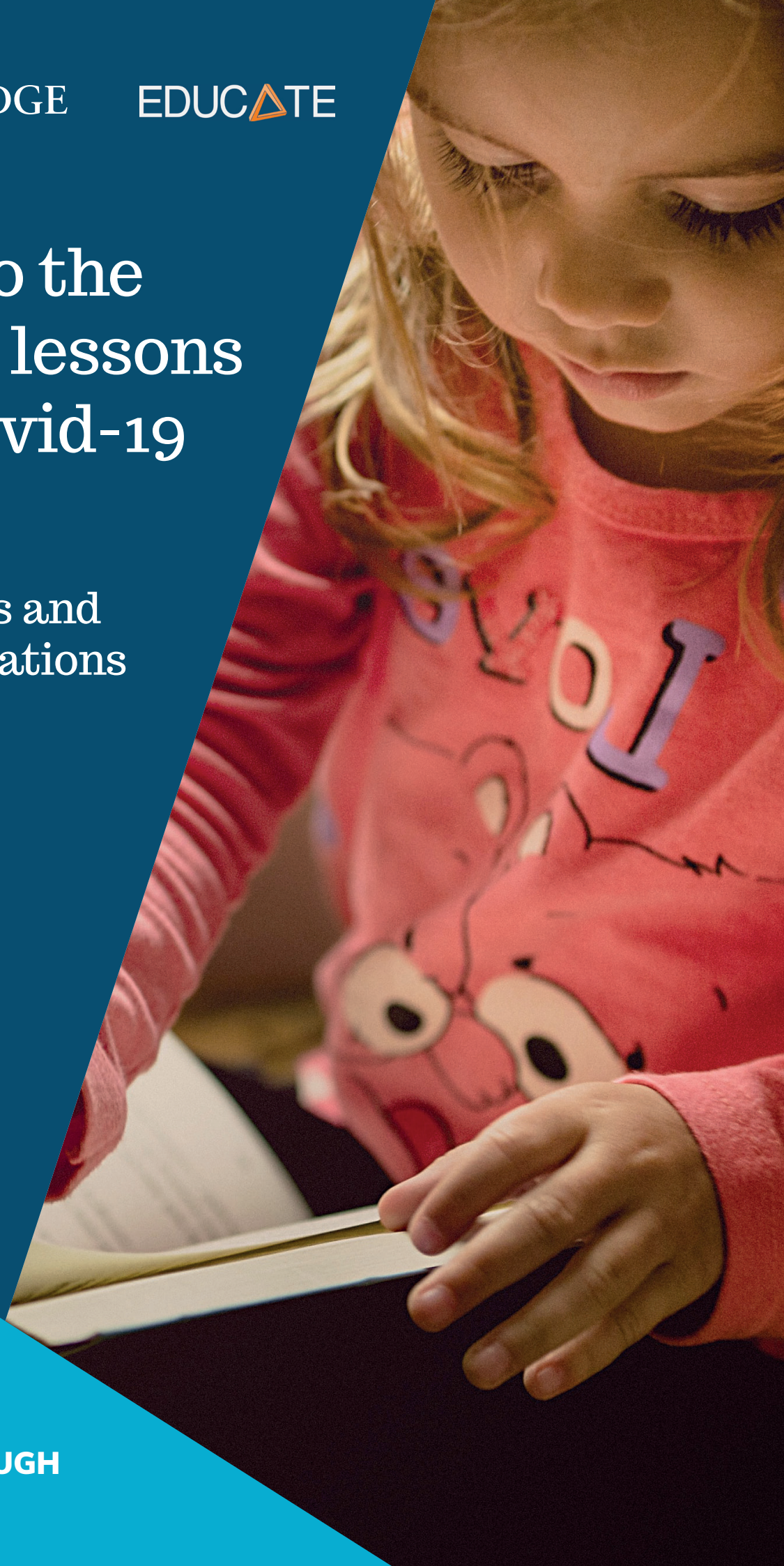
CAMBRIDGE EDUCATE

Shock to the system: lessons from Covid-19

Volume 1: Implications and recommendations



TRANSFORMING SOCIETIES THROUGH EDUCATION

Introduction

This report presents the ways in which educational technology can best be used to support teaching and learning for school-aged pupils, particularly when traditional education is disrupted. The work we report here is unique in its synthesis of the multiple voices that contribute to the education ecosystem. It is pragmatic and future facing, with an emphasis upon progress, not just 'getting through' and returning to the status quo.

There is much to learn from the educational disruption caused by Covid-19. To maximise learning, it is vital that the *entire education ecosystem* is examined, and not just one part of that ecosystem in isolation, such as schools or parents. The education ecosystem is made up of a diverse set of interacting individuals in communities and sub-communities, all contributing from different perspectives, using physical, economical, regulatory and pedagogical infrastructures, and mostly operating under a shared goal: to make our society better. Like all ecosystems, by definition, the education ecosystem relies on strong connections *between* and *within* its communities, but all too often, these communities and their members are unconnected, or not connected enough.

In this report, we present recommendations and practical guidance for educators, leaders, parents and policymakers to help build a better connected, more effective, self-supporting ecosystem. The recommendations and guidance draw on expertise, experience and a rich supply of new data and information about the impact of the Covid-19 pandemic on school education. The threads that we pull together are drawn from a rich data set collected across the months of disruption in 2020 from the key stakeholders in the education ecosystem: teachers, parents, educational leaders and EdTech companies. This new data is complemented by findings from existing academic literature, as well as research reports and analyses from others about what happened during 2020 when many schools across the world were closed, and technology became a learning lifeline for many young people.

We focus specifically on the situation in the United Kingdom and upon the English education system. However, the findings from our research will resonate with educational stakeholders across many different countries who face some of the same challenges when they are required to provide continuous, high-quality education, no matter what disruptions are thrown their way.

There is much of which education stakeholders should be proud. Education did take place for many, many students often in almost impossible situations, with conflicting constraints and a high number of unknown factors. Communities came together, often informally, to share their learning and support each other, and rapidly scaled up their expertise and capability.

Our report is published in two volumes. Volume 1, which follows on from this introduction, includes: an executive summary; a set of recommendations; commentaries from expert representatives; from the educational technology sector; and a narrative of the implications we have drawn from the data and research we have analysed. In the Appendix to this first volume you will find a range of invaluable practical guidance.

Volume 2 contains the data and evidence upon which this first volume is based, plus an explanation of the methodology we adopted.

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Executive summary

The data and evidence that we analysed, synthesised and that we present here illustrate the problems that occur when the education ecosystem is disconnected, and resulting in reduced functionality. The ecosystem we refer to is at a national level, and made up of *communities* and *sub-communities* of members.

Our findings are presented from the perspective of the role of educational technology (EdTech), which has provided a vital learning lifeline for many pupils. We demonstrate the areas of the education ecosystem that were compromised when face-to-face schooling broke down, and the ecosystem had to rapidly reconfigure. We report on the relationships and communication between key communities: teachers, leaders, parents, policymakers, researchers, technology developers and governments, and about the integrity of the inter-connections *within* each community and sub-community.

This is a story about disconnection and missed opportunities, of existing weaknesses leading to breakdowns. But it is also a story of resilience and of great opportunity for rapid improvement. Following this executive summary of findings, we present a series of recommendations that focus on how best to strengthen the education ecosystem for the future.

Key findings

- Too little attention was paid to the education ecosystem, in its entirety, when schools closed to the majority of pupils.
- Ineffective connections and communications between communities, such as between government and school leaders, compromised the integrity of the whole ecosystem and disabled it from being self-supporting.[1]

Not all members of the education ecosystem experienced and dealt with the pandemic disruption in the same way. Studying the differences in the support systems they used, the educational opportunities they identified and the concerns they reported, enabled us to identify five distinct personas for whom different recommendations and support needs to be provided: Aeronauts, Earth Movers, Fire Tamers, Water Pilots and Space Seekers.[2]

Poor connections between communities

Research and education

- There was little connection between existing research evidence and educational practice. Decades of research into online learning that could have helped schools to implement a sound pedagogical infrastructure was largely absent from Remote Emergency Teaching (RET).[3]
- Inappropriate conclusions about the value of online learning are now being drawn on the basis of RET, without reference to the huge wealth of available relevant research.[4]

Research and EdTech

- EdTech companies sought to learn more about their customers as the restrictions on school operations continued. By autumn 2020, only 10% of companies reported that they were not collecting any data, down from 30% at the beginning of lockdown.[5]
- However, the data collected by companies was mainly in the form of interviews with users, which increased from 4% in April to more than 50% in autumn 2020. Interviews are important, but time-consuming; more efficient methods for use in a crisis would be log data, and yet the use of this method decreased 32% in autumn 2020, as did the number of companies reporting changes based on the evidence they had collected, which dropped from 57% in May, to 46% in autumn 2020.[6]

‘This is a story about disconnection and missed opportunities, of existing weaknesses leading to breakdowns. But it is also a story of resilience and of great opportunity for rapid improvement.’

