

The Future of Learning

Unleashing the Potential of the
UK's EdTech Sector

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About the Startup Coalition

The Startup Coalition is an independent advocacy group that serves as the policy voice for Britain's technology-led startups and scale ups. Startup Coalition was founded as the Coalition for a Digital Economy (Coadec) in 2010 by Mike Butcher, Editor-at-Large of technology news publisher TechCrunch, and Jeff Lynn, Executive Chairman and Co-Founder of online investment platform Seedrs.

We fight for a policy environment that enables early-stage British tech companies to grow, scale and compete globally. We have over 3000 startups in our network and have been instrumental in building proactive coalitions of businesses and investors on issues that are integral to the health of the UK's startup ecosystem.

Our work has seen many successes, from the establishment of the Future Fund and the expansion of the Tier 1 Exceptional Talent Visa to the delivery of the UK's Patient Capital Fund. We represent the startup community on the Government's Digital Economy Council, and the UK on the board of the international group, Allied for Startups.

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We're extremely grateful to the members of the startup community, investment community, local government community and other stakeholders for their time in contributing to this report. Ultimately, this report is for you and about you. Please keep the feedback coming.

Introduction

EdTech startups support and augment learning through digital innovation. Their platforms and services are typically designed to enhance the experiences of learners and educators by automating repetitive tasks or monitoring a learner's progress. EdTech startups can be found innovating at all levels of the UK's formal education system, as well as in individual learning and in-work training.

From educational computer games to SMART boards to language apps, technology has modified and improved how we learn since the late 1990s. Before the COVID-19 pandemic, EdTech in the UK was already experiencing substantial growth – in 2019, the UK was already the largest EdTech market in Europe. But the disruption the COVID-19 pandemic brought to daily life, and in particular education, catalysed an explosion of interest in, and uptake of, EdTech. In 2021 the UK took in just under 30% of the value of all EdTech deals across Europe.¹ For many, this has cemented an enthusiasm for hybrid and remote forms of learning, as well as products that – through their digital nature – can be more responsive than traditional learning tools. Now, on the other side of the pandemic, there is an increased urgency to improve continued access to EdTech across the country.

In 2022, the Government released its *Levelling Up in the United Kingdom White Paper*, which put education and skills at the heart of the UK's plan for increasing prosperity and equality.² Programs like The Lifetime Skills Guarantee, which offers free upskilling and reskilling programs and skills bootcamps for adults, also brought cloud-based learning platforms into the mainstream of education policy. From Shadow Minister for Skills Seema Malhotra to Prime Minister Rishi Sunak, policymakers are increasingly interested in how emerging technologies – especially Artificial Intelligence (AI) – can benefit education.^{3,4} On 30 October 2023, The Government announced that up to £2m would be going to support the development of AI-powered resources for teachers.⁵

Parallel to the increased interest in EdTech, EdTechs themselves are evolving. Startups are increasingly employing new technologies like Augmented Reality (AR) and Virtual Reality (VR) to create new types of immersive learning. AI is also increasingly integrated into new and existing EdTechs, with uses ranging from administrative support for teachers to personalising learning for students. When used in conjunction with educators and other tools, these technologies can help education at all levels be more engaging, creative, and responsive to individual learners' needs. Platforms enabling hybrid learning could, for example, make education more inclusive and accessible to students with disabilities, learning difficulties, or chronic health conditions. Learners in remote or otherwise inaccessible locations also have new opportunities to access the best education possible without needing to relocate.

¹ Department for Education (2022). *Future opportunities for education technology in England*. p 10

² Department for Levelling Up, Housing and Communities (2022). *Levelling Up the United Kingdom*. 2 February 2022.

³ Quench.ai (2023). *AI & the Future of Skills - Episode #2*. *Linkedin.com*. November 9, 2023

⁴ Department for Education, The Rt Hon Rishi Sunak MP, and The Rt Hon Gillian Keegan MP (2023) *New support for teachers powered by Artificial Intelligence*. 30 October 2023.

⁵ Department for Education, The Rt Hon Rishi Sunak MP, and The Rt Hon Gillian Keegan MP (2023) *New support for teachers powered by Artificial Intelligence*. 30 October 2023.

