ITZA

Learning from lockdown

The child's perspective

Lessons for the future
of digital education

Get Set has invited a panel of expert contributors, including **SuperAwesome**, to collaborate with us in bringing you a report on the child's perspective of learning in lockdown.

delivers high quality educational content that supports young people to learn independently online and to equip themselves for the digital workplace.

specialises in kid-safe digital technology powering safe digital engagement with over 500 million kids every month.

Methodology

We conducted qualitative interviews and quantitative surveys with a total of **426 children between the ages of 10-16.**

Our research focused on children who had been learning regularly online during lockdown, namely, those with:
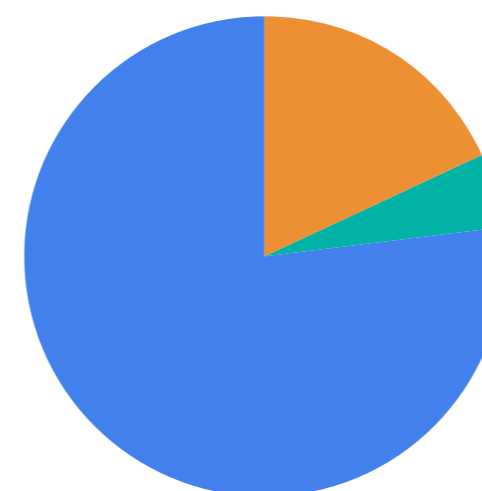
- **internet at home**

- **access to at least one device and**

- **some form of online teaching or school contact.**

The work was carried out with the support of research analysts **Map the Territory** and **Tapestry** in May - July 2020[1].

Core online survey - UK & USA

325 children: 163 in the UK and 162 in the US

**77% from state schools**
18% from private schools
5% other

Parents
74% full/part-time employed (plus 10% furloughed)
51% full/part-time working from home
74% married/civil partnership
82% monitoring their children's school work 'very' / 'somewhat' closely

Supplemental online survey - Rest of World*

63 children: Canada, China, Egypt, South Africa and Spain

25% from state schools
68% from private & international schools
7% other
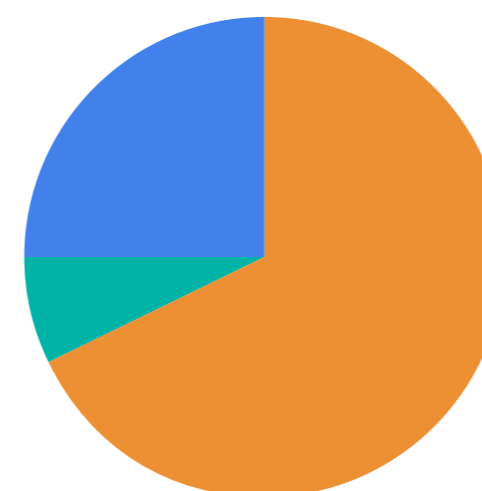
Parents
84% full/part-time employed
50% full/part-time working from home
79% married/civil partnership
62% monitoring their children's school work 'very'/ 'somewhat' closely

Note: We have only included data from the RoW group in our Findings where there are significant differences from our Core Survey panel of 325 children in the US and UK.

Detailed online in-person interviews
38 children in the UK, US, Canada, Australia, South Africa, Pakistan and China

In addition, we conducted **face-to-face online interviews with 35 teachers and parents**, and a **short anecdotal survey of children** from India, Germany, Mexico, South Africa, USA and Pakistan.

Contents

Leader by Tony Little

The disturbing disruptions caused by COVID-19, not least the national lockdown, have taught us many things about ourselves. As someone who has been involved in school life for over 40 years, I have seen how some ready assumptions about the way young people connect and learn have been mightily tested.

In a world where familiar routines are shattered and established patterns of teaching are unavailable, the ecosystem of school has been upended. For many teachers, lockdown was understandably very discomforting. Unable to sustain their usual rhythm and practice, many resorted to forcing on-line systems on situations out of panic. Distance teaching proved costly on time and energy and was frequently shown to be ineffective. Distance teaching was seen by many students as dull and constraining - more straight-jacket than release into a new world of possibilities.

The Get Set survey set out to listen, really listen, to school-age students. In so doing, a significant lesson has been taught to us teachers over these past few months. Teachers and parents need to come alongside students and understand how they learn in what is a new era.

Years ago, I discussed with an architect the positioning of a path leading to a new building at school. He was insistent that it should be placed where it would be most aesthetically pleasing to his eye. He had his way. No student ever used it: they took the shortest route across the muddy grass. So it can be with on-line education.

We need to transform distance teaching into a vibrant, relevant, enabling distance learning 'pathway' in which young people feel they have agency, direct their own traffic, and in which the power of networking is harnessed to help them progress. As the survey shows, students do enjoy going to school - for friendship and social interaction. But in a way that seems rather unnerving to an old schoolteacher like me, on the whole they actually prefer to learn at home and on-line.

In the articles that follow the survey results, Dr Rebecca Torrance Jenkins gives practical advice about how to support children based on neuroscience; Dr Dragan Gasevic writes about the importance of becoming adaptive learners and how to evaluate progress; and Richard Taylor talks about opportunities for Edtech in the future. There is wisdom and insight here.

Above all, this survey underlines to me the vital necessity of recognising agency and motivation as the beating heart of successful learning. With the tools now available to us, young people's agency and motivation will help identify and shape the learning of the future.

Contributors

Sam Clough

Sam is Strategic Insights Director at SuperAwesome and has been dedicated to providing insight on children, young people and families to enable marketing and strategy for over 25 years. In the past 6 years, she has been at the cutting edge of this audience's digital transformation with SuperAwesome, and before that she worked across many major consumer, entertainment and toy brands for young children and teenagers. (sam.clough@superawesome.com).

Professor Dragan Gasevic

Dragan is Distinguished Professor of Learning Analytics and Director of the Centre for Learning Analytics at Monash University in Melbourne, Australia. He also holds the honorary Chair in Learning Analytics and Informatics in the Schools of Education and Informatics at the University of Edinburgh. He is a co-founder and former President of the Society for Learning Analytics Research.

Tony Little

Tony has spent many years in schools, including being headmaster of Eton College. He has also been Chief Academic Officer of a large international schools' group and is currently chair of governors of a multi-academy trust and a state sixth form college as well as an international school in China. He has particular interests in developing pedagogy and the benefits of digital education.

Richard Taylor

Richard is a leading independent commentator on education, effective EdTech solutions and public policy. He has set-up and sold MARCOMS, an educational agency in Australia, founded *The Assignment Report*, the UK's leading source of education industry news and, for the last decade, has been an early-stage investor and commentator on the UK Edtech space.

Dr Rebecca Torrance Jenkins

Rebecca obtained her PhD in the practical application of educational neuroscience to learning following several years' experience as a science teacher. She reviews and writes for education journals, produces short videos about neuroscience, and is the co-founder of the NeuroFiles education project, which brings findings from psychology and neuroscience into classrooms and homes to enhance learning.

Key findings and conclusions

Our report identifies important green shoots of opportunity, highlighted by lockdown, for education systems worldwide.

Children enjoy having AGENCY in the way they work online and this independence can help them become the confident, adaptive learners they need to be in the rapidly-changing workplace.

Key findings

Of the children forming the focus of our survey - namely, those who had the tools and opportunity to work regularly online during Lockdown...

94% saw positives to learning in lockdown such as greater independence and the ability to manage their own time.

25% agreed 'a lot' that Lockdown had a negative impact on their learning (+ 38% 'a bit'), but **37%** felt that it had been positive.

95% would like their education to provide more of the skills they need for their futures and to be more relevant to the real world.

90% enjoyed the freedom to find things out for themselves on the internet.

87% considered digital learning tools useful/helpful for their learning.

"Do not train a child to learn by force or harshness; but direct them to it by what amuses their minds... Knowledge, which is acquired under compulsion, obtains no hold on the mind"- **Plato**

Report conclusions

How the child's view can shape the future of education

Heroic efforts were made by teachers to provide continuity in schooling for children during lockdown, with many attempting to replicate the classroom experience at home. The speed of lockdown made it almost impossible for teachers to go beyond face-to-face 'lectures', traditional assignments and worksheets online, but it is clear that the pandemic alerted parents (and the press!) to the need for a different approach.

The role and importance of online learning needs to be reassessed, not only to prepare for future possible disruptions in teaching and testing, but more importantly, to extract the maximum benefits that learning online can offer.