Poorly understood concerns

- An ecosystem should, by its very definition, support itself, but this was greatly compromised as a result of the concerns, anxieties, confidence and optimism felt by one community not being accurately understood by the others.
- Falling behind and learning loss have understandably received much attention, but this was not the main concern for all people. The biggest challenge, according to our survey’s respondents, was work–life balance (38%), followed by concerns about students ‘falling behind’ (33%) and confusing messages and guidelines from the government (28%).[7]
- In April and June 2020, the most pressing concern for EdTech companies was paying rent on company premises (rated 5 out of 10). By autumn 2020, this changed to having recruited too many customers for companies to be able to serve them effectively (also rated 5 out of 10).[8]
- The main worry for the parents of older children was the return to school in September 2020. Parents of younger children were more concerned about childcare than learning loss.[9]
- Falling behind was a ‘big’ or ‘quite a big’ concern for 77% of single parents, but for only 54% of non-single parents. Fifty-nine per cent of single parents had financial concerns, but these were shared by just 16% of non-single parents.[10]
- Parents of children with Special Educational Needs (SEN, or SEND – including Disabilities) were particularly disadvantaged. Sixty-eight per cent found home learning very challenging. Only 28% agreed that their child’s educational placement had provided ‘very good’ support, and 40% felt they received no support from educational or other agencies.[11]
- The number of EdTech companies feeling optimistic about the prospects for the EdTech sector dropped from 89% to 69% between May and September. However, their feelings of optimism about their own future increased from 26% to 49% over the same period.[12]
- General feelings of positivity declined from April to July across the English educational ecosystem. Similarly, optimism about how it would cope in the new school year declined as September approached.[13]

Good connections between communities, schools and parents

- Parents who felt that communication from school leadership was clear were *ten times more likely to feel confident* about their school's handling of the disruption than parents who did not feel this communication was clear.[14]

Schools and EdTech

- Communication between EdTech companies and schools improved and impacted positively on communication between other communities, such as educators, leaders and parents.
- EdTech companies started to be seen as organisations who were there to help: over 60% of companies reported offering free technologies. All educational leaders, a third of the teachers and almost half of the parents reported using or recommending free technologies to others.[15]
- EdTech companies made changes to products or services as a result of lockdown, such as moving their product online, adding functionality to support home learning or providing support specific to Covid-19 restrictions, such as social distancing.[16]
- Educational leaders (74%), teachers (81%) and parents (68%) reported using or recommending technologies they had not used before.[17] All engaged in trying new technologies.
- The appetite for new technology from educators and parents coincides with companies changing and introducing new products and/or services. For example, Zoom made changes to its video conferencing products and practices to enable it to give more support to the educational ecosystem.

Building a self-supporting ecosystem

- Teachers adapted to the pandemic remarkably quickly and supported each other. As one reported:

  > 'As soon as someone learned how to do something, we would then share it with everybody else. So... we had some very basic training, and then we shared it. It was just learning together and helping each other.'[18]

- More than 30% of headteachers, teachers and parents felt supported by colleagues and school leaders, while less than 2.5% felt supported by the government. More educational leaders and parents than teachers felt that nobody was supporting them.[19]
- EdTech companies said colleagues were the most common form of support (73%); 57% said they relied on family for support, and 59% on their managers.[20]
- There is a correlation between *people enjoying remote education and being confident about sustaining it, and people feeling positive and supported by colleagues and family members*.[21]
- Collaboration is important for adults and students. There was a significant correlation between *educators feeling positive*, and *their reports of using technology to support collaboration amongst their students*.[22]
- Fifty-four per cent of respondents believed there was an opportunity to improve the use of technology for learning.[23]

Barriers and challenges within the education ecosystem

- Educators were aware that provision needed to be more interactive and efficient, but they were hindered by a disparity in technical infrastructure between different types of school. Seventy-one per cent of state school children received either no daily online lessons, or less than one. Thirty-one per cent of private schools provided four or more live online lessons daily, as compared with just 6% in state schools.[24]
- In the first month of lockdown, students in private schools were twice as likely to access online lessons daily, compared to those in state schools.[25]

- The overall level of deprivation of the school has more influence on learner engagement than the level of deprivation of individual students. Ninety-six per cent of students who attend advantaged schools in the UK reported having a computer for schoolwork at home. However, only 88% of students in disadvantaged schools reported that they also had a computer at home for schoolwork.[26]
- Teachers from disadvantaged schools reported that more than a third of their class would not have adequate access to technology. Twenty-one per cent of teachers in state schools reported that their school is providing pupils with laptops or other devices to mitigate inequality gaps (secondary 31%, and primary 11%). However, affluent schools were still able to provide more laptops than disadvantaged schools (28%, compared to 15%).[27]
- There were significant problems in communication between government and other communities. In the wake of the cancellation of exams, concerns about the school assessment regime increased, which gave rise to a new wave of resistance, such as the *Rethinking Assessment* movement.
- The lack of communication and effective direction from the Department for Education left headteachers confused, forcing them to make decisions based on what they felt was insufficient advice and incomplete guidelines. One leader remarked:

  > *'I know there are points at which I get more guidance, and I physically look at it, I can't even bring myself to open it right now. Because you just get saturated with it.'*[28]

- The dysfunction within education in the wake of the Covid-19 pandemic is driving more parents to opt out of school altogether. A third of the schools visited by Ofsted during October reported an increase in the number of pupils not attending school or leaving to be home educated.[29]
- Trust between technology companies and the education ecosystem was weakened when companies rushed to get schools online without considering safeguarding issues, which is of paramount importance for the majority of educators we interviewed.[30]

Ten policy recommendations: Connect and diversify support to reduce inequalities

Connect

1. The evidence summarised in this review suggests that providing continuous, high-quality school education in times of disruption requires that we ***shift the focus of attention to the entire education ecosystem***, as opposed to its constituent parts.
2. The urgent need for ***better communication and connection between and within the different communities that make up the English education ecosystem*** must be addressed, to avoid a decrease in the system's ability to provide appropriate education for all schools.
3. ***Apply four simple steps to speedily and easily improve government communications with the educational community***: highlight the changes to all documents that are re-released; clarify explicitly between what is guidance and what is regulation; steer clear of conflicting information unless unavoidable, in which case state that change is essential and explain why; avoid issuing communications outside of the normal working day unless absolutely vital.
4. Pool the combined wisdom of the UK's globally leading science, innovation and education expertise to create a public/private partnership and ***develop a national digital data infrastructure built on shared open interoperability standards and governed impartially***. This would enable personalised support and the highest levels of privacy and security, and secure the long-term future of the education system.
5. ***Prioritise, encourage and resource the creation of online communities for teachers*** to be able to share their insights, concerns and experience (for practical guidance, see the Appendix to this volume).

Diversify support

1. ***Focus on ensuring reliable, high-quality technical training and support infrastructure to capitalise on the enthusiasm around technology.*** This includes fit-for-purpose personal devices for every learner, reliable broadband, as well as training and wellbeing support for teachers and learners. This is essential for building a foundation that will minimise the growing inequalities.
2. ***Provide practical short-term support and a long-term vision.*** Leverage freely available tools[31] to help teachers integrate educational technology into their practices, focusing on components that are central to online learning, such as content and media type, engagement, assessment, analytics and collaborative learning. The five personas presented in this report – Aeronauts, Earth Movers, Fire Tamers, Water Pilots and Space Seekers – offer a simple initial framework for the rapid deployment of ***essential contextualised training and support*** to build skills and expertise amongst educators, parents, students and leaders to enable them to leverage technology for learning.
3. ***Recognise and value the diversity of the education ecosystem***. Evidence suggests failure to do this will increase the misalignment between people's needs and the available provision, and could cause the education ecosystem to collapse.
4. ***Use the significant advances in digital technology suitable for children who have Special Educational Needs and/or Disabilities (SENDs)*** to vastly improve their particularly poor experiences during the Covid-19 lockdown disruption.
5. Reduce the reliance on ***attendance as a proxy for education and learning, and move towards recognising the benefits of viewing engagement in learning*** as the real signifier of educational progress. An effective online learning infrastructure that enables seamless learning, regardless of the student's physical location, will provide the foundation for this.

Implications and commentaries: What the data tells us

As the Covid-19 pandemic restrictions came into force in March 2020, teachers' confidence in their ability to teach remotely ranged from 42% to 64%, with the most confident teachers working in the independent sector, where students come from higher socio-economic backgrounds. By August 2020, technology was being used in schools to support remote education. The education sector was changing, and teachers, leaders and parents were all keen to know how to educate the nation when the vast majority of pupils were not attending school.

The education ecosystem is greater than the sum of its parts

For far too many years, there has been a disconnect between the individual facets of the education system that support the effective use of technology. The people who use the technology – teachers, learners and parents – are not connected with the technology developers well enough to enable an understanding of the real challenges faced. Neither the educators, learners or parents, nor the technology companies themselves, are sufficiently acquainted with the educational community in a way that will help them understand the workings of this technology. It is this lack of understanding that underpins many of the problems that arose during lockdown, and it is only through focusing on the educational ecosystem, through building and supporting its inter-connections, that we can nurture its resilience. The government has a responsibility to provide a supportive environment in which the communities, sub-communities, and the members thereof, can thrive.

The EDUCATE programme was set up in London in 2017 to support the EdTech ecosystem (a sub-part of the education ecosystem). Its aim was to bring together three key communities: the people who *use* the technology, the people who *build* the technology, and the people who *understand how the technology can be used*, all need to work together. The concept of the Golden Triangle[32] was introduced as a grounding metaphor for the effective collaboration and coordinated action of the community towards EdTech products that are rigorously developed based on evidence and a deep understanding of the real-world context of learning (see Figure 1).