Early adopters already report benefitting from the use of AI and other emerging technologies in the classroom. Respondents to the Department for Education (DfE)'s 2023 Call for Evidence into Generative AI in education cited that it saved time, supported high-quality and creative teaching, and increased teacher confidence.⁶ The benefits to today's students go beyond just a better understanding of grammar or maths. Bringing more technology into classrooms creates an opportunity for young people to develop the tech and AI skills that will be indispensable when they enter the job market. But the Call for Evidence also cited concerns: that students would become over-reliant on AI tools, that students would use AI to cheat, or that AI would give students incorrect or misleading information.⁷ It will be crucial that we create a policy environment that addresses these concerns while optimising the benefits of AI in education going forward. If we fail, we risk not only stifling innovation but also expanding gaps between those who benefit from new technologies and those who do not.

Because of this explosion in EdTech, Startup Coalition is deep-diving into the UK EdTech startup ecosystem to explain the sector, its opportunities and its challenges.

⁶ *Department for Education (2023) Generative AI in education Call for Evidence: summary of responses.* 28 November 2023.

⁷ *Department for Education (2023) Generative AI in education Call for Evidence: summary of responses.* 28 November 2023.

The State of EdTech

565

high growth EdTechs in the UK¹²

1

UK EdTech Unicorn: Multiverse⁸

Investment in the sector increased **tenfold**

Between 2014 and 2021¹⁵

4%

of education spending is on tech⁹

UK teachers believe cost, pupils' access, and perceptions of staff confidence with tech are the biggest barriers to EdTech adoption¹³

By 2025¹¹ the EdTech sector globally is predicted to be worth

\$404bn

£19.9bn

estimated worth of educational exports to UK economy in 2016, up

22% from 2010⁵

88% of Headteachers

cite teacher skills and confidence as hindering EdTech adoption¹⁰

88% of Headteachers

and 84% of Teachers

believe technology has or will contribute to improved pupil attainment¹⁴

30%

of all EdTech investment coming into Europe goes to UK firms.¹⁶

⁸ HolonIQ (2023). *The Complete List of Global EdTech Unicorns*.

⁹ Department for Education (2022). *Future opportunities for education technology in England*. p 16

¹⁰ Department for Education (2021). *Education Technology (EdTech) Survey 2020-21*. p 20

¹¹ HolonIQ (2020). *10 Charts for a Changing Education Market*.

¹² Beauhurst (2022). *25 Top Edtech Companies in the UK*.

¹³ Department for Education (2021). *Education Technology (EdTech) Survey 2020-21*. p 93

¹⁴ Department for Education (2021). *Education Technology (EdTech) Survey 2020-21*. p 14

¹⁵ Department for Education (2022). *Future opportunities for technology education in England*. p 10

¹⁶ Department for Education (2022). *Future opportunities for technology education in England*. p 10

The Future of Learning

For this report, we spoke to startups creating tools that help teachers, school administrators, individual learners, and students of all ages. Many startups are pushing boundaries to bring new and emerging technologies into the classroom or to increase opportunities for lifelong learning. While these technologies do not encompass the entire breadth of the EdTech sector, they provide a glimpse into the future of how technology could be utilised to complement teaching and improve outcomes. Our ability to optimise the benefits of these technologies in education will be contingent upon effective regulation and policymaking. As such, we thought it would be beneficial to highlight some of the newest advancements in EdTech and the opportunities they present.

Artificial Intelligence

In 2020, ChatGPT brought AI into the mainstream – it went viral for being able to understand, synthesise, and produce human-like language with just a few prompts from its users. But Chat GPT is just one of a variety of different AI technologies, which can include machine learning that can adapt and improve how it analyses big data sets, expert systems that rely on predefined and niche rules and knowledge, natural language processing capable of tackling and creating human language as it is spoken today, and robotics that use computer vision, sensors, and decision-making algorithms to handle everything from everyday tasks to complex manufacturing processes. In education settings, a mix of these AI technologies can enhance learning experiences, personalise instruction, and improve administrative processes.