Our survey evidenced that many children enjoyed being online over lockdown because they felt 'free'; free to approach their school work in their own way and free to find out more about what interests them.

Time spent at home (in lockdown or otherwise) is an opportunity for children - particularly those aged 10 and above - to learn how to work more independently online and to be encouraged towards more self-directed learning, research and the exploration of new interests. These skills are recognised as being of vital importance for university study, lifelong learning and in the 21st century workplace.

As many academics and educationalists, including our contributors, have emphasised, the current education model in most schools - focused on teacher-led, curriculum-based instruction with frequent testing - does not prepare our children to become the confident "**adaptive learners**" they need to be in a rapidly-changing modern world.

Report conclusions

Research clearly points to the need for children to be equipped with the skills and attributes needed for deep learning, including curiosity-led intrinsic motivation and effective skills to learn and seek information independently. Other research also shows the importance of more purposeful learning, which in turn provides the personal satisfaction and emotional engagement, both of which feed deep learning[2].

Our survey evidenced that, replicating the classroom experience with Zoom or Google Meet lessons in lockdown, and sticking firmly to teacher-led instruction at home - though understandable given the lack of time and training available to teachers - is not the best use of what online learning can offer. In fact, it runs counter to the path for creating the adaptive learner.

Whether or not schools will face further disruption as a result of the SARS Cov2 virus, the need to encourage a greater focus on independent learning and investment in high quality online resources, proper access to the internet and equitable access to technology are all clear requirements for the education sector going forward.

The noise around education in lockdown has been around the clear gap between the experiences of those children in state and private schooling and the general failure of governments to invest effectively in remote learning.

However, our report highlights the green shoots of opportunity for education systems worldwide – children enjoy having some AGENCY in the way they work online and this independence can build the confidence and self-efficacy essential to their futures. The authorities should take notice and support the new opportunities for independent learning offered by the digital ecosystem, to engage, upskill and prepare our children for the modern world.

Survey Report
The child's perspective

Children saw many positives to learning in lockdown

94% felt they gained important benefits, such as:

	US/UK	RoW
More independence in my learning	37%	51%
New skills	29%	49%
Better understanding of how to manage my time	34%	44%

61% said they enjoyed their extra free time and flexibility

47% said they enjoyed learning at home

What they missed most about school was:

- not being with their friends **76%**
- the chance to share and discuss ideas **48%**
- face-to-face interaction with their teachers **45%**
- playing sports **41%**

"I can go through the notes and study them and understand them... In school, you have to rush and then understand, rush and understand. So it is a lot better from a study perspective, lockdown." **Amber, 14, UK**

"At home, I get to research a lot more and make sure I've covered everything." **Bethany, 14, UK**

"We definitely get all the work done but we finish a bit earlier.. If dad finishes his work early we go for bike rides together. I guess this is the joy of working at home." **Christina, 12, UK** (about herself and her sister)

Survey Report - Finding 2

25% agreed 'a lot' that lockdown had a negative impact on their learning (+ **38%** 'a bit') but **37%** felt it had been positive

	Agree a lot	Agree a bit	Disagree a bit	Disagree a lot
Lockdown had a negative impact on my learning	**25%**	**38%**	**23%**	**14%**

50% enjoyed lessons with their teachers online, but not extended 'zoom time'.
In many cases, school was replicated for children at home:

• **38%** followed teacher-led live lessons over Zoom (or similar) 'very often' (**76%** RoW)

• **46%** did set assignments 'very often' (**65%** RoW)

• **65%** of private school vs **33%** of state schools students had Zoom lessons 'very often'

How often do you do each of the following on a weekday during lockdown (% very often)	UK/US	Broken into Private	Broken into State	RoW
Live teacher-led lessons online (e.g. on Zoom etc)	**38%**	65%	33%	**76%**
Complete assignments set in advance by school	**46%**	61%	42%	**65%**
Research things my school asked me to find out about by myself	**38%**	65%	33%	**46%**

"The first thing that I've enjoyed about lockdown is [that] I've got a lot better at the lessons. I can concentrate a bit more because I'm on my own." **Huey, 11, UK**

"I think I do more work… and [am] learning more… because my teachers give me a lot of independent work" **Xinji, 10, UK**

"When all my lessons are over, I go outside for an hour because five hours on screen is way too much." **Suhani, 14, UK**

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Children valued their online learning experiences in lockdown

	UK/US	RoW
I can use the internet as much as I want to find out stuff for myself	90%	94%
I like being able to work at my own pace	91%	94%
I like doing things by myself	88%	84%

58% enjoyed the autonomy to plan their own day

How do you organise weekdays during lockdown?	UK/US	RoW
My parents help me but don't set me a fixed timetable	29%	10%
I set my own timetable	20%	33%
I do schoolwork as and when I feel like it	9%	11%
I follow my school timetable	22%	41%
My parents set my timetable and tell me what to do & when	19%	5%

"I like to go off on my own and read extra things related to History" **Henry, 13, USA**

It doesn't feel like school is taking over my whole day… I've been able to take up my own interests." **Imogen, 14, UK**

I love that they have more home time. [It's] forced us to slow down and it has given me perspective not to over-program my children." **Parent, USA**

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40% of children researched things they were interested in without being asked by their school or parents 'very often' (**44%** RoW)

34% of children did something "educational" but not directed by school in their free time such as reading or playing an educational game (**41%** RoW)

28% did something "educational" related to school in their free time (**56%** RoW)

Children valued being able to gain new skills and new ideas:

	UK/US	RoW
Gained new skills	29%	49%
Gained new ideas in general	23%	32%
Gained new ideas on what I want to do in life	17%	37%

"The one good thing is that it has taken the pressure off... it's given him time. When the homework comes in... because it's not ticking boxes it gives him time absorb it, and he's like, wow, that is quite interesting and he independently navigates his way to find more information." **Parent, UK**

"The thing I've most enjoyed in the lockdown is that it's really giving me a connection to news which I probably didn't look at in the past." **Changez, 10, Pakistan**
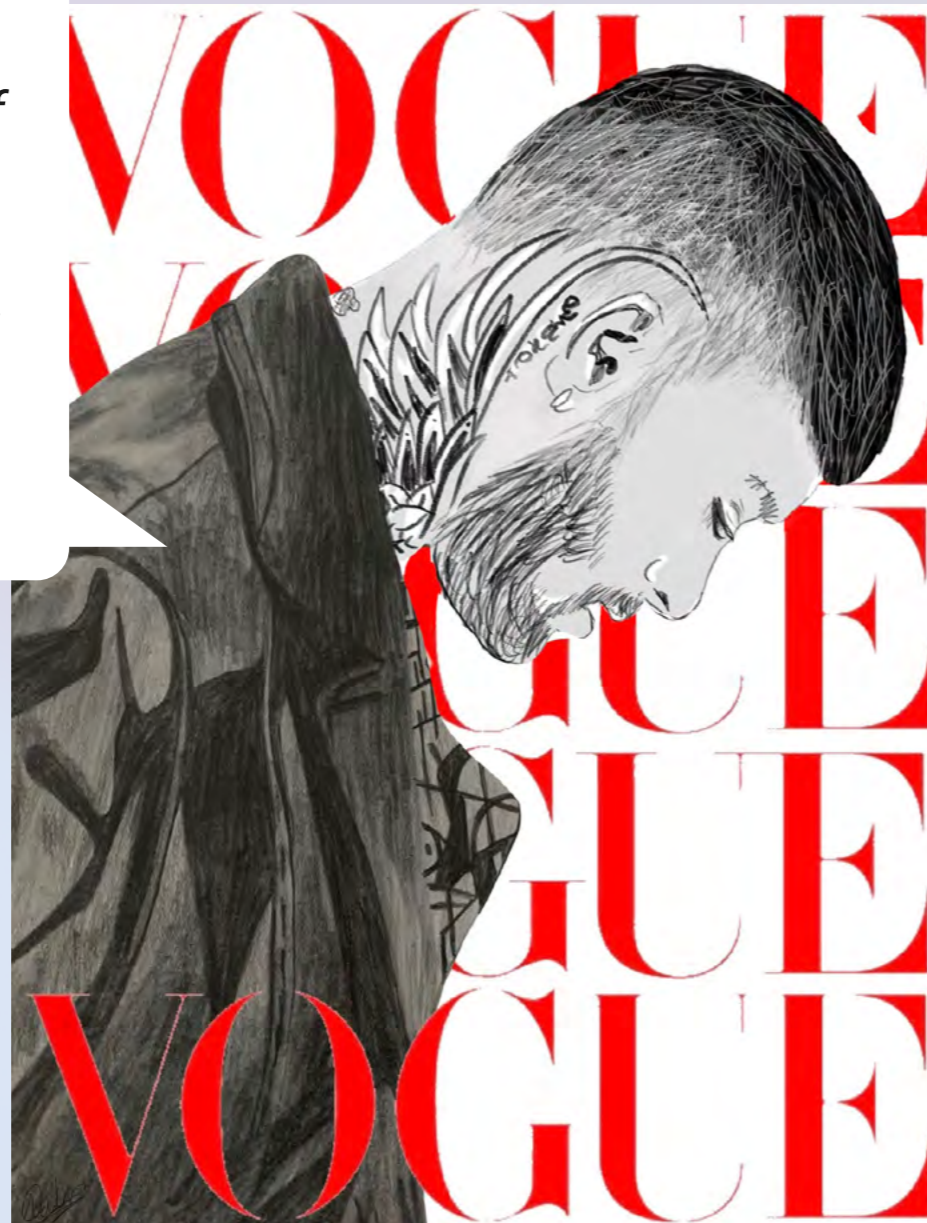
"My classmates and I could do research [on] our theme and do a script or presentation on our own [to] all the other pupils. The idea of learning by explaining is what I like the most in all subjects." **Paula, 15, Germany**