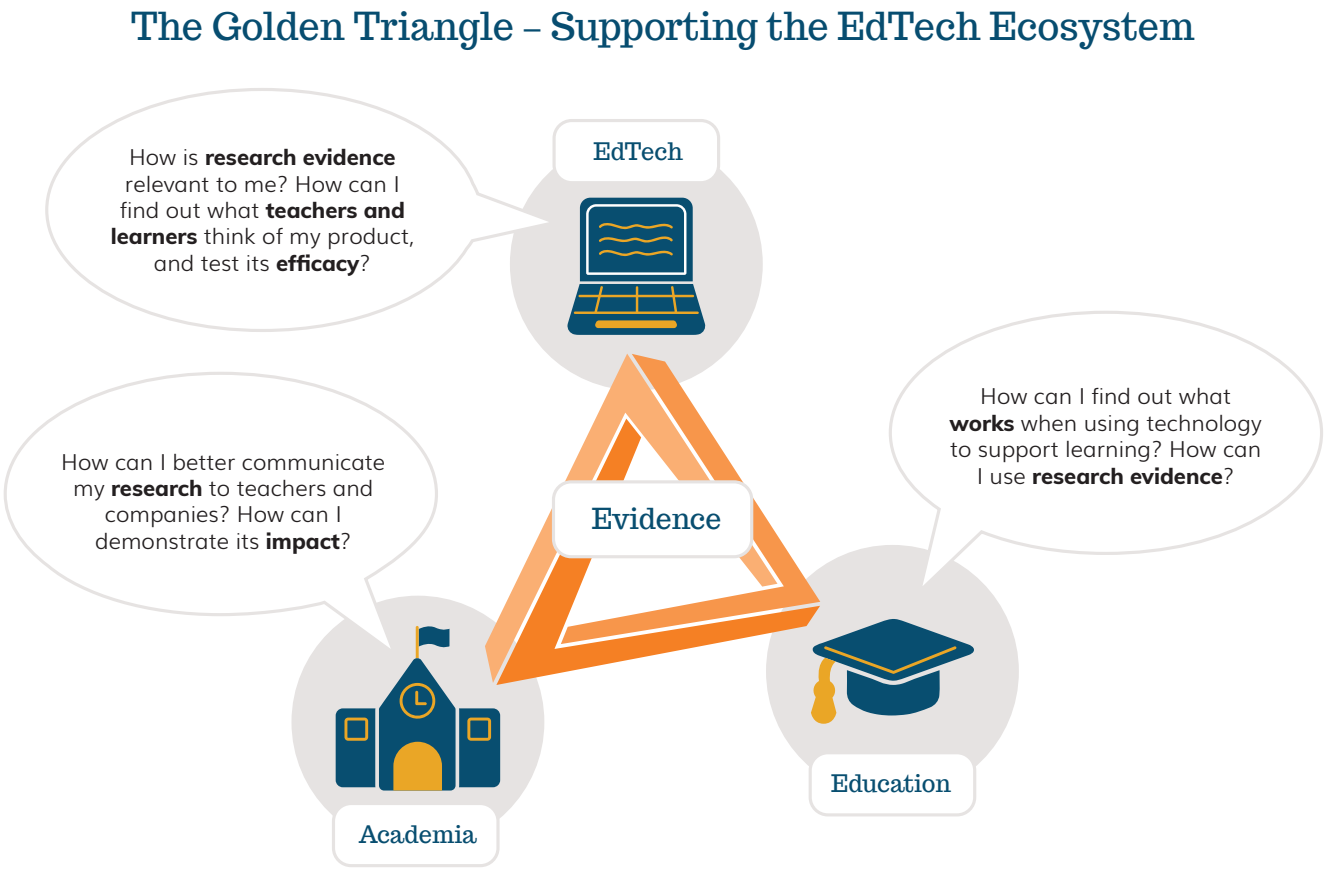

Figure 1: The EDUCATE Golden Triangle

The education ecosystem is rich and diverse

The diversity of any ecosystem is vital to both its survival and prosperity. Likewise, the situation with the education ecosystem is enriched by the diversity of the communities and individuals that make up its membership. It is essential that the diversity of membership is recognised in any attempt to provide support, guidance and regulation. However, the evidence we present in this report suggests that often, diverse communities are treated as if they were uniform. The key question here is to find a way to differentiate the way communications, guidance, help and assistance is provided to the different parts of the education ecosystem.

Research into school leadership – a vital factor for the implementation of information and communication technology (ICT) in schools – offers a useful way forward. Each school principal's leadership style can be characterised through a 'leadership style' framework.[33] For example, a principal might be characterised as having an 'affiliative' style and a 'people come first' approach. Alternatively, a principal may emphasise high standards for performance through a 'pacesetting leadership style'. The responsibility and pressure of the pandemic on school leaders is evident in the data presented in this report, and preparation and training for school leaders is critical in order to assist them in their handling of such emergencies. However, all communities and education ecosystem members are required to support student learning to a lesser or greater extent, and all need appropriate provision.

We analysed the data we collected from educational leaders, teachers, parents and governors through our surveys and identified five personas,[34] as illustrated in Figures 2 to 6.

The survey responses suggest that the key differentiators between communities were those that concerned:

1. the *support systems* respondents reported using;
2. the main educational *opportunities* respondents identified as arising from the pandemic; and
3. the main *concerns* stakeholders reported facing in the context of school education.

These personas are therefore a useful basis upon which the different training and support needs can be identified for each persona sub-community. They are classified as follows.

Aeronauts

Members of this community are ready to become more strategic with respect to online learning, and applying EdTech in general. They would benefit from guidance about how to build and implement their EdTech strategy building on evidence-based pedagogies. Educational leaders and teachers in this community would be good at taking part in school demonstrators, and good at working with EdTech companies and educational researchers. They could be paired to less well-developed schools in a 'buddy' system.

*Aeronauts comprise slightly more of **independent school** than **state school** members.*

*There are slightly more **secondary school** than **primary school** members.*

Figure 2: Aeronauts

Aeronauts are ready to fly and relish trying new things and learning. They feel well-supported, optimistic and recognise the value of technology to help learners reach for the sky.

Earth Movers

Members of this community would benefit from some mentoring from more able colleagues, for example Aeronauts, who can show them the value that technology can bring to education. Some basic training and very pragmatic, focused EdTech support would be invaluable. The focus should be on the technology applications with which members of this community are already familiar, in order to build confidence – such as designing good activities for students to download, basic communication tools, recording lessons and providing student feedback digitally. In particular, students' emotional wellbeing needs should be emphasised within this training and support. Establishing an online community for headteachers, teachers and parents would also be valuable to share experiences and develop peer support networks.

*There are more **independent school** than **state school** stakeholders in this group.*

*There are more **primary school** than **secondary school** Earth Movers.*

Figure 3: Earth Movers

Earth Movers are focused on the pedagogical grounding. They are keen to develop the infrastucture that supports schools, and are keen to promote well-being and communications.

Fire Tamers

This is a community of members who are ready for a substantial intervention to help them build an initial technology and skills infrastructure. We would advise guiding them to a beginner-style 101 technology strategy that starts with an audit of their skills and ICT readiness. For example, this audit could provide an initial diagnostic process that would enable a context-sensitive profile for each school to be specified along with a short-term, simple and pragmatic strategy for online learning to include continued professional development (CPD). A focus on a small set of tools across each school community (such as a learning management system, or LMS), accompanied by support for teachers to experiment with subject- and pedagogy-specific technology, would be wise. Leaders, teachers and any IT support staff should be encouraged to join in and participate in online, knowledge-sharing communities (see the EDUCATE for Schools section, below).

Fire Tamers are the largest group. They put their energy into tackling the challenges that get in the way of learning. Give them the right tools, support and resources and they will shine brightly!

*This group has more **state school** than **independent school** members.*

*There are more **secondary school** members than **primary school** ones.*

Figure 4: Fire Tamers

Water Pilots

Water Pilots recognise the value of technology and are not worried about infrastructure inadequacies. They are keen to develop their professional expertise, but lack confidence and did not enjoy remote education. The Water Pilots reported the highest use of live and recorded lessons and therefore it would be great for them to widen their repertoire and develop an innovation-led pedagogy experimentation environment. The types of support we advise for this community are:

1. Training to expose them to EdTechs who can support asynchronous teaching. This would lessen some of the live teaching workloads and to better support teaching across different time zones.
2. Training on collaborative and social learning. The evidence of this impact would be valuable for this community who can showcase collaborative learning technologies and set up a knowledge-sharing community of practice for other leaders, teachers and parents.

Water Pilots smoothly sail through turbulent waters to steer around obstacles. When they land they are ready to dry off and get tech-savvy.

*Water Pilots are mostly from **independent schools**.*

*More or less evenly spreadsy between **primary** and **secondary schools**.*

Figure 5: Water Pilots

Space Seekers

Communication with parents and support for student wellbeing needs are a focus for this community's attention. Members of the Space Seekers community are worried about students falling behind, work–life balance, and confusing messages from the government. They lack confidence and do not feel supported. They would therefore need a very gentle and supportive approach. We recommend the provision of a substantial assistance scheme for headteachers, including resources and support to build their confidence in their leadership to enable them to develop a simple short-term strategy around a small, very basic set of EdTech. For example, for primary schools this might include educational technology that support SATS or phonics tests revisions.