For teachers, AI can provide greater support in automating administrative tasks like creating lesson plans and classwork, grading, or record-keeping. The ability of AI to analyse large quantities of data can provide teachers with detailed analysis of student data at micro and macro levels. Bespoke AI analysis of student-specific data can help teachers identify which students are struggling and may need additional support. It can also provide predictive analysis for student outcomes. On a wider scale, AI can identify trends in education and educational research more broadly that can feed back into teaching methods.

Students can also benefit from using AI themselves. Integrating AI into learning platforms can help create a personalised learning plan, tailored to students' individual learning styles, needs, and preferences. Individual learners can set their own pace with responsive AI platforms that can identify and generate more content in areas where learners need extra practice. AI can also act as a personal tutor, providing real time feedback to facilitate better learning outcomes. For disadvantaged students in particular, AI presents an opportunity to access individualised support outside of the classroom. AI can also provide better support for students who may have more complex learning needs – such as English as an Additional Language (EAL) or Special Educational Needs and Disabilities (SEND) students – through personalisation and real-time translation. Similarly, methods of testing and instruction can be modified to suit a learner's needs, often closely reflecting real-world applications of the materials.

AI is poised to change the future of work and our society more broadly. AI literacy, the skills and competencies required to use AI effectively and critically, will be crucial for today's young people – even before they enter the workforce. The use of AI in the classroom provides students with a controlled

environment to develop an understanding of how AI can be employed safely, as well as its potential harms and associated ethical concerns. AI EdTechs can provide students with first-hand experience utilising AI as a tool to augment learning and increase productivity. As a result, young people will have a greater potential of leaving school with a comprehensive understanding of how AI works, making them more prepared to enter the workforce.

Immersive Learning

Immersive learning utilises AR and VR technologies to provide students with digitally rendered scenarios and environments that are interactive and do not depend on the boundaries that usually constrain the physical world such as cost, the laws of physics, or location. AR can be used to digitally enhance the user's real-world view by, for example, making a historical artefact or a wild animal appear to be in their classroom. VR systems create an entirely digital experience that can simulate a real-world one, giving learners the ability to experience visiting one of the great wonders of the world or driving a car without leaving their desks.

In educational settings, students can use immersive learning to practise their technical skills in a controlled environment, explore history, and visualise complex concepts like mathematical theories. It can provide new ways of learning and testing students' understanding. Simulated practice exercises for things like military training or surgical procedures best illustrate how immersive learning systems can be a less expensive and safer method for developing specialised skills than traditional methods. Students can make mistakes without risk and can have more opportunities to practise without being limited by the cost or availability of the tools needed for practice. Immersive learning is already being used to train the next generation of surgeons: in 2022, Guy's and St Thomas' NHS Foundation Trust hosted a VR training event where trainees practised performing knee replacements and other surgical procedures in a simulated operating theatre.¹⁰

Increasingly, AR/VR technologies are further enhancing learning through the addition of AI technologies like computer vision. Immersive learning software can provide immediate feedback, showing students how to best improve their skills. With AI, these systems can tailor learning to suit individual needs and create predictive models of student outcomes. AI can also be utilised to create new and dynamic visual content and more organic interactions for the learner than were previously ever possible.

Startups like **Attensi** use AI-powered 3D simulations and gamification to provide simulation training. Their immersive technology can be used to train employees in real-world situations ranging from customer interaction to digital transformation.

Attensi's AI can support real-time interactions and provide targeted suggestions or tailor difficulty levels to suit the learner's needs, to make employee training more engaging and effective.

Businesses that have used Attensi report better outcomes for their employees when compared to more traditional styles of workplace training.

Skills Training

Immersive Learning and AI EdTechs often operate within more traditional skills training startups: EdTechs that can support skills development by offering a wide range of courses, modules, and resources designed to advance both technical and soft skills. They include online platforms that provide extra support for students through enhanced learning opportunities, tutorial support for their academic studies, or targeting specific career skills for adult learners of all ages. Some skill-training EdTechs can facilitate technical and vocational training through the likes of Multiverse, the UK's first EdTech unicorn focused on apprenticeships, or Makers Academy, a coding bootcamp that provides learners with remote, hybrid, and in-person learning options. With shorter digital courses, these programs can be updated more quickly than standard curricula. Skills programs are increasingly AI-enabled to provide instant feedback, language translation, and personalisation for learners. With AI, the platform itself can set the pacing of coursework to suit students' needs and tailor the delivery of educational materials to fit individual learning styles. It can also collect and analyse student data, providing educators with a clear picture of students learning attainment and needs. Skills training startups like these have expanded opportunities for people who might struggle to attend in-person courses and provide additional support for people who struggle academically but don't want to be singled out from their peers.