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Survey Report - Finding 3 (continued)

Children said they used their free time to bake, draw and work on projects - art/ science/ acting and many others. Here are some examples of what they did during lockdown:

"We have a talent show. At the 9:30 Zoom meeting, if anyone wants to show a talent like drawing or anything like that, then we put our hands up, and then at 3:30 we show that talent. I drew this butterfly on a sunflower."
Joyceline, 11, UK

"Art is my passion. One of my favourite things I made during this time is a drawing of one of my favourite celebrities, Zayn, on the cover of British Vogue. I made the clothing with pencil and the head digitally."
Nadine, 15, Pakistan

Samuel, 11, UK made a video showing us how he dissected sheep lungs

Survey Report - Finding 4

87% considered digital learning tools a useful and helpful part of their education.

83% would like more time to use them at school

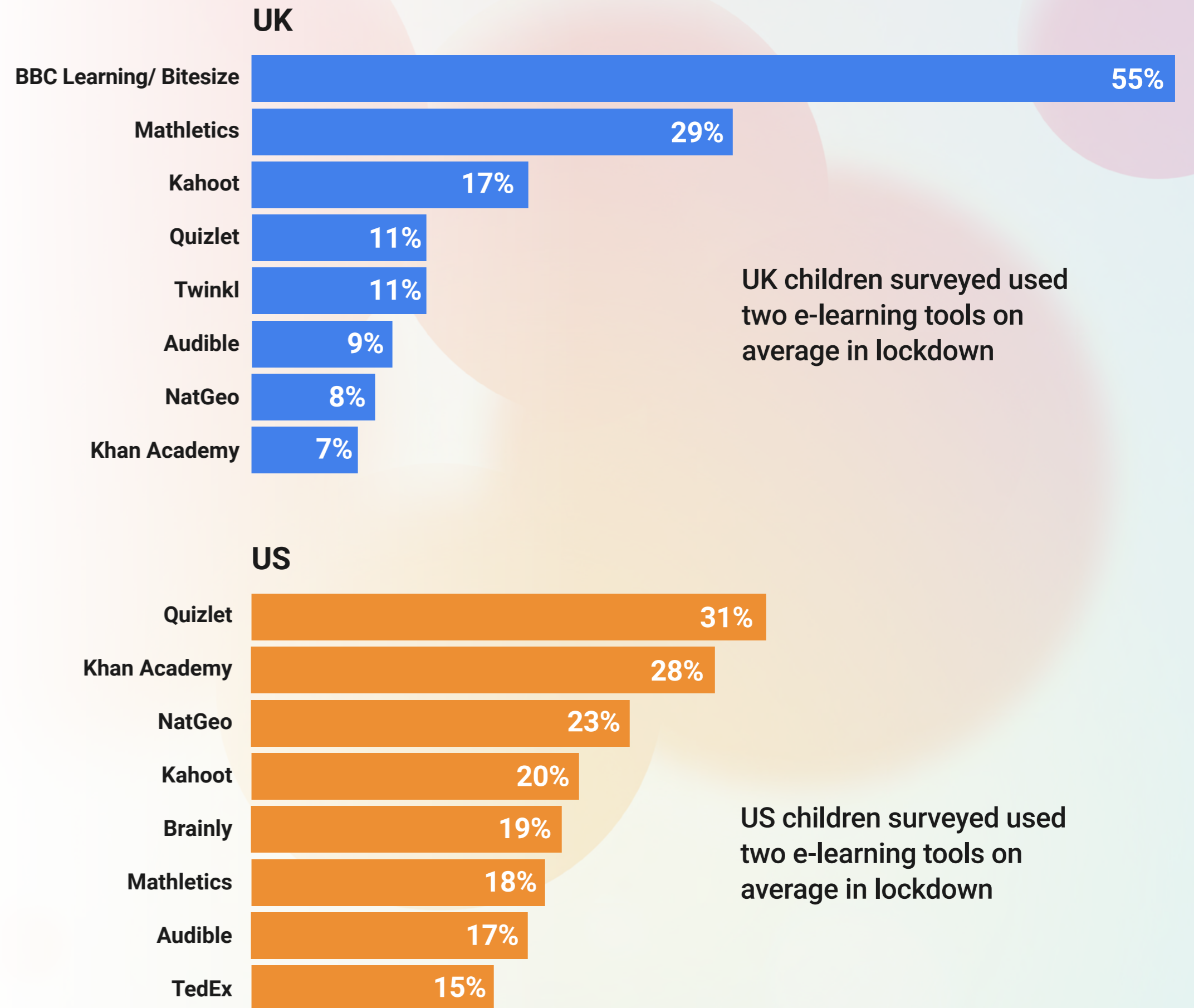**79%** would like more time to use them outside of school

Edtech site traffic numbers skyrocketed in lockdown[3], from structured learning tools such as Khan Academy and BBC Bitesize to those offering general learning like Kahoot and Quizlet.

Schools led the charge with e-learning and many children only used e-learning tools recommended or required by their teachers in lockdown.

74% of children at private schools vs **40%** State used new e-learning tools during lockdown.

> *"I did find that if you give them games to do - give them a link to a game - that was really helpful and they liked doing that."*
> **Teacher, China**

UK

Tool	%
BBC Learning/ Bitesize	55%
Mathletics	29%
Kahoot	17%
Quizlet	11%
Twinkl	11%
Audible	9%
NatGeo	8%
Khan Academy	7%

UK children surveyed used two e-learning tools on average in lockdown

US

Tool	%
Quizlet	31%
Khan Academy	28%
NatGeo	23%
Kahoot	20%
Brainly	19%
Mathletics	18%
Audible	17%
TedEx	15%

US children surveyed used two e-learning tools on average in lockdown

Although useful/ helpful, digital tools need to improve:

23% of the children surveyed said they were 'boring' and

22% didn't like them or preferred to learn in other ways.

Children want e-learning tools to be fun, easy to use and challenging

Top Desired Features - % selected	UK/US	RoW
Easy to use	62%	52%
Fun games	51%	49%
Problem-solving	44%	56%
Rewards for completing tasks	44%	38%
Quizzes	38%	43%
Videos	35%	33%
Levels of difficulty/ challenges	26%	37%
Competitions	25%	37%

"There isn't really stuff out there online that can genuinely stretch children and develop and unlock the abilities that they didn't have before. So much of the stuff online is about testing what you already know." **Parent, UK**

"We tried YouTube Kids, but he is too sophisticated…. and it just made him laugh. He wants to be watching more [advanced] content." **Parent, South Africa**

"In physics, we have an interactive game where we're doing forces. You have different weights on a skateboard and apply force to it. And when you visually see it, it actually helps a lot." **Jonathan, 13, UK**

"Other things that I liked doing online was playing with my robot BB8… I have an idea of how to programme on the app on my iPad." **Changez, 10, Pakistan**

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29% ranked the ability to 'create' things as their most desired feature, corresponding to their stated view that being creative and original is a valuable attribute for future employment.