Space Seekers are constantly looking for the right learning space for each child. They do their jobs well and once they've mastered the basics, will use technology to deliver effective learning for students.

*Slightly more **independent school** stakeholders than **state school**.*

*Space Seekers are mostly from **primary schools**.*

Figure 6: Space Seekers

EDUCATE for Schools[35]

Schools need to:

1. Understand their own needs:
   - Look at the priorities in the school/ departmental development plan.
   - Involve teachers, other staff, parents, learners.
   - Identify the gaps or issues in your school development plan or curriculum that could be addressed by technology.
2. Conduct an inventory:
   - What software is already deployed and used?
   - How much does it cost you?
   - What hardware do you have?
   - What skills and skills gaps can you spot in your staff?
3. Ask for evidence:
   - What evidence does the supplier have that their product actually helps you achieve your required educational outcome?
   - In which context was this evidence collected? Is this context similar to your school's context?
   - How long do you have to use the EdTech for in order to see the advertised outcomes?
4. Try before you buy:
   - You may also want to pilot EdTechs you already have that aren't being implemented by enough staff.
   - Make sure you ask exactly what data will be collected by the EdTech, where this data is stored, who can access it and for what purpose.
5. Learn from the data:
   - What does the EdTech provider do with the data collected from your deployment? What do they do with the findings?
   - Will you purchase the product?
   - How can pilot data inform implementation across the school?

There are damaging disconnects within the ecosystem

Remote Emergency Teaching is not the same as online learning

When schools adopted Remote Emergency Teaching (RET) upon being faced with school closures and restrictions, there was little connection between what happened in practice to the findings from the years of research that has been conducted into what works well when teaching and learning are taking place online.

Without the appropriate pedagogical and physical infrastructure in place, RET included mirroring classroom practices in online teaching and requiring students to interact with an LMS to which paper-based assignments were uploaded. We know from years of research that these are not found amongst the more effective methods of online teaching and learning.

The implications of RET for the long term are worrying. Many educational stakeholders are still drawing conclusions about the potential effectiveness of online learning from their experience of RET, and drawing unfounded conclusions, such as those illustrated on Twitter.[36]

'Learning cannot be remote. But it can take place online. Like the best classroom teaching, it is the result of a skilfully designed combination of co-constructed content, context, creativity, collaboration, and communication in a community supported by caring, capable, confident and compassionate teachers.'

In particular, there was a lack of feedback from teachers to students.[37] Research by Parent Ping shows that 51% of primary school students received no feedback at all, and more than 40% of secondary school students did not receive personalised written feedback from their teachers during lockdown RET.

As lockdown extended, more pre-recorded lessons and some live lessons were provided. Live lessons were far more prevalent in the independent sector than its state counterpart. State schools faced significant challenges: some of their students lacked access to technology or an internet connection, while many schools lacked the requisite resources and infrastructure.

Teachers were providing face-to-face lessons for the children of key workers, those on Free School Meals or with SEND requirements, as well as remotely educating all students who were at home. The extent of online lessons provision in state schools was minimal: 71% of state school children received no or less than one daily online lesson. 31% of private schools provided four or more live online lessons daily, as compared with just 6% in state schools.[38]

In the first month of lockdown, students in private schools were twice as likely to access online lessons daily as compared to those in state schools.[39]

This disparity in provision was supported in the interviews we conducted with teachers and school leaders, who were aware from having spoken to the local community of the disparity in teaching and technology between the state and the private sector.

Educators were aware that provision needed to be more interactive and more efficient. Teacher skills and confidence in their use of technology had improved, and most teachers reported being more aware of what technology could do for their students. And yet, a TeacherTapp survey conducted on 20 July 2020 indicated a clear preference for teaching in school, with 69% of teachers selecting this option.

The gap between Remote Emergency Teaching and effective online learning

Bob Harrison

Bob Harrison has been involved in Education for almost 50 years as a teacher, lecturer, principal, governor, and government adviser. He was Toshiba's Education Adviser for Northern Europe. He is currently Visiting Professor of Education at Wolverhampton University.

As I judge the entries for the Learning Reimagined Awards – celebrating the most innovative and inspirational uses of technology for learning around the world – I couldn't help but reflect how incredibly quaint and outdated the entries make DfE efforts look. I look at the latter, and want to reach for the remote control. The Oxford English Dictionary's definitions of 'remote' all lead to the realisation that the Department for Education, with its *Example Lessons for Remote Teaching*,[40] doesn't have the remotest clue about technology for learning.

Its first definition of remote reads: '(of a place) situated far from the main centres of population; distant'. In the context of a second pandemic wave disproportionately affecting the North, it's a perfect description of where the DfE has left itself with that attitude. They are worlds away from school leaders' and teachers' concerns about how children learn, and how to ensure fair and responsive assessment systems amid the disruption.

A further definition reads: 'having very little connection with or relationship to'. It is spot-on for the notions of so-called remote learning espoused by the department. Many trailblazing schools and colleges made technology integral to their learning and teaching years ago. Thoroughly inclusive, they ensured all learners had access to technology and online learning.

Example lessons for Remote Emergency Teaching[41] is at least honest enough to admit the DfE are not in the business of online learning. Broadcasting talking-heads, it seems, is engagement enough.

It is not.

Recent research from the Education Endowment Foundation (EEF) offers a more constructive view about effective digital learning. The main finding of their meta-analysis is that the crucial factor – whether face-to-face, online or in a blended model – is the quality of teaching. But online teaching demands a different skill set in order to translate into online learning.

It's unclear who is setting out what this skillset is. And in the meantime, we are left with a raft of confused terms – remote education, remote schooling, remote teaching, remote learning – all used synonymously. So let me attempt to offer some clarity.

For '**remote education**', read: a system that is not related to the needs or contexts of learners.

For '**remote schooling**', read: individual learners singing (or not) *Land of Hope and Glory* to their laptops, led by an archbishop.

For '**remote teaching**', read: Oak National Academy or, talking heads broadcasting lessons to passive screensavers.

For '**remote learning**', read: a convenient myth.

Learning cannot be remote. But it can take place online. Like the best classroom teaching, it is the result of a skilfully designed combination of co-constructed content, context, creativity, collaboration, and communication in a community supported by caring, capable, confident and compassionate teachers.

And there's nothing at all about that!

Assessment needs rethinking

When exams were cancelled due to the pandemic, and a great deal of confusion and concern followed the use of an algorithm to decide on exam grades,[42] public trust in the way the government was handling education declined[43] and concerns about the school assessment regime gave rise to new calls for change, such as the rethinking assessment movement.[44]

Debates and commentary about the future of assessment are not new and are extremely complex. Issues of accountability, fairness, and the technical quality of assessment remain entangled, and must be understood clearly in any rethinking of assessment. The pandemic has precipitated a new energy for and desire to explore this complexity and find new ways forward that can take advantage of what EdTech has to offer.

High quality online tools offer new possibilities for learning and assessment that is interactive as well as socially and cognitively engaging. These technologies are also capable of tracking performance over time aiding formative assessment as well as supporting summative assessment processes. However, the possibilities afforded by these technologies do not displace the need for excellence, rigour and accountability. The data that can be collected, collated and processed through the gateway of technology needs to increase the validity and accountability of assessment, not reduce it.

The need to rethink assessment

Dr Sue Swaffield

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The impact of Covid-19 on young people's learning and prospects brings the long-standing need to rethink assessment into sharp focus. This year's cancellation of national examinations, and the necessarily rapid implementation of alternative systems for awarding qualifications, exposed the realities, weaknesses and challenges of examination systems. Issues of equity and fairness rightly loomed large. A subsequent major change to England's high-stakes assessment system already announced is government's welcome intention that actual, rather than predicted grades be used to offer university places.

Lessons are to be learned from assessment approaches used by the four UK constituent nations, as well as around the world. Systems incorporating assessed course work and other methods alongside traditional timed written examinations are more resilient to disruption, and arguably fairer. Teachers can use their knowledge of individual students and evidence elicited over time, set alongside criteria for reporting levels or grades, to make summative assessment judgements. This approach requires moderation (which ideally involves teachers in valuable professional learning within and across institutions) and standardisation at a system level. Teachers' judgements can be supplemented by formative assessment data generated and stored electronically: many programmes already exist and more are being developed that harness the power of artificial intelligence.

Designing and implementing high-quality assessment requires clarity about the principles, purposes, use and possible consequences of assessment, as well as understanding about validity, reliability, ethics, and other key concepts. The major task of changing high stakes summative assessment will take years. It must not eclipse the development of assessment that supports learning directly now. Assessment for learning, integral to everyday learning and teaching, assists pupils' subject learning as well as helping them become better learners.

Perhaps the most pressing needs are support and professional learning for assessment specialists, teachers, education leaders, and policy makers. A role for technology?