AI EdTechs focused on skills training can support learning at all ages. For younger students, AI can help teachers identify learning difficulties early to ensure they get the right support as soon as possible. It can speed up or slow down lesson plans to let children learn at the speed right for them. This personalisation can be particularly beneficial for neurodiverse students, who can have coursework tailored to suit their unique learning needs. Teachers can get comprehensive data on students, and on the effectiveness of the curricula more broadly, to ensure they are designing and delivering the best possible learning experiences for students. Integrating AI into EdTechs already using gamified learning strategies, which introduce game-like elements into learning materials, can create a more adaptive learning experience that will keep learners of all ages engaged. As the needs of employers are shifting, skills-training platforms can be a critical tool for enhancing the skills of people just entering the workforce or upskilling workers to support their career progression. Lifelong learning and retraining opportunities can support workforce retention and can provide increased opportunities for career changes.

CENTURY Tech is an AI-powered online learning platform that creates personalised learning pathways for each student and provides teachers with intervention data, which helps teachers identify learning problems and devise and implement solutions.

Activate Learning is an education group that employs CENTURY Tech for adults studying to take or retake their Maths and English GCSEs. Adults who don't currently hold GCSE grade 4 in these subjects can study for their GCSE qualification free of charge.

In its own words, Activate Learning is "achieving amazing results with online learners" in adult GCSEs and has a much higher pass rate than comparable adult maths GCSE courses with traditional delivery models.

Policy Challenges

While these advancements in EdTech hold great potential for enhancing learning, we need a policy environment that can adapt to this new technology if we want to reap the benefits. The subsequent sections will highlight some of the key policy challenges EdTech startups currently face. We also highlight some positive steps the Government is taking and conclude with policy recommendations.

All startups struggle with foundational issues of access to talent and finance. They are core campaigning issues for Startup Coalition and were consistently the first discussed issues faced by the majority of EdTechs we spoke to for this report. But, in addition to these bread-and-butter issues, we believe EdTechs in the UK face specific challenges which we set out in more detail below.

Procurement

When public procurement works for innovators it's a win-win: public services get better products and services, while startups access another way to scale and prove the case for further investment. Too often though, public procurement processes are too complex to make it worth startups pursuing. Through legislation such as the Procurement Bill and the Transforming Public Procurement programme, the Government has the stated aim to further open public procurement to new entrants such as small businesses and social enterprises.

Incoherent Procurement Framework

A common theme amongst many of the EdTech startups we spoke to was the perception that there is no clear framework for EdTech procurement in the UK, making the process of being procured by a school or university difficult for startups. Frustrations with the current system of procurement include difficulty finding the right person to talk to about the procurement and a lack of meaningful market engagement by procurement officials in the public sector more broadly.

The DfE's 2021 and 2022 reports on the perception and experience of EdTech seem to tally with startups' experiences. The *Future opportunities for education technology in England* report cited a lack of easy access across the board as adding another layer of difficulty for teachers and procurement officials already struggling to understand the market, including getting familiar enough with the products that they want to use them: "one workshop respondent noted that even EdTech events and training were expensive, which further restricted access to best practices and networks".¹¹ The same report also noted that unawareness of the market can negatively seep into a wider approach towards EdTech suggesting: "some teachers view EdTech as an afterthought and have a "tick box mentality" where they view their role as limited to adding minor IT components to existing teaching. As one [workshop] participant said, "teachers are not really on board with the idea of planning EdTech to be core."