Children explore further and dive deeper when they are interested or emotionally engaged in a subject.

"I remember I used to read this newspaper called First News and I saw an article about this animal called the pangolin. It really interested me and I researched them and found out about them. It was really, you know, intriguing to learn about them." **Stan, 12, UK**

"I'm very curious and I want to know. So, for example, if I'm playing my instrument and I suddenly think: 'why couldn't this have 21 strings', after I finish playing, I go on the internet and search for that." **Yvonne, 12, China**

"I've always been interested in law, but I didn't know which topic, so I do a lot of research around that." **Imogen, 14, UK**

"I actually really like music. The app [I use is] an online keyboard like a piano you type in a number and it makes different notes. We also use another [app] where you can make different songs.... and it's really fun." **Scarlett, 12, UK**

"You can code something to make TNT explode, or you can make a moving sunset... You can use your imagination and make them [into] something real." **Sydney, 10, Canada**

Children are almost unanimous in their eagerness for more 'relevance' and 'purpose':

95% believe that school subjects should be more relevant to their future and
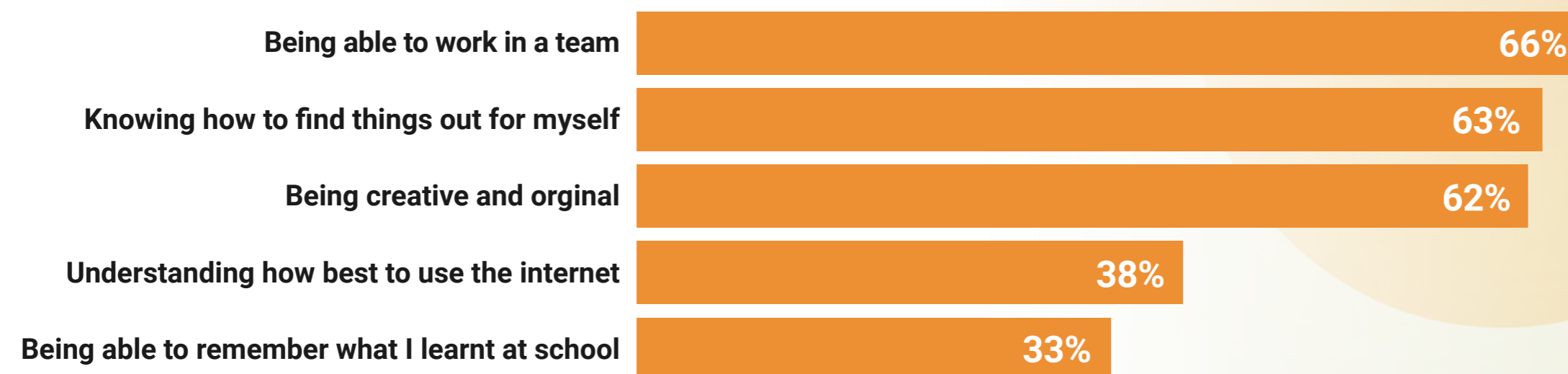
96% want their education to be more about what they are interested in.

From world affairs to climate change, children want to explore and learn more about the topics that interest them[4] but...

77% said they were driven to learn in their own time by their desire for good grades or by their teachers or parents rather than because they liked to learn (23%).

Only 33% of children associate remembering what they learn at school with what they will need for a job.

When you grow up and start working at a job, what do you think will be important?

Being able to work in a team	66%
Knowing how to find things out for myself	63%
Being creative and orginal	62%
Understanding how best to use the internet	38%
Being able to remember what I learnt at school	33%

"The planet and how to save it" **Francesca, 13, South Africa**

"Recently I've been in a big competition [outside of school], which is about business. We ran our own business for a couple of months and we made a profit. We had a website … [with] designs online, but we were mainly face to face sales; 20% of our profit went to charity." **Suhani, 14, UK**

"Politics, because I want to be a political leader [like] Abraham Lincoln." **Vedant, 13, India**

"More about nourishment because in my opinion it is important what we eat" **Paula, 15, Germany**

Survey Report

Teachers and parents told us their concerns

"Our children have lost all motivation because it's all about exams... and they're missing the whole point of education... they've lost that love of learning."
Parent/ teacher UK

"What happens is that school is so under the cosh of the system - fear of failing, fear of not meeting targets - that actually what [schools] are forced to do is make sure that [they] serve the system and that [they] tick the boxes."
Parent, UK

"Children can only aspire to what they know exists ... Museums and galleries, parks, zoos and all sorts of places can provide experiences that allow the child to connect reality with why they go to school [and give them] perhaps purpose, and motivation"
Parent, UK

"We had a massive learning curve. [Before] I would use technology like apps in the classroom for doing research but not actually teaching. I had never used Zoom before and on Monday, there I was teaching my Year 8 boys. So yes a massive learning curve."
Teacher, UK

"A lot of the kids are not accustomed to learning independently so you have to build up slowly. [We] can't expect them to do everything at once, so I try to do it in steps to help them learn." **Teacher, UK**

"Most of us are teaching towards the guidelines, exams, Ofsted's mark- scheme criteria... All it takes is for [Ofsted to say] we want independent learning online and then all teachers will be... trying to demonstrate this... And every head [will] jump on it." **Teacher, UK**

What does 1.3% get you?

The impact of COVID-19 and
why education is in the hot seat

by Richard Taylor

The impact of the ongoing COVID-19 crisis on education has been profound.

Despite almost three decades of investment in K12 edtech, the sector was unprepared for the sheer scale of change caused by lockdown.

My observations are those of a third-party participant — neither parent, educator nor student — but someone who has been involved in education and edtech as a business and as an investor for 30 years.

Many commentators have asked why the education sector wasn't more prepared to shift to online learning.

Reasons include minimal investment, poor systems, weak pedagogical content and a mismatch between the edtech provided and its use in the classroom. The 'build it and they will come' approach was an overarching idea of edtech investment that simply didn't work.

During lockdown, what did we see in general?

- A lack of coordinated responses;

- Rapid adaptation by some sectors, notably private schools;

- A reassessment by schools about which tech is of value and what they can realistically use;

- Significant barriers to usage caused by a lack of devices, teacher training and bandwidth;

- A growing awareness of the link between kids being at school and parents being able to work, i.e. (shocking though it may seem) that K12 schooling is also about childcare provision, not just learning;

- Likely large and long-term increases in the attainment gap; and

- A small number of success stories.

In effect, we have a large-scale K12 system whose 'fitness adaptation' has been found wanting, despite sizeable and long-term investments in whole edtech ecosystems.

Could we have done better? Probably, if what we had spent had been better conceived, delivered and measured. **Prior to 2020 the edtech market/spend in England ran at about 1.3% of the £48bn annual government spend on K12 in England. At around £630m p.a., that's not an insignificant sum, but much of the spending has either been lacking direction, over-directed, or poorly spent and implemented.** So, the tiny fraction of education spending committed to edtech was unlikely to have seen systems, schools, teachers and students well-prepared for remote learning.

In terms of edtech, schools have found that the order of importance has shifted to:

- Productivity systems like G-Suite for Education and Microsoft 365/Teams,

- VLE/LMSs (Virtual Learning Environments/Learning Management Systems) and similar platforms,

- Video and similar communications systems (Zoom, etc.),

- And finally, a slightly greater focus on content and assessment

While content should be the driver of edtech, the reality of the crisis has shown that, without higher-level enabling tools, there is a huge disconnect between the potential and the reality of content. Essentially, if educators can't manage systems to interact with and assist students, then learning is a much greater challenge.

Content is still important however, as engagement and deep learning depend on it. The problem is that for a long time, schools had trouble deciding what to spend their limited budgets on, and, in the main, focused on hardware and systems. In terms of content, if their budgets allowed, investment was usually limited to just one or two subject areas in the curriculum.

At the start of the pandemic, edtech players of every type and size began offering their products and services free or at huge discounts to schools, students and families. In the UK, the BBC also significantly increased its educational output via BBC Bitesize, a channel they have grown for 20 years.

However, the real success of edtech during the crisis (in the UK) hasn't been the BBC or local edtech companies (many of which have spent enormous amounts which may never be recovered), but a new charitable start-up called Oak National Academy (ONA).