Teacher skill development is critical

Technology and infrastructure alone are not enough for good-quality remote or hybrid education. Teachers need to develop online teaching skills and be able to critically evaluate evidence about the available EdTech tools and their applicability and appropriateness for their particular students.[45]

Despite the difficulties teachers were faced with when suddenly required to use technology to do their jobs, they were able to adapt remarkably quickly, and build capacity. Teachers were resourceful and their appetite for learning can be seen in the numbers who signed up for a FutureLearn course designed to explore online teaching in response to the Covid-19 pandemic: 82,000 enrolments.[46] Teachers who felt additional training would be helpful agreed that using technology, organising learner collaboration digitally, delivering remote lessons, and digital assessment and feedback would be valuable to support their work.[47]

'The impact of Covid-19 brings the long-standing need to rethink assessment into sharp focus[...] It exposed the realities, weaknesses and challenges of examination systems. Issues of equity and fairness rightly loomed large.'

The role of school leaders and headteachers during COVID

Brian Lightman

Brian Lightman's broad experience in education spans 41 years and has included two headships and the position of General Secretary of the Association of School and College Leaders. Now a self-employed education consultant, he has a wide-ranging portfolio which includes working with schools and leading on careers education for the PiXL network of some 3000 schools. He is a non-executive director of the Careers and Enterprise Company and of an Academy Trust.

School leaders and headteachers have made heroic efforts to adapt to the challenges surrounding COVID and have invariably worked long hours with little respite at weekends and during holidays. They have done this willingly and with professionalism, but have been immensely frustrated by the uncertainty around changing and unclear guidance.

The short-term implications are:

- Headteachers and school leaders are going to need support to continue coping with the vast range of increased demands they are facing. Many are exhausted.
- The assessment system at 16 and 18+ needs to be adapted immediately in recognition of the disruption to learning for many young people. [...]

In terms of long-term implications, there is an unprecedented opportunity to look at many aspects of schools' operations differently in the light of experience. These include:

- The curriculum and educational vision including the role of students and independent and resilient learners and the necessary skills and attributes.
- The use of technology as a virtual learning tool so that blended and flipped learning becomes an integral aspect of the curriculum. Research into effective practice and professional learning for staff will need to be prioritised.
- Assessment and testing – moving from a reliance on external assessment to a position where formative and diagnostic assessment are embedded in teaching and teachers are re-skilled in this.
- Accountability (including inspection and performance tables). The pandemic has brought the shortcomings and unintended consequences of existing systems into sharp focus. There is an opportunity for schools to demand and rise up to a higher trust system in which they hold themselves to account.
- Schools have made a vast contribution as Community Hubs during the pandemic. The opportunity is to build on this.
- Building on the role of parents as partners in the educational process. Many parents have learnt a great deal about their children's education during lockdown and participated in increased communication between home and school.
- Building on the fundamental change in working conditions including the role of remote working for teachers, the way meetings and staff training etc are organised and what opportunities for flexible working have been discovered.

I have explored some the questions school leaders might consider.[48]

Parental engagement is vital

Parents were understandably worried about their children's education, and parents who felt that communication from school leadership was clear were ten times more likely to feel confident about their school's handling of the disruption than those parents who did not feel communication from school leaderships was clear.[49]

Much has been written about learning loss and falling behind.[50] When asked specifically about whether *falling behind* was a concern for them, 55% of the parents who responded to a Parent Ping survey stated that *falling behind* was a 'big' or 'quite a big' concern, compared to 36% reporting that it was 'not a big concern', or that it was 'not a concern at all'.[51] However, this was not necessarily the main worry for all. The main worry for parents of children at the end of primary school and in secondary schools was the return to school in September 2020. These parents were less concerned about learning loss than they were about a member of their family contracting Covid-19. Childcare was a larger worry for parents of younger children,[52] for whom learning loss was a lesser concern.[53]

Disruption is disproportionate

The consequences of educational disruption are not felt evenly across all students and families.[54] The most recently published OECD data indicates that students from disadvantaged communities have less access to personal technology and high-quality online learning resources.[55]

There is evidence that primary school children from the least advantaged communities would lose 31% of a standard deviation from lockdown by the time schools re-opened in September, whereas children from the most advantaged community would have lost 24% of a standard deviation. The difference between these two communities is bigger in secondary education than primary. This attainment gap is also reported by teachers[56] who felt that the majority of their pupils would require additional support.

The bare essentials for effective home learning – personal technology, access to suitable internet connected technology, and a quiet, dedicated space to study – were not available to all children. Eighty-eight per cent of secondary school children report that their school has at least one online home learning resource, which means that those children without appropriate access at home are at risk of being left behind. Indeed, access to IT has been identified by the Nuffield Trust as *the most significant form of educational disadvantage*. However, the overall level of deprivation of the school was found to have more influence on student engagement than the level of deprivation of individual students.[57]

The school is the key driver for engagement for disadvantaged students. Teacher confidence in their use of technology is another factor and even before the lockdown teachers in private schools reported being more confident in using education technology than their state school peers.[58]

The disparity in educational provision is also reflected in parental concerns. For example, data collected by Parent Ping and TeacherTapp, shows how socioeconomic factors impact the kinds of worries felt by different families. Worries about *falling behind* were evaluated by Parent Ping on 28 July 2020. As reported, 20% of parents who responded to being asked if *falling behind* was a concern for them stated that *falling behind* was a big or quite a big concern. When a comparison was made between respondents who were eligible for Free School Meals (FSM) and those who were not, 58% of parents eligible for FSM said that *falling behind* was either a big concern or quite a big concern for them. Seventeen per cent of parents eligible for FSM responded that they did not know if *falling behind* was a concern, compared to 5% of respondents not eligible for FSM. Thirty-six per cent of parents not eligible for FSM responded that falling behind was *not* a big concern for them, compared to 21% of respondents who were eligible for FSM.[59]

When the same data from Parent Ping's survey on 28 July is analysed to explore the views of single parents compared to non-single parents, the differences are even more noticible. Seventy-seven per cent of single parent respondents stated that *falling behind* was either a big or quite a big concern for them, as compared to 54% of non-single parent respondents. Respondents who stated that falling behind was *not* a concern were divided as follows: 18% of single parents elected for this response, compared to 36% of non-single parents.[60]

A further question from Parent Ping used in a survey on 30 July 2020 sought to find out what did concern single parents as compared to non-single parents. This survey revealed some clear differences, 59% of single parent respondents reported being concerned about 'missed learning due to lockdown' whereas only 28% of non-single parents selected this response. The greatest difference was seen in concerns about financial worries with 59% of single parent respondents selecting this response compared to 16% of non-single parents.[61]

Parents reported spending money on learning, since lockdown, for extra books, resources, subscription to apps or websites or on electronic devices. Twenty-four per cent of parents have spent less than £50, and 14% had spent more than £100 pounds in the week after schools closed. Moreover, many families supported their children's learning with additional tuition if they could afford it.[62]

Families with SEND children faced substantial challenges

Sixty-eight per cent of parents of children with special needs reported that they found home learning really challenging and this was exacerbated by the fact that many of these children are extremely vulnerable and required to be shielded. Only 28% of parents agreed that their child's educational placement had provided very good support.[63]

Independent or non-maintained special schools (INMSS) had more satisfied parents (29%), compared to parents in mainstream schools (16%) and in state special schools (18%). In addition, the amount of work set was felt adequate by 50% of parents in INMSS compared to 16% in mainstream schools and 26% in state-run special schools.

Special needs children's access to therapies, one-to-one teaching assistants and support was also badly affected by restrictions brought about by Covid-19 crisis, and this will cause many children who require intensive support to regain skills lost or not progressed during this period. Only a small percentage of one-to-one teaching assistant support could be provided online, and once again those in INMSS tended to fare better (22%) than those in state special schools (8%) or mainstream schools (9%). The figure was 17% in post-16 settings. Forty per cent of parent carers of children with SEND felt they received no support from educational or other agencies during the lockdown.[64]

There is a key role for technology to play in tackling the challenges highlighted by the data. A useful series of recent reports about Specific Learning Difficulties (SpLDs) and technology is available.[65]

The need to rethink attendance

The Square Peg team[66]

Square Peg, a Community Interest Company, was set up to effect change for all those students who face barriers to attendance and their families. The one-size-fits-all education system is having a negative impact on an increasing number of children and young people who then 'act out' and become excluded, or shut down and become persistent absentees. The consequences can be catastrophic.

Several factors have contributed to the anxiety currently experienced by children and young people, not least of which relate to education. These include an overly academic curriculum, increased testing, a reduction in support staff and difficulties accessing external support for SEND or mental health issues. Schools have become larger, with school leadership teams held accountable for attendance and attainment. They are also the focal point for much more than education: an integral part of safeguarding policy, childcare for parents to return to work, and the 'coalface' for children and young people's mental health issues. This has put huge importance on a child's physical presence in school, irrespective of the cost to their mental health and emotional wellbeing.

The response to attendance difficulties often exacerbates the problem, and punitive sanctions for parents serve to heighten their own anxiety (which impacts on their child's anxiety). There is also no evidence that these sanctions are effective. The result is that an increasing number of children have become persistent absentees – over 771,000 in the 2018/19 academic year and for 42.8% of their absences there is no formally recorded reason. More than 60,000 students are absent for 50% or more of the academic year.