Teachers need to be able to confidently use technology in the classroom if we want to see it adopted more widely. Barriers to procurement will translate to inequitable adoption of technology, meaning students at schools with less resources will fall behind their peers on AI Literacy and digital skills. Fundamentally, educators need to have easy routes to understand what technology is available to them and how to access and implement that technology to be able to engage with the procurement process. Similarly, existing procurement frameworks need to be simplified so teachers can have access to the most novel tools on the market.

“Despite our proven track record of delivering results for corporates, procurement as a new and innovative player is difficult. It is tough to connect with key stakeholders, and knowing one person in the organisation is not enough. You have to know ten. With established institutions like universities, anecdotally, some feel threatened by the model.

Again anecdotally, it can be organisations like Business Schools who understand that we are not competing with them and want to invest in their student's experience.” – **C-Suite Exec, Online Learning Platform**

Software Lock-In and Entrenchment of Existing Market Offerings

Startups have also reported to us that another barrier to procurement is how incumbent software providers can make it difficult for new products to integrate into existing systems. In 2020, Education Software Solutions (ESS) provided 70-80% of UK schools with SIMS, the UK's leading data management system for all school operations and handles all information on staff and students.¹⁷ Startups have told us that SIMS can make it harder for them to integrate into existing software or create specific intermediary solutions. This can disrupt the delivery of their products and services and can put off other procurement officials and teaching staff from pursuing their products and services further.

Startups consistently described how schools have expressed interest in their products but then seemed unable to integrate the software into existing management systems. As a result, startups have reported struggling to be procured by schools. One teacher mentioned that they have to log student data across multiple software programs, without the ability to collate the data in a single platform, which can discourage the takeup of new programs. In 2022 ESS decided to switch up their annual rolling contracts

¹⁷ Competition Markets Authority (2021). Anticipated acquisition by Montagu Private Equity LLP where it agreed to (i) acquire certain ParentPay (Holdings) Limited (PPH) securities, and (ii) sell its shares in Capita ESS Limited (ESS) to PPH, in consideration for further securities in PPH. Decision on relevant merger situation and substantial lessening of competition. p15

with schools for three-year fixed contracts, leading some schools to complain it effectively made it impossible to switch to a different software provider. This was concerning enough that the Competition and Markets Authority (CMA) opened an investigation into whether ESS's conduct was anti-competitive by effectively limiting schools' ability to switch to their competitors.¹⁵ After allowing schools to break their contracts early, ESS's market share is now estimated to be closer to 50%, indicating that schools may also be growing tired of the status quo.¹⁸

Many EdTechs report being frustrated with a culture that rewards sticking to established products. By incentivising the people responsible for procurement to stick with existing technologies, the system ends up disincentivizing new products from entering classrooms. As a response, many EdTechs have told us that they pivoted to offering products for individual learners, rather than classrooms. Others have told us of their frustration that too many schools and universities end up relying on mass-market products – typically designed for adults in corporate settings – rather than tailored made to children and learning. Children get stuck with clunky, out-of-date tech that is more difficult for teachers to manage.

As a private company, navigating the chain of command in our efforts to work with schools has proven to be a challenging task. Despite our efforts to attain accreditation, which would enable them to apply for funding with our assistance, there is a lack of consistency among schools.

Our goal is to bring about positive change in the British education system, but we continue to face difficulties when approaching governing bodies such as the DofE, local councils, and school trusts - **Co-Founder, Online Learning Platform**

On 30 October 2023, The Government announced that up to £2 million would be going to support the development of AI-powered resources for teachers. The funds will build on a pilot program run by Oak National Academy, an organisation created by the Government during the Covid-19 Pandemic to support distance learning which has continued as an independent body working to support teaching. The funded program will build on an earlier pilot program that developed lesson plans and quizzes using AI. The Government's stated goal is to finance the improvement of these AI tools before making them free to use for teachers across England.¹⁹ It is encouraging to see the Government so clearly backing the adoption of EdTech. By taking steps to remove barriers and improve the educational tools available, this program is set to support the teachers and ensure the right tech enters schools. However, the Government should

¹⁸ Competition Markets Authority (CMA). 2023. Acquisition by The Key Support Services Limited of Schools Educational Software Limited Decision on relevant merger situation and substantial lessening of competition.