While BBC Bitesize was built with over £100m (over 20 years) of licence fee funding, ONA quietly delivered around twice as many lessons (12m+ by mid-June) for UK teachers, made by volunteer staff using basic tech built in just seven days. The key to its success with teachers was its simplicity and ease-of-use as well as the direct connection to curriculum teaching.

Whether this equates to successful learning by students awaits to be seen.

In general, edtech content for teachers and the 'curriculum-led' approach is far-removed from the engagement, quality, range and interactivity of tech products that children generally use (and enjoy) in other aspects of their lives.

Most schools, educators, students and families have struggled in lockdown, and will continue to do so, as schools restructure to deliver a greater mix of in-person and online learning. Many seem to hope that in 18 months' time everything will be 'back to normal'. Edtech investors seem to have a different view with private capital around the world showing a new appreciation for this industry.

While edtech has many limitations, it is clear things have changed, and, if we learn from this, then education may be both different and better.

In many education systems, the ideological divide about state versus private education is vast, but a positive outcome of the crisis may be that the rapid adaptation by many private schools will create new models of hybrid education that could combine with and help improve all education systems.

"15 years ago, people said content was no longer king and so we invested lots in platforms & personalisation. After March 23rd content wasn't just king, it's now the Emperor & it's the other edtech companies who now have no clothes" [5]

To progress, we need much better strategic thinking about education and an acknowledgement that edtech has an important role to play, not to mention that teachers need to be trained so that they are as familiar and confident in its use as their tech-savvy students. That progress will be limited if we think we can change much by spending only 1.3% of our education budgets (UK) on any form of edtech for schools.

We could find that in a world of reduced government and school budgets, edtech will veer further towards the end-consumer (parent/ child) market just as tech has done in other sectors.

The learning brain

How the brain works and what we can do to help children learn

by Dr. Rebecca Torrance Jenkins

While the world has changed as a result of the Covid-19 lockdown, our brains have not.

The building blocks for learning remain the same. There is no doubt that living through lockdown and learning to learn at home has been a major change for our children. It is likely that suddenly replacing the physical interactions at school with a virtual, screen-mediated home-school, impacts brain functioning, psychology or behaviour for many children. But I argue that by using knowledge about how brains learn, learning can (and should) still thrive - even if it is 'remote'.

In the current context, there is a vital need for children and their parents to understand how learning happens.

The traditional boundaries between school and home, between teacher-led and child-led learning, have become more fluid. As a result, children need to be equipped with the skills to become independent learners and there is a vastly greater responsibility to keep children engaged in their learning.

So, how can we best support our children when learning outside the classroom?

First, we need to understand a bit about the brain. It is an incredibly complex network of nerve cells, or neurons (over 86 billion), with at least eight distinct neural systems whose interplay produces 'learning'. These include:

- processes that bank specific events into 'episodic' memory;

- the brain's ability to draw out patterns and themes from different systems (conceptual learning);

- deciding which brain modules to activate and deactivate to carry out tasks, whilst simultaneously integrating information from emotion (the control system);

- the ability to perform frequent and often unconscious activities like reading, which takes hundreds of hours to perfect (procedural memory); and

- traditional learning which happens from observation, and by following instruction.

It is then useful to know that the brain has priorities which it likes to meet in the following order:

- **First, movement:** brains evolved to allow movement (eg: fiddling, or even focusing eyes on text).

- **Secondly, emotion:** if a child is worrying about maths or not understanding a concept, anxiety will dominate and learning becomes harder.

- **Thirdly, socialisation:** we are socio-emotional beings, evolved to survive as a result of our mastery of social living.

- **Finally, learning:** be it multiplication or the nitrogen cycle, the brain will only focus on this once the other three needs are satisfied.

But learning is even more complex still. The information held in the brain exists between the actual neurons themselves; physically, in the connections. So, when a child learns about photosynthesis, this is first incorporated as an episodic memory in the hippocampus which then needs to be refined and linked with previous knowledge about plants or energy, and the irrelevant parts discarded. The 'photosynthesis' information is then shifted outwards to the cortex of the brain as part of the semantic memory. The knowledge *physically moves*. And when does this magic happen? When your child is asleep.

What can we do to help our children learn? To become successful, independent learners?

Teaching children about neuroplasticity has been shown to improve their learning performance[6]. It's as simple as knowing that brains change according to experience. So, if your child feels they aren't good at English comprehension, you can explain that, with persistence, they can alter the way their neurons interact to become more expert. As Aristotle said, we are what we repeatedly do.

The socio-emotional environment in which your child learns is also very important: one of our most important roles (if not the most), is to set the emotional climate so that a child feels secure and happy.

If a child is worried or fearful, their amygdala (the part of the brain which first receives stimuli from the outside world) becomes over-stimulated and 'non-essential' information cannot pass into memory storage. In a learning environment, pretty much everything is 'non-essential' in that it is not essential to survival. Likewise, if a child's amygdala is under-stimulated and they are bored, information won't become integrated into memory.

The key 'goldilocks' zone of mild stimulation happens when children are curious, excited by the learning or if some form of novelty is introduced. Brains have evolved to pay attention to new things. Making any topic exciting, or funny, or different, is to make it memorable.

One of the greatest gifts to give a learning child is the skill of self-regulation. It is a lifelong skill that sees them beyond school, as independent, flexible and adaptive learners. This can be achieved in three ways:

- **First, metacognition, or learning about learning.** Do I know my strengths and weaknesses? Which strategies could I use to learn? Does my approach work? How do I know? How could I do it better next time?

- **Secondly, challenge.** If learners aren't challenged, they won't develop new useful strategies, nor reflect on content or learning. The greater the struggle, the more likely it stays in long-term memory.

- **Finally, mindfulness meditation.** It improves focus, effectively extends working memory and strengthens the ability to resist distractions[7]. It is highly teachable, and some argue that the skills learned from meditation trump any content learning[8].

In conclusion, although the format of education may be in the process of change, the neural mechanisms of how our children learn remain the same. If they are able to learn independently, education can be less reliant on traditional classroom-based, subject-based, teacher-based formats.

Showing teachers and parents how to enhance the way their children interact with information, integrate it and apply it can only be beneficial. Teaching children how their brains learn, and how to make learning productive and pleasurable, is now more important than ever.

The requirements of effective online learning

Online Learning post-COVID for the 'Adaptive Learner'

by Dr. Dragan Gasevic

The COVID-19 pandemic marked an urgent pivot to online learning across all education levels.

The speed of lockdown, however, prevented adequate investment of time and resources to plan and prepare for this pivot. If certain lessons are learned and strategies implemented to improve students' online learning skills, we should see beneficial and lasting effects going forward.

Many institutions in higher education already used online education well before the COVID-19 crisis, typically through flipped or blended learning, and this will continue.

The question is what should be offered to students at school-level? First, are these students ready for the transition to online learning? If not, what can be done to prepare them? Will this help them become the 'adaptive learners' we need for university, the modern workplace and life in general? And finally, how can we test their learning progress and skills?

Are students ready for online learning?

Research shows that successful online learners need strong independent learning skills, high levels of self-motivation, good time-management, and competent technology and digital skills. Unfortunately, many students across all age-groups still need to acquire these skills. Even in higher education, many are not aware of effective techniques for learning (e.g.: students are not adept at searching for relevant information on the internet, judging the reliability of information sources or testing their own knowledge); being comfortable using a mobile phone or social media does not equate with strong digital *learning* skills.

So, how can we prepare students for online learning?

Effective online education requires significant upfront planning, installation of functioning tech infrastructure, creation of outstanding content, extra training for teachers, improved 'lesson' design and appropriate assessment – all of which need time and money.

In the meantime, students should not be left on their own to 'pick up' the skills they need. We should introduce strategies in schools now to develop these skills from early-schooling upwards, and especially for students aged 12-15:

- Schools should start by offering lessons on effective learning techniques;

- Digital technologies and student devices should be allowed in classrooms rather than banned;

- Students should be taught how to create search queries effectively and assess the quality of information sources critically;

- Students should receive feedback on their learning techniques, search strategies, and information sources.

Will this help students become the 'adaptive learners' we need for the modern workplace and life?

Information Science offers many pointers to effective ways for students to become 'adaptive learners', acquiring at the same time skills which help them engage in deep learning[9].

Unfortunately, the development of the 'adaptive learner' is not readily supported by current school systems. Numerous reports suggest the negative effects of high-stakes testing, where teachers are often pressured to teach to the test[10]. Teaching to the test involves practices that promote 'rote learning' and the development of isolated skills. Such teaching practices are associated with shallow learning, which in turn leads to the decline of intrinsic motivation[11].