For the cohort of children who face barriers to school attendance, lockdown provided welcome relief from the daily pressure of attendance, and the threat of parental fines and prosecution. It also demonstrated that online education is possible (now statutory for Covid-related absences). We need to build online provision as a permanent complement to mainstream education and one which could be synchronous, engaging, therapeutic and effective. Technology now allows us to identify how individual students learn and offer up bespoke content and pedagogy that taps into their skills, talents and passions, and better prepares them for our future (predominantly digital) world.

For an up-to-date review on technology-led interventions for specific learning difficulties, please see Luckin et al (2020).[67]

The infrastructure is inconsistent

Ninety-six per cent of students who attend advantaged schools in the UK reported having a computer for schoolwork at home. However, only 88% of students in disadvantaged schools reported that they also had a computer at home for schoolwork.[68] Teachers from disadvantaged schools reported that more than a third of their class wouldn't have adequate access, compared to concerns about access in most affluent state schools (3%) and private schools (4%).[69]

Twenty-one per cent of state school teachers reported that their school is providing pupils with laptops or other devices to mitigate inequality gaps (secondary 31%, and primary 11%).

However, affluent schools were still able to provide more laptops than disadvantaged schools (28%, compared to 15%).[70]

The increase in numbers of pupils refusing to attend school is an increasing matter of concern with mainstream media. In November 2020, the Guardian newspaper published a report entitled '"It was damaging him": the spiralling number of children refusing to go to school'[71] which reported that government data from 2018–2019 indicated that 770,000 pupils were persistently absent in England, with an increase in the numbers of pupils who miss more than half their schooling from 39,000 in 2015–2016 to 60,000. The Covid-19 pandemic is likely to be making this situation worse, with Ofsted reporting that of the 121 school visits conducted in October 2020 a third of schools reported an increase in the number of pupils not attending school or leaving to be home educated. Campaign group Not Fine in School (NFIS) reported that almost 1000 new members had joined their closed Facebook group since the start of the school term in September, 2020, an increase in membership of 8%.[72]

Trust in government is low

The uncertain and dynamic reality of the Covid-19 impact led to the daily reliance of schools on government advice, support and guidelines, which were often highly reactive and, as Figure 7 illustrates, contained multiple conflicts in the information they provided. As one headteacher noted:

> *'I think one of the things that would have helped enormously is if when they updated something – if they told you which part of that document had been updated, rather than just sending it out, and then you having to trawl through it to find the bit that was new or different. And to know what was statutory and what was guidance.'* [73]

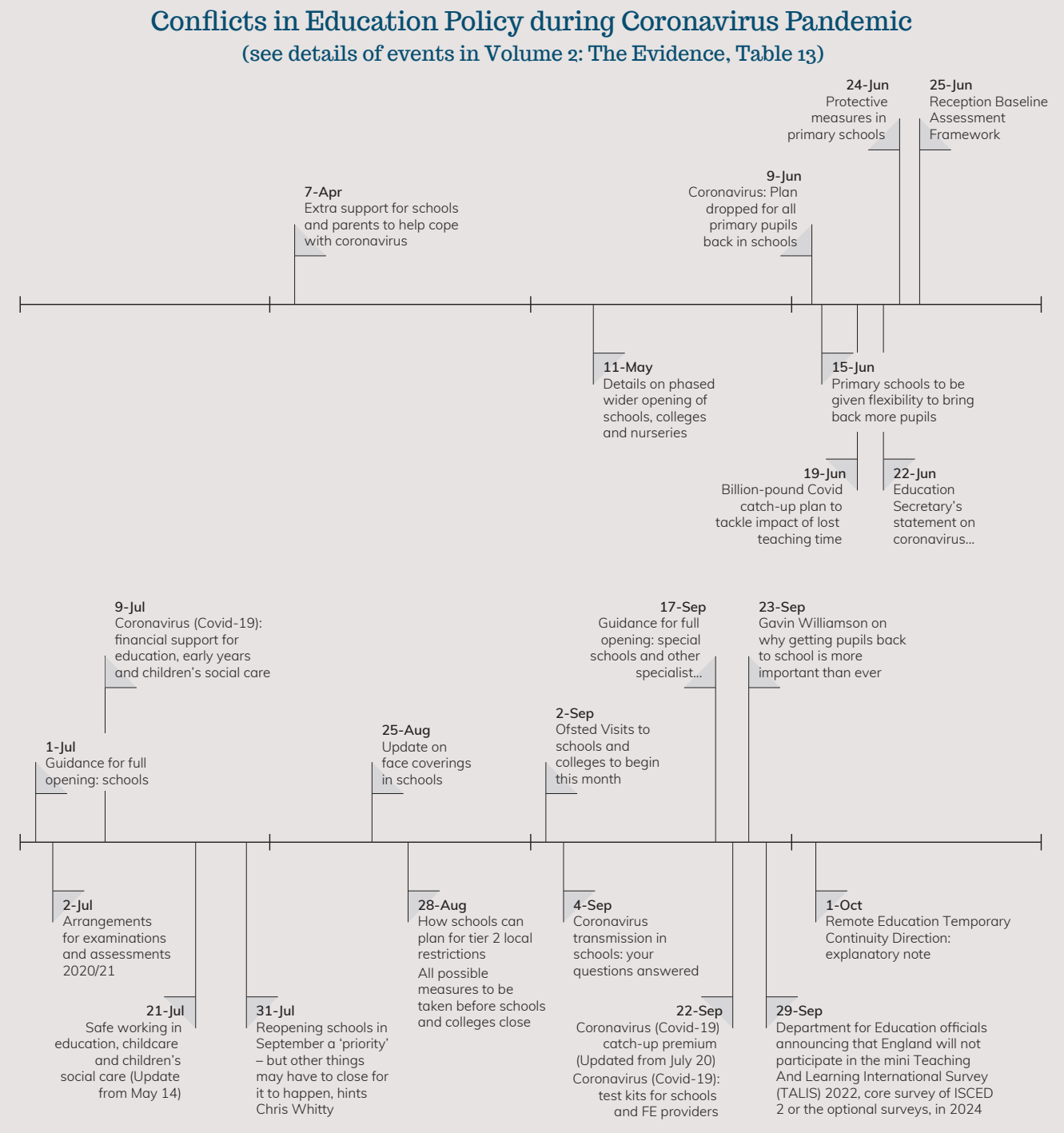

Figure 7: The Timeline of Guidance for Educational Leaders

Trust in the government

Jim Knight

Jim Knight, Rt Hon Lord Knight of Weymouth, mostly works with education companies helping them to provide great services for teachers and learners. He also works in the House of Lords as a legislator. Right now he is building a global teacher community for climate change education and helping to develop a network of free coding schools.

The last nine months have been a time of unprecedented challenge for everyone working in education. Covid-19 will impact a whole generation of children and young people for many years. Many children have fallen behind and have increased levels of anxiety; parents have juggled work and teaching, with a new appreciation of the importance of school; teachers have had to learn new skills and work excessive hours to adapt to continue to do their job.

All of this has had to be led, and that is where we have seen the biggest gaps.

Thanks to some great school leadership I have seen some wonderful things. New ways of communicating and teaching have been developed overnight. Young people have been allowed to blossom as self-directed learners. Schools have been at the heart of caring communities as they converted into food distributors for those that most need it.

School leaders have shown real love and care for their people whilst juggling compressed budgets, grieving families, and a constant flow of guidance.

This is where the failings have been most apparent. System leadership in a crisis is hard. You have to act quickly, focus on the right things, take risks and act decisively. Then you have to communicate, communicate, communicate. In a crisis everything is uncertain and good leaders create certainty. Even where there are unknowns, you can still explain what the scenarios are and what will happen in each scenario.

Schools have been given no certainty. Would they close? Would they re-open? Who should come to school? What personal protection is needed? What about exams? Inspections? How do we remote teach? What about children without technology at home? What about free school meals?

The questions were many and predictable. But we have had exams crisis before. We have had schemes to end the digital divide before. And yet no attempt to learn from history and instead just mountains of guidance to add to headteacher workload. For most, teaching and learning came way down the priority list because compliance had to come first.

2020 could be remembered as a time when schools and teachers showed their flexibility, commitment and professionalism. I fear it may be remembered more for a model in poor leadership from the top, as ministers continuously failed to get ahead of the curve.

Trust in the online world is also lacking

During the lockdown, interview data reveals that a wide range of apps and online software were used, and as the main school platform, Microsoft Teams and Google Suite. Most of these were provided free to schools during the lockdown, but most schools already had accounts set up for pupils. However, many companies did not consider safeguarding issues due to the urgency of the need to go online, yet most of our interview participants mentioned that safeguarding was at the forefront of their provision for remote teaching, particularly for primary schools, for whom safeguarding and privacy issues are fundamental. This stopped some schools from engaging with certain software. Research by Avast[74] shows that more than one in five (21%) children admit to having had bad online experiences during the Covid-19 lockdown. Of those who cited negative online experience, 72% had received unkind messages, 72% had received unsolicited and inappropriate content, 71% had received unwanted contact from a stranger, 67% had received a malicious video call and 58% had accidentally downloaded a virus onto their device.

Privacy in learning during COVID

Tom Moule

Tom Moule is Executive Lead at the Institute for Ethical AI in Education. Tom leads the Institute's research programme, and is the primary author of the Institute's reports.