¹⁹ Department for Education, The Rt Hon Rishi Sunak MP, and The Rt Hon Gillian Keegan MP (2023) *New support for teachers powered by Artificial Intelligence. 30 October 2023.*

proceed with caution to ensure innovative companies are not shut out from the EdTech space. The UK's AI Edtechs are creating new technology all the time, and teachers are likely to have different wants and needs for that technology. Going forward, it is crucial that earlier issues with procurement shutting out innovative companies are not repeated with these new technologies.

Regulation

Startups are created to do things differently and take the sorts of innovation risks other companies are unwilling or unable to. When it comes to regulations, startups are often vulnerable on two counts: First, they can fall within regulatory gaps because they are doing something that other companies are not; and second, in their early stages, tech startups are typically resource and time-poor, meaning unclear or excessive regulatory requirements represent a much higher comparative burden on them than they do for larger businesses.

EdTech is inherently a cross-sector technology. As a result, EdTech startups – especially those utilising AI – feel hampered by a lack of clarity and collaboration from regulators. This is echoed by the fact that many EdTech startups have questioned whether education regulators are adequately informed and resourced to handle emerging technologies in educational spaces.

Unclear regulation can have an outsized impact on startups. They often struggle to understand compliance requirements and potential costs – as can academic institutions looking to adopt EdTech. Similarly, poorly drafted legislation can leave founders in limbo. This also can often have knock-on effects on attracting investors, as ongoing regulatory uncertainty increases the risk profile for EdTech startup investments at a time when they urgently need capital to grow and scale.

“In some cases, crucial legislation was written before online learning was a possibility. If it isn't updated, it can leave needless hurdles in the way of EdTech startups and the learners that rely on them - many of whom are people who are normally excluded from in-person learning” -
Director E, Learning Business

Liability

New technologies are changing the education landscape, but EdTechs risk being caught up in legislation designed around offline learning. The ability of learners to seek personalised learning support through new tech makes the risk of plagiarism a larger concern for educators and policymakers. While many companies are working on detection problems, the rapid advance of LLMs like Chat-GPT has made

plagiarism easier and detection more difficult. Now, unclear and out-of-date legislation puts EdTechs at risk of being liable if students use their products to cheat.

Unclear language in the “Skills and Post-16 Education Act” is one such legislative problem for EdTechs. A late-stage anti-cheating amendment, aimed at penalising essay mills, has ended up netting hundreds of EdTech startups as bycatch. The language, centred primarily around the interpretation of “completing... part of an assignment... or providing material to the student in connection with the assignment,”¹² means EdTechs risk being made liable if they give students normal assistance or advice, such as enabling students to learn from example answers or formulas.

A report from UCL titled *AI Providers as Criminal Essay Mills? Large Language Models meet Contract Cheating Law* suggested that this section of the Act is “mostly symbolic.” It posited that the amendment’s purpose is more to provide clarity to students on the illegality of essay mills.²⁰ However, the risks are real for EdTech startups, especially those currently raising investment rounds, who have now been thrown into legal uncertainty. We have heard from founders that this legislation has deterred potential investors and hurt their fundraising efforts.

Research by the Economic Policy Group showed that 87% of the companies they sampled could be impacted by the bill.²¹ In evidence to the Public Bill Committee, Course Hero even went so far as to assert the amendment would “likely criminalise activities undertaken in furtherance of the Government’s own flagship National Tutoring Programme”.¹⁴ Startups that offer automatic grammar checking or those that enable students to connect and discuss issues – platforms such as The Student Room, which hosts forums devoted to enabling students to help each other with GCSE, A Levels, and university assignments – are now in a legal grey area. Our recent survey of AI founders, including EdTech AI founders, asked them what they thought of the possibility of being made liable for their innovations: 76% told us their business model would be either negatively affected or become unfeasible.²²

If we want to unleash the potential benefits of EdTech, this needs to be remedied. The UK’s robust liability protections are part of a set of rules that have underpinned the success of the UK’s tech sector. Making startups liable for the actions of their users makes their venture more risky and is likely to undermine wider EdTech innovation as well as their effective mission statement. If the goal of many EdTech startups is to break down barriers to education, the risk of liability can undermine their very goal to do so.

