PedTech

There is a global shift taking place, moving away from an *EdTech* mindset whereby digital technology use pivots around organisational processes and efficiencies. Instead, the shift is now towards a *PedTech* mindset, where clear pedagogical intentions define what digital technology is used (if any), how it is used and most importantly why it is used. By focusing on supporting learners and learning, we will see a greater impact on learners and learning.

Educators were energised by discussions that focused on the 4 domains of pedagogy which encouraged reflection on what the implications in 2023 are on:
- what it means 'to be a teacher' and therefore what it means 'to teach'
- what it means 'to be a learner' in 2023 and beyond
- what learning should look like in a post-pandemic, AI-infused world and how schooling relates to learners wider lives and identities
- what we mean by knowledge and who/what defines what it means 'to know' something

It also requires us all to consider how our pedagogical beliefs translate from ideology and discussion, into pedagogical approaches (chosen teaching and learning strategies) and pedagogical practice (individual actions).

In other words, what do we really want learning to look like today in a post-pandemic world – and how can technology support those specific pedagogical intentions? Furthermore, as educators highlighted, what does this mean when we think about post-pandemic learners, what about our reluctant returners and anxious students? What about our neurodiverse learners and those with special educational needs or disabilities? What about students who bring with them different forms of diversity, culture, language, creativity, new identities and challenge? What about learners who are already high attainers and ambitious for more, or for learners who are struggling, overwhelmed or traumatised? As every good teacher believes, these learners *all* matter, and as empirical evidence increasingly demonstrates, we can support them using the many tools that we now have at our fingertips *if* we choose tools which are in alignment with our pedagogical intentions and which are informed by clear and robust evidence (see Aubrey-Smith & Twining, 2023).

But we will only meaningfully support our learners if our actions are underpinned by precise and thoughtful pedagogical intentions.

As Professor John Hattie's research tells us
> *"If teachers and leaders are able to choose tools that help them to be the teacher or leader that they want to be, then both the tool and the person become more effective, and that leads us to greater collective efficacy, which we know trebles the impact on student achievement"* (Hattie, 2023).

The significance of strategic pedagogical alignment

As research by Twining et al., (2017) demonstrates, the use of digital technology magnifies existing practice and pedagogical intentions. This was an important finding shared at the roundtable because it highlights the significance of organisational pedagogical intentions being framed around either (a) the operational organisation itself, (b) teachers and teaching, or (c) learners and learning. Pedagogy is not just about teaching and learning, but about the deeper values and beliefs about the purposes of education and the roles of those who live and work within it. These define what is valued and prioritised across the school community (Aubrey-Smith & Twining, 2023).

There are many schools and groups of schools who have already made clear strategic decisions about the role that they wish digital technology to play within their organisation. Regardless of the specific products used, there are three trends emerging which echo the distinction above;
1) **Operationally-led strategies** (prioritising access, communication, management, resourcing and the flow or publication of information by or between teachers and leaders)
2) **Teaching-led strategies** (prioritising the sharing of planning, lesson resources, marking and feedback, home/school communications, assessment and progress data)
3) **Learning-led strategies** (prioritising agency and autonomous access to tools, material and resources which remove barriers learning - including teacher capacity).

Underpinning each of these sits a digital ecosystem – an infrastructure set in place in order to facilitate organisational strategies for the use of digital technology (Wraithmell, 2021). As highlighted by presentation and discussion, this includes Information Systems, Integrated Access, IT and Network infrastructure, Safeguarding and Cyber Security, Classroom Applications, Devices, Connectivity and Governance (Lange, 2023). These are vital foundational building blocks for the safe and successful embedding of digital technology to support teaching and learning, but should not become in themselves the focal point of an organisational digital strategy (Parmar, 2023).

As discussed by educators, the greatest impact on learners and learning is seen where the organisational strategies are framed around learners and learning. This should be of no surprise, yet the permeating narrative in relation to digital technology remains around strategies which focus on operations and/or teaching. It was felt that this must change if we are to see greater impact on learners and learning both short and longer term, and a much better return on investment – both financially, and in terms of workload across the profession.

The Impact of a PedTech approach

As set out above, a PedTech approach utilises digital technology (EdTech) but only when informed and led by clear and evidence informed pedagogical intentions. There are many examples, both nationally and globally, of the impact that this has on all aspects of school life – and these are increasingly being seen at scale, and across a wide variety of products, devices and ecosystems.