A key part of my role is to listen to stakeholders, from secretaries of state to students themselves, in order to understand their optimism and concerns around the use of AI in education.

I have heard concerns around educational technologies being used as instruments of surveillance, but have also learned of an appetite for data being gathered on an ongoing basis as part of continuous assessments.

Learners in particular are uneasy about the possibility of inaccurate AI systems making mistakes and hence having an adverse effect on their learning. Accordingly, there is broad recognition that large amounts of data pertaining to the learning process is needed to make these systems function with high degrees of accuracy; that said, there are still demands/expectations that data be collected (and stored) safely, parsimoniously and only for the purpose of supporting learning and other key educational goals. And what constitutes parsimoniousness in these contexts?

That depends. For instance, the collection of highly personal data (relating to a learner's emotional states, perhaps) could be justified if the benefits outweighed the risks. But how do we decide if that is the case?

With balances to be struck, and contexts to be taken into account, ensuring learners' privacy is respected requires trusted processes in addition to codified principles. Learners and educators need to be involved in making decisions around when/what data is and isn't collected, and when/if the benefits of data-consuming technologies outweigh the risks. Transparency is needed around how technologies operate, and around what goes on behind the scenes. And, in the event that learners' privacies are compromised, someone (not something) needs to be accountable.

So, to address the exam-style question: *"Should students share video during live lessons?"* – maybe: if trusted processes are in place to ensure learners' privacies are respected.

The feelings of the education ecosystem are important and diverse

The restrictions to school operations imposed in March 2020 tasked school leaders with finding ways to support teachers, students and families safely to adjust and maintain student learning. Disruption impacted classes, exams and learning over many months, leading to an inevitable deterioration in how people felt. Feelings of positivity declined from April to July across all stakeholders. Levels of enjoyment of remote teaching and learning were highest amongst parents, with infant school stakeholders feeling the most challenged. State school stakeholders reported lower levels of enjoyment and higher levels of challenge than in independent school peers. None of our SEND stakeholders reported that they were enjoying the remote mode of teaching and learning. However, this was a small group and the rich data from interviews provided positive evidence when children were offered a different type of opportunity, a nonverbal autistic child performing extremely well when able to submit a recording they had done at home rather than attending a face-to-face audition.[75]

Stakeholder optimism about how the English educational system would cope in the new school year during July and August declined over time as the school year approached. The decline was steepest amongst educational leaders relative to other roles, and most stable amongst teachers. Parents were the least optimistic communities. There were also differences between state and independent schools, where feelings of optimism were well matched in July, but declined more steeply amongst state school respondents.

Primary school stakeholders were the least optimistic of the school sector stakeholders, and parents were the least optimistic community.

Likewise, confidence about their ability to maintain remote learning over the longer term, declined. Average confidence levels decreased most amongst educational leaders and least amongst parents; most in state schools as compared to independent schools and more in junior schools than primary or secondary schools.[76]

Remote teaching and learning are not exclusive to lockdown, but there is a clear relationship between these two settings which is useful, when exploring how people felt when school education was disrupted due to the pandemic. We found evidence of a correlation between enjoyment and confidence with respect to remote teaching and learning. In general, those who were enjoying remote education were more confident in their ability to sustain it. This is not a causal relationship; it is, however, interesting to evidence a relationship between enjoyment of learning and teaching, and then, confidence.[77]

Twitter data collected in September 2020 indicated a transition in the prevalence of mentions of *parents* and *students* to mentions of *teachers* and the *school* between the time prior to schools re-opening and the time directly after schools re-opened.[78]

In spite of declines in positivity, there was positivity about the opportunities resulting from the pandemic restrictions in education. Fifty-four per cent of respondents believed there was an opportunity to improve the use of technology for learning. The opportunities perceived varied across stakeholder communities.

For example, primary school respondents were more appreciative about the opportunities for improved communications between parents and schools than secondary school respondents.[79]The most concerning factor for respondents was work–life balance (38%), followed by concerns about students 'falling behind' (33%), and confusing messages and guidelines from the government (28%). The teaching community was most concerned about work–life balance (40%) and about what happens once lockdown is over, and this may signal a need for increased teacher training. The leadership community was the most concerned about confusing messages from the government, and parents' concerns were focused on emotional wellbeing and communication with the school.

The differences between sectors is evident again, with concerns about 'falling behind' – together with the lack of technical knowhow and poor infrastructure – much more apparent in state schools. The 'falling behind' concern was also greater in secondary school stakeholders than their primary contemporaries. Boredom and loneliness amongst students was much more of a concern in secondary and state schools. Interestingly, independent schools reported greater use of collaborative technologies and much greater use of synchronised learning than state schools. Lack of motivation, and the difficulty of studying alone, were of most worry to pupils.[80]

The risk of learning loss was greatest among the children who did not have access to a personal computing device; whose caregivers were not able to step into teachers' shoes; whose household did not have a reliable internet connection; and for whom learning was not validated as a priority within their social circle. The risk of damage to children's wellbeing was widespread and crossed the nation, affecting all socio-demographic communities.[81]

The EdTech sector worked hard to step up to the challenge

During school closures, educational technology became invaluable to many teachers, parents and learners. EdTech companies often provided free support to help alleviate the effects of the pandemic on learning. Going back to school also saw an increase in the use of EdTech.

The sort of technology used and the way it changed over time

We wanted to probe the manner in which teachers, parents, EdTech companies and school leaders reported on their schools' technology use over the eight-month period from April. The four most popular activities for schools were:

- live (synchronous) lessons
- digitally marked assignments
- shared lesson recordings
- the provision of downloadable activities.

There was also a substantial number of respondents who reported their use of subject-specific software and technology to support collaborative learning.[82]

When looking at the breakdown of technology used, it is clear that primary schools put more emphasis on asynchronous, as opposed to synchronous, learning. Independent schools used more collaborative learning than state schools.[83]

We also asked our respondents to what extent they were using, offering or recommending free or reduced-price technologies. All of our educational leaders, a third of the teachers and almost half of the parents who responded, reported using or recommending free technologies. Almost

two-thirds of the EdTech company respondents reported offering free technologies during the lockdown.[84]

When asked if they were using, offering or recommending technologies they used before Covid-19 or using new alternatives, more than two-thirds of educational leaders (74%), teachers (81%) and parents (68%) reported using or recommending technologies that included technologies they had never used before. In comparison, 26% of educational leaders, 16% of teachers and 17% of parents said that they were only recommending or using technologies they had used before. Across the period from 22 April to 4 September 2020, it can be seen that as one might expect, there was an increase in technology use in the spring and during lockdown, including technologies previously not used. Educational leaders reported less technology use, and their pattern of usage was not evenly spread over the months. Teachers' and parents' use of technology was more evenly spread. June and July saw an increased reporting of the use of technology that had not been used previously.[85]

'The "falling behind" concern was also greater in secondary school stakeholders than their primary contemporaries.'

EdTech learning from lockdown

Lockdown 2020 has provided a unique opportunity for EdTech companies to introduce new technology to the educational sector. Companies who offer EdTech – and even some technology companies who were not previously particularly active in the education space – have increased *and/or* changed some of their products *and/or* services. For example, Amazon introduced Amazon Kids+ to offer books, videos, music and educational content. Zoom has also made changes to their products and practices to address educational requirements. We wanted to know if the companies we surveyed were using this opportunity to collect some data and learn about how their products and/or services were being used.

Data from EdTech companies sampled in April, June and then again during September/October evidences that the number of companies who had not collected any data at all has reduced from 30% at the beginning of lockdown to 10% when the school year resumed in autumn 2020. The highest increase in data collection method was using interviews (from 4.35% in April to more than 50% in September/October).[86]

Data collected via interviews provides useful but limited data, and therefore we wanted to know what other data sources our EdTech respondents were using to collect evidence about their products or services. The simplest data collection method to scale is the use of logs or clickstream data to gather and collate evidence about the way a product or service is being used, and yet the adoption of this data collection method increased the least, moving from 26% in September to 32% in October.[87]

We also investigated the plans that EdTech companies were making to change their products in the light of lockdown. Initial enthusiasm among respondents suggested they would use their 'lockdown learning' to change their product or service, with 39% reporting that they had thought about changes and were starting to plan how they would make these changes, and 57% reporting that they had already made changes in May 2020. In the autumn of 2020, the number of respondents thinking and planning was 36% – a slight dip from May 2020 – and the number of respondents who said they had already made changes was 46%.[88]

Data regarding the nature of changes made to products or services by EdTech companies as a result of 'lockdown learning' illustrates that the most common changes companies made were to put their product online, add functionality to support home learning, expand functionality, while scaling or building support specific to Covid-19 restrictions, such as social distancing.[89]