Curiosity-driven learning is hard to accommodate in such environments, as topics that do not fit what is tested are not promoted. Learners also receive insufficient opportunity or encouragement to master effective study skills that can prepare them for self-led independent learning.

To counter this, students need:

- Sufficient prior knowledge to be able to construct new knowledge and to find and integrate relevant information[12];

- The skills to self-assess potential gaps in their learning accurately, to learn effectively, and to have self- confidence in seeking advice from others proactively[13]; and

- High belief in their own ability to learn across a wide range of topics and different situations[14].

How can we test students' learning progress and skills?

The development of the adaptive learner requires careful monitoring and assessment. Technology provides the tools for this as it allows the collection of unprecedented amounts of data about an individual student's learning. Just as a Fitbit collects data about a person's physical activity, the new scientific discipline of *Learning Analytics* collects data about learning activity[15].

Learning analytics complement psychometric assessment methods to create a powerful mix that can estimate learning progression, knowledge building, study skills, motivation, confidence, and the needs of each learner in real-time and over long periods[16]. Learning Analytics can also provide personalised feedback to the learner, encouraging the student to take agency over, and so optimise, his/her own learning. It can be the foundation of the way we evaluate young people as they become the independent adaptive learners that they need to be.
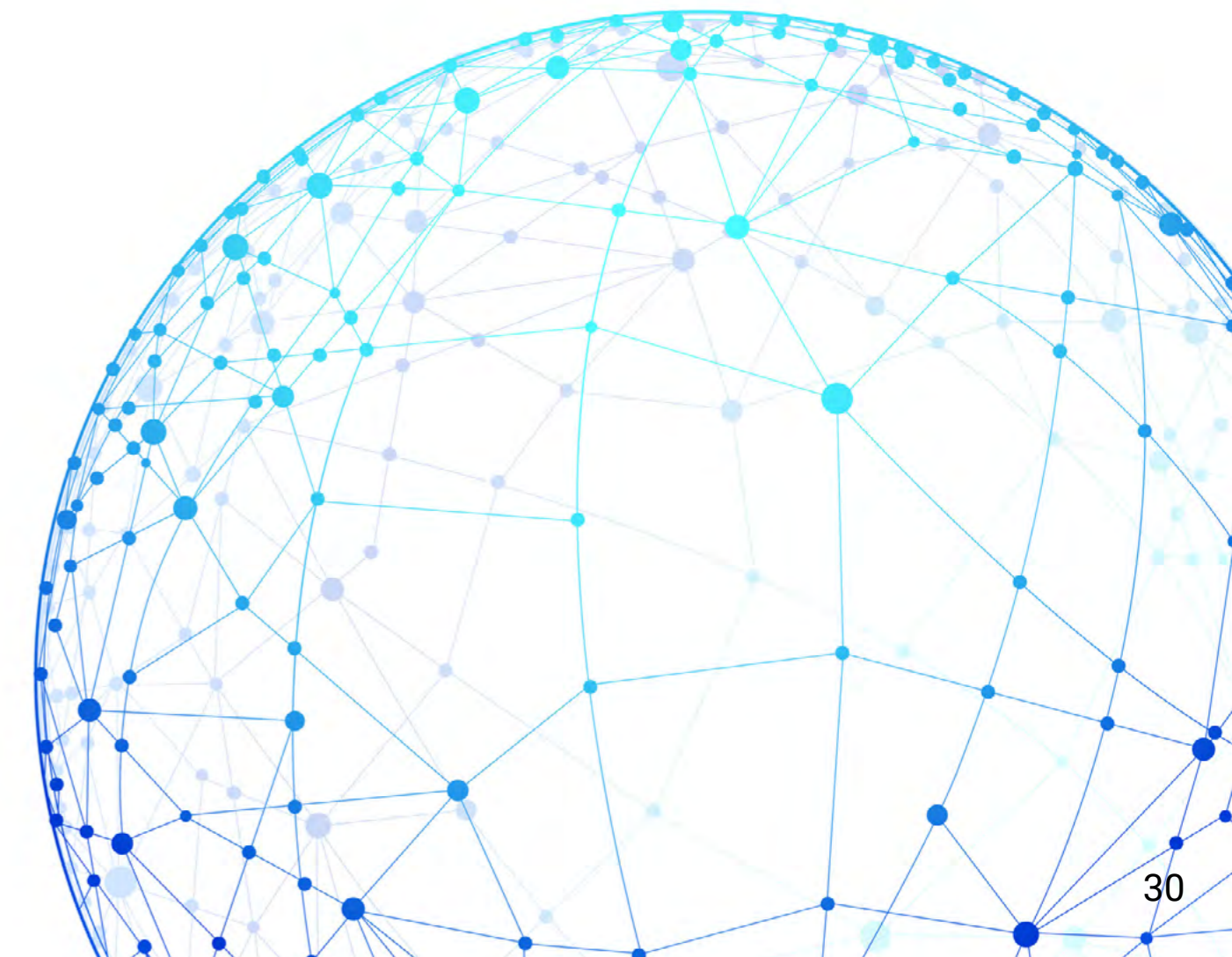
Lockdown online

A look at how most children spent
their time during lockdown

 by Sam Clough

Lockdown online

Pre-pandemic children and young people were already digital-first and tech-enabled with access to, or owning, an array of devices from tablets, mobile phones and consoles to headphones, smart speakers and wearables. They are adept at using their tech across a wide variety of online tools to create, collaborate and consume content.

And then the world changed, amplifying screen-time and creating a new generation of even more tech-savvy families. The pandemic has without doubt, changed the world, especially for children and young people who found themselves indoors, with increased free time and, like many parents, transitioned to remote, online, working i.e. schooling.

At SuperAwesome we saw weekday traffic effectively doubling in both the US and UK after schools closed, kids reported that their daily screen-time grew by 50% overnight.

In this unprecedented situation, school was replaced by remote, digital learning. But free time was also being replaced by digital time.

So, lockdown meant that kids, already adept at using a range of digital tools, upskilled to use them for all aspects of their lives: for play, for chatter, for collaboration, creation, for content, and for sharing.
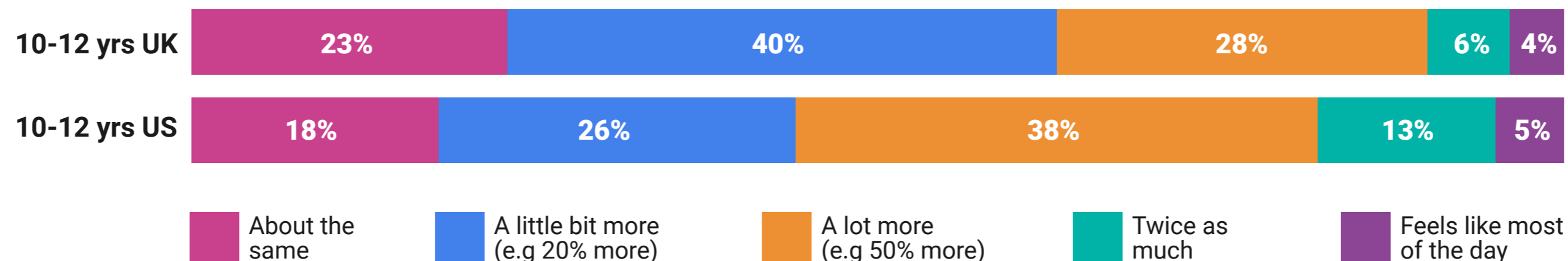
Certain platforms in particular have benefited from the increase in screen-time as kids migrated their playground chatter to Whatsapp and, in game chat, looked for lighthearted, snackable content on TikTok and PopJam, using video-calling to keep in touch with loved ones, online lessons and afterschool clubs. In fact, there has been a rapid uptake in video-calling technology, pulling B2B interfaces into the everyday world. Think Zoom after-school clubs, grannie Facetime and Houseparty play dates.

With the pandemic not over, this behaviour will further embed until it is as commonplace as picking up the phone was for previous generations.

Quarantine also changed the way we think about schooling. Remote learning has given even the youngest children a familiarity with digital tools that will feed into their school (and later, working) life, helping to create a workforce that is attuned to working collaboratively and remotely.