Three examples shared in detail at the roundtable are set out below in summary (full version available at https://my.chartered.college/event/the-future-of-digital-technology-in-education/)

The LEO Academy Trust, a MAT of 9 schools, have a fully embedded and integrated Google ecosystem supported by a 1:1 programme (LEO, 2023). At the heart of this provision, the teaching and learning strategy is driven by research evidence which pivots around supporting children as independent, autonomous and contemporary learners. Real-time, whole-class, formative assessment tools empower teachers to provide instant data-informed adaptive and responsive teaching. Progress and attainment are consequently well above average and in the top 3% of schools nationally (DfE, 2023). Inclusive practice is fully embedded such that every child has real-time access to scaffolds and support at the point of need, and children identified as being disadvantaged attain equally well, and often higher than others nationally (Ofsted, 2019).
(Impact report at https://www.leoacademytrust.co.uk/2801/pedtech-impact-report)

Oasis Community Learning, a MAT of 52 schools, distributed 32,000 iPads across their primary and secondary aged learners as part of their Horizons project (Oasis, 2023a). With most of the Oasis schools located in areas of significant disadvantage, this 1:1 programme set out a new and highly ambitious curriculum in conjunction with online anytime/anywhere access to learning for every single child. The impact trust-wide is significant, with 2023 results showing that whilst Oasis schools have over double the national average of children facing disadvantage (29% v 61%), the attainment outcomes are nearly 10% higher (Oasis, 2023b).
(Detail about Horizons at https://www.oasiscommunitylearning.org/education/oasis-horizons)

The Cornerstone Academy Trust, a MAT with four campuses have a fully embedded and integrated Microsoft ecosystem (TCAT, 2023). Combining innovative learning spaces such as a Year 6 lecture theatre for 120 children, with specialist teaching and a 1:1 device programme, learning is highly personalised, and described by Ofsted (2022) as exceptional. At the heart of this provision is the use of digital technology to provide learners with access to individualised, progressive, and supported experiences – meaning that barriers are removed for all children. This takes place partly through the use of Microsoft Teams, Assignments, Reading Coach and One Note – giving children real-time access to targeted teaching and targeted learning support materials, and partly through embedded inclusive practice – for example, the use of dictate features, digital inking, live rubrics and video-call mentor support. (Case study film at https://tcat.education/)

Recommendations

During the roundtable discussion focus groups surfaced a wide range of ideas with some core underlying principles that ran across themes concerned with leadership, teaching and learning, assessment and research. These included that:

(1) Those shaping research and policy concerned with digital technology – both locally and nationally – should make a distinction between:

    a. **Operationally-led strategies** (prioritising infrastructure, access, communication, management, resourcing and the flow or publication of information by or between teachers and leaders). *These are likely to support accountability and workload efficiencies.*

    b. **Teaching-led strategies** (prioritising the sharing of planning, creation and distribution of lesson resources and materials, marking and feedback, home/school communications, assessment and progress data). *These are likely to support accountability and impact workload efficiencies.*

    c. **Learning-led strategies** (prioritising autonomous on-demand access to tools and resources at the point of need; removing individual barriers to learning and assessment). *These are likely to impact learners, learning, and learning outcomes).*

(2) Policy shapers, researchers, school leaders and teachers should hold each other to account for shifting towards, and then maintaining, a focus on learners and learning when thinking, talking or writing about the use of digital technology in schools and colleges. A culture shift that moves from discussion about EdTech (the 'what' and the 'how' - framed around tools) to PedTech (the 'why' – framed around pedagogical intentions) requires us all to play our part. Our collective priority across the school sector must be keeping children and young people as the focus of every decision made.

(3) The significant impact on progress, attainment and dignity seen as a result of embedded inclusive practice in schools should be scaled up through national leadership and support. An on-demand mindset (which does not *necessarily* require a 1:1 device ecosystem) that allows learners to access and utilise accessibility features offered by digital technology should be encouraged and enabled in everyday classroom practice as well as at points of informal and formal assessment.

Further information

An agenda and film of the roundtable can be found at https://my.chartered.college/event/the-future-of-digital-technology-in-education/

For more about the Worshipful Company of Educators visit https://educatorscompany.org/
For more about the Chartered College of Teaching visit https://chartered.college/

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