EdTech company anxiety and support

In 2020 we asked in April, June and then again in September and October, what the main concerns were. For the EdTech companies who responded earlier on in April, the most pressing concern reported was paying rent on company premises that were not being used, rating 4.9 on a scale of 1–10. This remained the main concern in June, with a rating of 5.08. By autumn 2020, the main reported concern was that companies were onboarding too many customers for them to be able to meet their needs effectively – this was rated 5.07. Initially in April, the third most highly rated concern was inadequate or inaccessible government support – rated 4.47 – but this reduced to the least-rated concern by autumn 2020, with a rating of just 3. June 2020 saw the main concern remaining paying rent, but concerns about staff being ill was now the second highest rated concern at 4.25 and concerns about supporting staff who were working remotely had increased to 4, which made it the fourth-highest rated concern. The rating for concerns about staff becoming ill dropped to 3.95 in autumn 2020. Worrying about when lockdown or Covid-19 restrictions would end, and what that might mean for business, was not initially rated highly as a concern – but it did increase over time, rising from an initial rating of 3.18 in April, to 3.42 in June and 3.55 in the autumn of 2020.[90]

Concerns about paying property rent did not change significantly, and stayed high on the list of EdTech company concerns. In terms of how our respondents dealt with working in the office or at home, however, with 45% of the companies who responded to our question reported that their staff were all working remotely, with 27.5% of respondents in rented premises and 17.5% in a shared workspace.[91]

In the same way that we were interested in how other educational stakeholders were being supported during the disruption caused by Covid-19, we also asked about this with our EdTech sample. Colleagues were the most common form of support, with 73% reporting this, and family was also important, at 57%, and management at 59%.[92]

The future outlook for EdTech

The increased use of EdTech due to the Covid-19 disruption to education could precipitate a rosy future for the EdTech companies in Britain. Researchers expect that more blended learning approaches may be implemented in schools, mixing classroom and online learning to continue the fight to reduce the detrimental impact of Covid-19 in the schools and the ecosystem.[93] A recent report by London & Partners[94] and Dealroom[95] highlights London as the major European EdTech hub and states that it has notable potential for growth. London's EdTech ecosystem is the largest in Europe, with an estimated value of $3.4bn, and it is the only city in Europe in the global EdTech top ten by investment.[96]

When we asked our EdTech respondents what they thought of the prospects for the EdTech ecosystem in May – and then again in autumn 2020 – the response was less positive. In May, 50% of respondents reported that they believed that the EdTech ecosystem had the potential to be stronger, due to the Covid-19 restrictions, but that it needed more government support. Thirty-nine per cent of respondents agreed that prospects were good, but that there were barriers to be overcome – aside from government support. At that point, there was also concern about the negative impact on the sector of free resources being made available by non-commercial organisations. By the autumn of 2020, the number of companies responding stated that the EdTech ecosystem had the potential to be stronger owing to Covid-19 restrictions, but that it needed more government support, which had dropped by 9% to 41%. Respondents who felt that the EdTech ecosystem had the potential to be stronger due to the restrictions, but that there were other barriers, had dropped to 28%. Anxieties about free resources had all but disappeared by autumn 2020, but 10% of respondents stated that they now felt that the EdTech ecosystem was *weaker* due to the Covid-19 restrictions, yet no respondents had expressed this view in May. Those who stated that they believed that the EdTech ecosystem was *stronger* due to Covid-19 restrictions had also dropped slightly from 22% in May to 21% in autumn 2020.[97]

The reduced reporting of positivity about the EdTech ecosystem was not reflected in reports about EdTech company respondents' feeling of optimism. Overall, when asked if they generally considered themselves to be more or less optimistic about the future than they were before Covid, the EdTech respondents moved from 26% of respondents reporting that they are more optimistic about the future than they were before the pandemic in May, to 49% in the autumn.[98]

The World Economic Forum[99] examination of the effects of the lockdown on education concludes that it is necessary to combine the power of

technology with the power of communities. It states that:

> ‘The factory-inspired, 19th-century model of education made sense when there were severe limitations on teaching resources. Today there are innumerable digital learning platforms powered by AI that are struggling to find customers.’
>
> Researchers agree that while online education works for some people, it is not effective for everyone and not in every area.[100] This indicates that there is ‘a fundamental need to belong, learn and share’. We need meaningful communities – because they are force multipliers. They make learning fun and create a peer-to-peer accountability mechanism that shapes a culture of learning.[101]

BESA Director General Caroline Wright noted commented:

> ‘A significant proportion of the UK’s EdTech providers work with schools across the globe and were well placed to provide support and advice to British schools when Covid-19 cases first reached critical levels in the UK in Spring 2020, given their experiences working with schools across the ASEAN region during the first quarter of 2020.
>
> ‘I am incredibly proud to represent BESA, an association whose members collectively provided more than £36m of free resources during the period from the March to June 2020 alone. The final figure will be significantly higher.
>
> ‘Many schools experienced a pace of change in technology practices that accelerated the uptake of technology over and beyond what had been seen before. This presented additional CPD and support challenges for UK EdTech providers who worked tirelessly to support both existing school customers and schools in need of additional support and guidance. Schools and the wider EdTech sector pulled out all the stops to help support learners at breakneck speed during the initial school closure period. Schools and the EdTech industry now face the significant challenge of embedding these new practices over the longer-term. This will be testing given the additional Covid-burdens and budgetary pressures currently facing schools.’

Everyone needs support

The closure of schools in the spring of 2020 required that education became a home-based, technology-enabled activity, with limited face-to-face opportunities. School leaders found themselves in the unenviable position of balancing the provision of support to students and staff, whilst attempting to reduce the impact of school closures on millions of children and wading through numerous pages of government guidelines and regulations. School leaders had to work in a context where there was little to no predictability and no certainty or end in sight.

What can the evidence tell us about the impact of the Covid-19 lockdown and related ongoing restrictions on school leaders and teachers?

Support systems

Teachers' workload is an ongoing issue, even before the pandemic, as evidenced in the National Foundation for Educational Research (NFER) survey carried out in October last year,[102] which found that over a quarter of the teachers who were polled were considering leaving their jobs within the next 12 months due to workload pressures, stress and anxiety.

Support systems are a central mechanism for helping to reduce stress and anxiety in all stakeholder communities.[103] More than 80% of parents and staff who felt involved with shaping their school's response to Covid-19 also felt they were part of the school community, and communication, clarity of decisions and support were the highest factor that correlated with both parent and staff confidence in a school's response to the pandemic. Staff who felt that communication from school leadership was clear were four to five times more likely to feel confident about their school's handling of the disruption than the staff who did not feel that communication was clear.[101]

The support systems as reported by our survey respondents, that is, all stakeholders except EdTech companies, illustrated that more than 30% felt supported by colleagues and school leaders, and under 2.5% felt supported by the government.[104] All stakeholders including EdTech felt most supported by colleagues. Family and friends were also important sources of support, particularly for EdTech companies. More educational leaders and parents responded that nobody was supporting them (15% and 21% respectively) than educators and EdTech, where less than 10% of respondents reported this. The feeling of lack of support by governmental agencies is clear across the board.[105]

The importance of support networks

We have already illustrated that when asked to score their personal feelings during the six months from April to July 2020, our respondent stakeholders reported a decline in their feelings of positivity. We explored the relationship between respondents' feelings of positivity and their responses to questions about the support available to them. In particular, we wanted to know if the respondents who felt supported by their colleagues were also the respondents that expressed feeling more positive.

Our analysis showed a relationship between reports of positive feeling and respondents who report being supported by colleagues. This relationship is statistically significant. A similar investigation into the relationships between feelings of positivity and being supported by family members was also conducted to determine if stakeholders who reported being supported by family, also reported higher feelings of positivity. This comparison illustrated a positive relationship between being supported by family members and reporting feelings of positivity.[106]

But what about the stakeholders who reported either that nobody supported them, or that they did not need support?

Those who reported that they were not being supported, but that they needed support, reported higher levels of confidence in the sustainability of remote education (mean rank = 64.22) in comparison to those who said they did not need support (mean rank = 52.25). A further significant relationship was found between respondents reporting higher levels of enjoyment of remote education and those feeling supported by their school leadership. A similar relationship was found between educational stakeholders reporting feeling positive and those feeling supported by school leadership.[107]

The importance of working together and feeling supported is not just something of value to adults – the use of collaborative technologies for students is also known to be of great value for

learning. We therefore wondered if there was a relationship between educational stakeholders who reported higher values for feeling positive, and the use of technology to support student collaboration. Our findings indicate a significant relationship between respondents who reported using collaborative learning with students and higher feelings of positivity.[108]

Within the interview data, we also found reports of teachers appreciating the pedagogical use of collaborative technologies:

> *'We'll definitely make more and better use of [collaborative technologies] and forums with children kind of debating things, if that's something which could move into a home learning situation in normal times, they could debate and discuss...'*

Concluding remarks

Developments since spring 2020 were substantial and important. From March to July, the educational ecosystem endured a huge shock. Schools quickly transformed under circumstances of great uncertainty, often without having the appropriate infrastructure or support. The technology and practices that were 'to hand' were adapted and sometimes forced to cope with short-term pressing needs. Through August to December 2020, the impact of the lockdown restrictions became apparent and the need for schools to re-open in a sustainable way became paramount. There was no going back, and the magnitude of the consequences of Covid-19, was an accelerator for change. The early months of 2021 will need to see a gathering of communities, and discussion about building a longer-term vision for a resilient education ecosystem that supports the diverse set of stakeholder needs. Holistic critical thinking will be essential.

'There is a fundamental need to belong, learn and share.'

'Over a quarter of the teachers who were polled were considering leaving their jobs within the next 12 months due to workload pressures, stress and anxiety.'

References and end notes

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