As schools across the secondary and primary sectors have had to embed even more digital resources to deliver the curriculum remotely, they have realised that they cannot go back to the way it was. Whether they use dedicated educational platforms like Seesaw or have adapted Google Classrooms, kids have had to learn how to collaborate and self (or parent-led) learn.

How much more time are you spending on a digital device now compared to before the Coronavirus started?[17]

	About the same	A little bit more (e.g 20% more)	A lot more (e.g 50% more)	Twice as much	Feels like most of the day
10-12 yrs UK	23%	40%	28%	6%	4%
10-12 yrs US	18%	26%	38%	13%	5%

Lockdown online

There is a growing recognition of the benefits of blending tech-enabled learning with more traditional methods as pupils return to the classroom.

We will see further changes, for example, flexible schooling patterns may reveal that teens learn better with later start times or an accelerated adoption of tech in the classroom - VR Geography anyone?

A final word for the parents who have had to catch/ keep up rapidly as kids have spent more time online:

77% (USA) / 70% (UK) said their kids are using their devices more since quarantine

More of everything:
- More video streaming services
- More games
- More chatting to friends or family

Having their kids at home has given parents an insight into the range of digital tools they use and they too are getting involved: using the tech, worrying about privacy, realising that conversations around how much screen time is appropriate are far more nuanced than they ever thought.

The world has certainly changed in many ways and none more so than for kids and technology, accelerating trends that were already happening tenfold.

Now you are spending more time at home, what are you doing more of with your time?

Legend: A little more (blue), A lot more (orange)
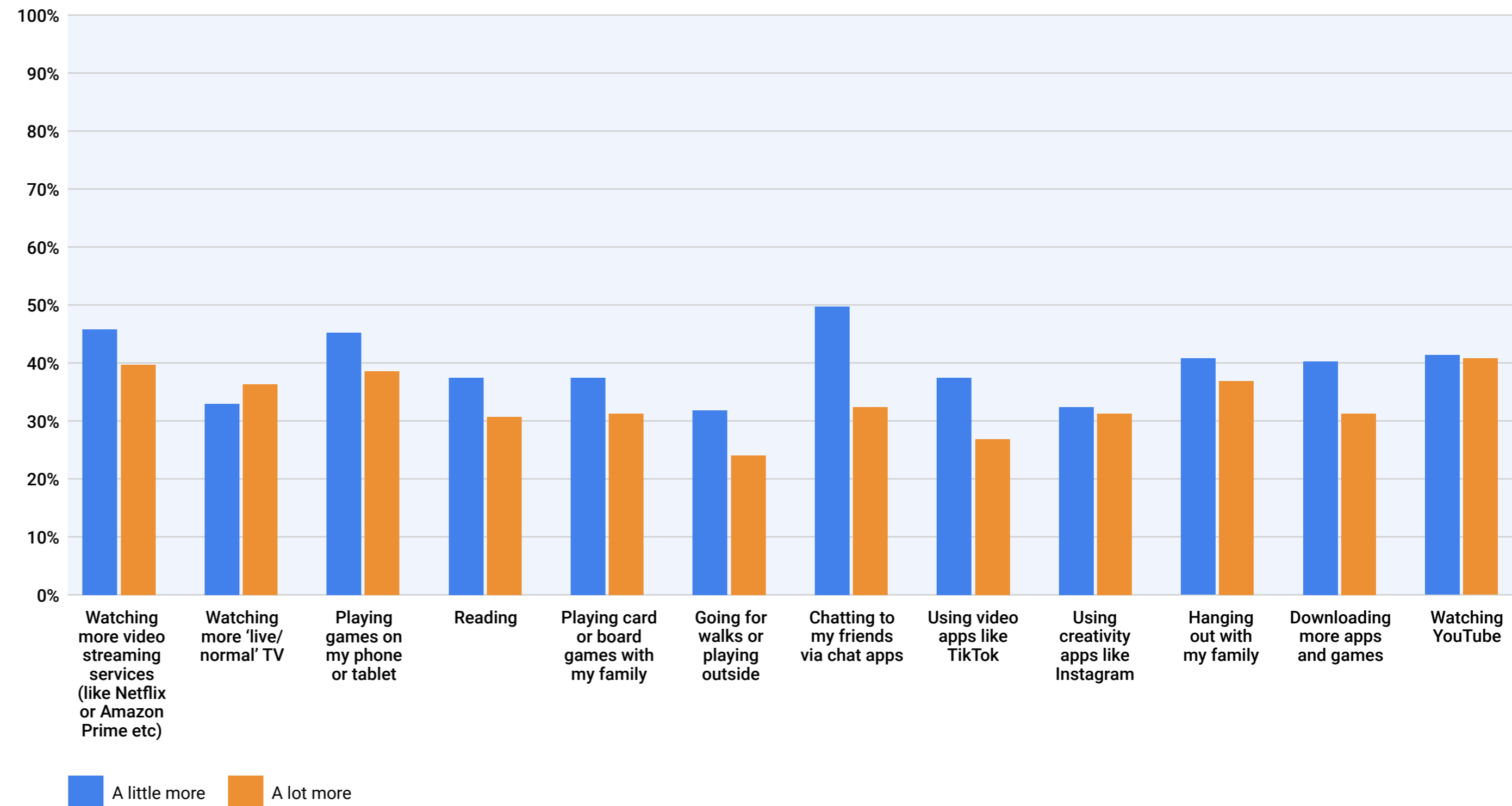
Data: Sourced from SuperAwesome's survey amongst 179 kids in the US between the age of 10-12 years old[18]

The response to lockdown

An overview of academic reports and media articles about how COVID has impacted the provision of education in the UK and worldwide.

The global response to lockdown

Government responses varied greatly from country to country, highlighting a deeply-fractured education divide

83% of the world's student population was affected by school closures[19]
50% had no access to a computer at home[20]

Spain set up a national website and TV channel with access to free resources created by its main educational publishers.

Mexico provided free educational TV and radio and 140 million textbooks.

Kenya broadcast educational radio and TV, with Alphabet providing Google's Loon balloons carry 4G across the country.

Argentina provided 14 hours a day of educational TV and 7 hours a day of radio, with each lesson broadcast by a teacher.

Poland launched 'Grarantanna' using an educational Minecraft server and publishing new challenges for students online every day.

China - set up all-day TV broadcasts of lessons in maths, language, English, art and even physical education for those without internet access or devices[23].

Cambodia launched Think! Think! with Japan's ICA, providing free learning content on TV, via Facebook and on YouTube.

As a result, many governments resorted to providing education on TV and radio[21]

But over 33% of students were still unable to access any form of remote learning (TV, radio or internet)[22]

The global response to lockdown

Against this background, teachers and parents around the world struggled

Teachers had to shift very quickly to online lessons to ensure learning continuity.

"It's a big mess, that's all I can say" said Huang Ting of PEER[24] in China, referring to the lack of a common standardfor lesson delivery, with teachers experimenting widely with different formats and variable success.

Teachers everywhere complained that they had no training for teaching remotely; and dealing with students virtually is very different from traditional classroom management[25].

"I had to put two different classes into one class of 16 children but not all of them showed up to every Zoom lesson... It was quite tricky navigating the images [of the kids] and I did have one parent email me saying - "Oh, you didn't choose my child to answer a question." **Teacher, China**

Teaching students to learn independently online has not been a focus of traditional schooling and, although there is no lack of product recommendations (for teachers and parents alike), finding the right products that will help their child learn is also a challenge.

Parents struggled to balance work, home and to support their children's schoolwork at the same time. "It's been hell"[26].

Almost **60%** of primary and **50%** of secondary school parents found it quite or very hard to support their children's learning at home[27].

" It's hard to police it because we're trying to work as well. My husband is at home working full time. I'm working some of the time and you can't be breathing down every kid's neck." **Parent, South Africa**

It has become clear that school isn't just a place for children to learn, it's also childcare[28].
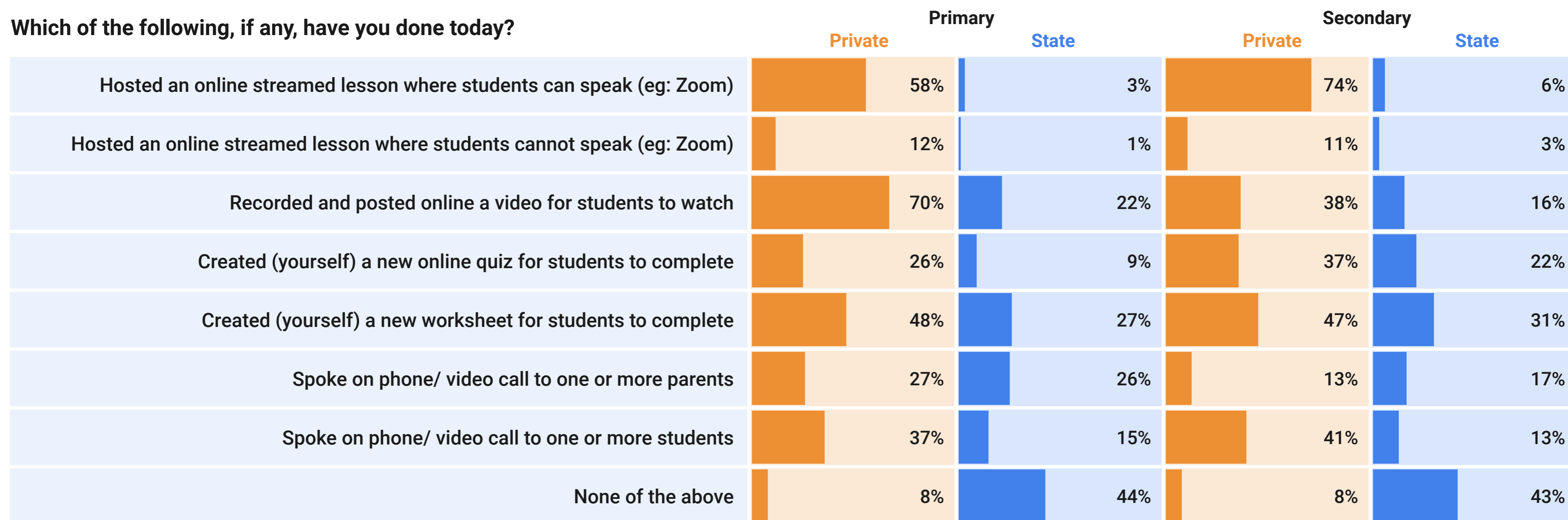
But parental support is key:

"The different progress students have made depends on their parents. So if the parents were really involved, encouraged them to do the work... then the children would do it. But [some] parents aren't as hands on with their children... and that's had a negative impact on their children's progress." **Teacher, China**

Huge disparities emerged in the UK

"One-third of pupils are not engaging in any work"[29] while *"schooling [is] virtually the same"* for others[30].

Which of the following, if any, have you done today?

	Primary		Secondary	
	Private	**State**	**Private**	**State**
Hosted an online streamed lesson where students can speak (eg: Zoom)	58%	3%	74%	6%
Hosted an online streamed lesson where students cannot speak (eg: Zoom)	12%	1%	11%	3%
Recorded and posted online a video for students to watch	70%	22%	38%	16%
Created (yourself) a new online quiz for students to complete	26%	9%	37%	22%
Created (yourself) a new worksheet for students to complete	48%	27%	47%	31%
Spoke on phone/ video call to one or more parents	27%	26%	13%	17%
Spoke on phone/ video call to one or more students	37%	15%	41%	13%
None of the above	8%	44%	8%	43%

(Teacher Tap - survey of 8000 UK teachers - May 2020)

Huge disparities emerged in the UK

Differences in the provision of education as between the state and private sectors exacerbated the divide

STATE VS. PRIVATE
31% of private schools provided four or more live online lessons daily, as compared with just **6%** in state schools[31], and **71%** of state school children had no or just one daily online lesson[32]

TIME SPENT LEARNING
Pupils in the UK studied on average just 2.5 hours per day[33], and over 2 million children did no or less than one hour's work per day[34]

DIGITAL ACCESS
One in five children on free school meals had no access to a computer at home[35]

ENGAGEMENT
Students with limited access to technology and/or study space, vulnerable children, those with special educational needs and disabilities were found to be less engaged[36]

SUPPORT
Children from better-off families spent **30%** more time on home learning than those from poorer families and received more learning support[37]

ECONOMIC BACKGROUND
30% of middle-class students are more likely to take part in live and recorded lessons vs **16%** from working class homes[38]

How did the online education sector respond?

Ed Tech companies responded with 'free' access to resources

As online resources have gone from a "nice to have" to a "must-have", many e-learning providers dropped pay walls resulting in a surge in website traffic[39]:

- **Khan Academy reported 2.5-3 times more traffic than usual**

- **Edmodo server hosting costs increased four-fold due to increased traffic**

- **Coursera acquired 13 million new users[40]**

- **Oak National Academy reached 20+ million online lessons in its first term[41]**

- **In China, daily active users on education apps went up by 46%[42], and**

- **Language learning app Duolinguo experienced 148% user growth in the US[43]**

Structural tech provision from global giants Microsoft, Google and Zoom are also shaping how education will be organized once the pandemic is over. The need for access to the internet has become crystal clear.

It remains to be seen how many companies (and which ones) retain and grow their new users once their online resources are no longer free.

So, what's next...

Children are now returning to school across the world but governments, education providers and teachers are keenly aware that the status quo may quickly change once again.

It is imperative NOW to prepare, not only for the possibility of further lockdowns, but for the longer-term benefits that online learning can provide if accessible, adequately funded and properly used.

Invest in access to Edtech...

"Progress will be limited if we think we can change much by spending only 1.3% of our education budgets (UK) on any form of Edtech for schools" **Richard Taylor**

Edtech content needs to improve...

"Edtech for teachers and the 'curriculum-led' approach is far-removed from the engagement, quality, range and interactivity of tech products that children generally use (and enjoy) in other aspects of their lives." **Richard Taylor**

Give children 'agency' in their learning...

"The traditional boundaries between school and home, between teacher-led and child-led learning, have become more fluid… Children need to be equipped with the skills to become independent learners and there is a vastly greater responsibility to keep children engaged in their learning." **Dr Rebecca Torrance Jenkins**

Introduce strategies in schools now to develop independent online learning skills...

"[Provide] effective ways for students to become 'adaptive learners' [and use] learning analytics to … estimate learning progression, knowledge building, study skills, motivation, over long periods" **Dr Dragan Gasevic**

The world has changed; children use digital tools in all aspects of their lives: for play, chatter, collaboration, creation, content, sharing and now learning...

"Recognise the benefits of blending tech-enabled learning with more traditional methods as pupils return to the classroom" **Sam Clough**

Notes

1. **Map the Territory**, a leading consumer strategy agency and **Tapestry Research**, an award winning research agency

2. Professor Dragan Gasevic "The requirements of effective online learning" – Page 29 of this Report

3. "The Response to Lockdown" – Page 42 of this Report

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17. SuperAwesome report – "Meet Gen C" April 2020

18. SuperAwesome report - "Everyone's a kid and family brand now" April 2020

Notes

19 Education: From Disruption To Recovery

20 Startling digital divides in distance learning emerge - UNESCO 21 April 2020

21 How countries are supporting remote learning

22 1/3 of the world's children unable to access remote learning

23 The Coronavirus Exposes Education's Digital Divide

24 ibid

25 How Did COVID-19 Change Your Teaching, for Better or Worse? See Teachers' Responses

26 Coronavirus: Home-schooling has been hell, say parents

27 The Results Are In For Remote Learning: It Didn't Work

28 https://www.nytimes.com/2020/10/13/opinion/coronavirus-schools-child-care-centers.html

29 A third of pupils 'not engaging with set work'

30 Life virtually the same for some pupils in the new divide

31 Schoolwork in lockdown: new evidence on the epidemic of educational poverty - Institute of Education

32 ibid

33 ibid

34 ibid

35 ibid

36 Schools' responses to Covid-19: pupil engagement in remote learning

37 http://i7.cmail19.com/ei/j/FE/3E5/D1A/csimport/11data.132354.png

38 COVID-19 and Social Mobility Impact Brief #1: School Shutdown

39 Itza Media data analysis from SimilarWeb's analytics platform

40 Traffic Is Booming For Online Education Providers. But So Are Costs

41 ONA hits 20m + lessons -July 2020

42 China's Online Education Sector Booms As Epidemic Keeps Students Out Of Schools

43 https://www.businessinsider.com/duolingo-sees-spike-in-new-users-during-coronavirus-pandemic-2020-4?r=US&IR=T

Our mission is to enable young people to be free
to learn independently and safely online and to
equip themselves for the digital workplace