Accessibility for Online Learners

Similar issues of rules developed for offline learners can be seen in provisions for adult learners. Unlike schoolchildren, adult learners are more likely to need flexible ways of learning – particularly if they are carers, working parents, those with health issues, or those who have been previously excluded from education. Enabling adult learners to study remotely has enabled more people to access education, including adults who want to take or retake their GCSEs. A provider we spoke to said their use of

²⁰ Gaumann, Noëlle and Veale, Michael (2023). *AI Providers as Criminal Essay Mills? Large Language Models meet Contract Cheating Law*. UCL Faculty of Laws p10

²¹ Economic Policy Group (2022). *Assessing Potential Impact of the Skills and Post-16 Education Act on Students and Tech-Enabled Service Providers*. p 16-17. 18 June 2022.

²² Coadec. (2022). *What do AI startups want from Regulation?*. p9

EdTech tools to enhance teaching had produced “dramatically better results.” Yet despite innovation in remote and blended learning being an unmitigated good news story, the treatment of online learners by exam boards threatens to undermine this progress.

Ofqual requires candidates taking GCSE exams to do so at the registered address of the provider. For institutions that offer remote learning, this means their students often have to travel long distances – which can incur huge costs for the learners, like a hotel stay and childcare. This needlessly makes education harder to access for a whole range of people – including disadvantaged learners and those with caring responsibilities. Institutions that want to be able to offer their students ‘pop-up’ exam centres in hubs closer to them are currently prevented from doing so. Despite this, GCSE exam boards regularly allow individual waivers to the assessment location rule for school children who have special requirements.

Rules governing how GCSE exams can be taken are understandably rigorous, but they aren’t entirely inflexible. Exam boards are currently experimenting with new ways of doing things. Digitisation of testing is on the rise, with pilot programs trialling screen-based assessments to replace handwritten exams. Some parts of GCSEs have already been changed to online. Ofqual polling has indicated support for this shift towards digitisation. We believe this is a step in the right direction, but regulators and exam boards need to go further to accommodate distance learners.

Data Use

Another regulatory blocker regularly cited by startups is the need to improve access to data. EdTechs can, and often must, collect sensitive data on their users. EdTechs can rely on information including students’ habits, medical data, and geolocation in the provision of their services. Tools targeting younger audiences also need data on their users to learn from their preferences – which are distinctly different from those of adults. AI technologies especially require large quantities of data. Benefitting from the personalisation that AI can provide requires vast amounts of data on students’ learning needs, preferences, and abilities. But startups tell us there needs to be more clarity on what data they can use and how to comply with data regulations – for themselves and for education providers who may procure them – to provide access to the data they need while also ensuring that children are protected while using EdTech products.

For companies catering to adult learners, GDPR compliance is fairly straightforward. For children, however, the process can be much more complicated. The Children’s Code sets out standards to ensure online services are protecting children’s data.²³ The Children’s Code does not apply to schools. However, it may apply to EdTech providers in schools, depending on how the data is being used.²⁴ This does not mean EdTechs are barred from using this data, only that they must comply with the Children’s Code when doing so.

²³ The Information Commissioner’s Office (ICO). 2023. Protecting children’s privacy online: Our Children’s code strategy.

²⁴ The Information Commissioner’s Office (ICO). 2023. The Children’s code and education technologies (edtech).

For schools, utilising EdTech tools means more accountability and complexity when it comes to protecting student's data. The mandated role of data protection officer (DPO) in schools can be filled in a range of ways: by a designated advisor, outsourced to a consultant or tacked onto an existing member of staff's workload as an extra responsibility, among others.²⁵ As a result, knowledge of what data can and cannot be used can vary greatly among DPOs. Startups have told us that this confusion can lead to schools restricting EdTechs' access to valuable data that they are not restricted from using under the GDPR and Children's Code.

Some startups also complained to us that schools can be unsure about what they can and cannot do with their data and it can be difficult to demonstrate to schools that they are GDPR compliant. This culminates in another barrier to EdTechs being adopted by schools and universities. The DfE's 2022 EdTech report seemed to concur, highlighting the confusion: "Concerns around data privacy and GDPR were viewed as potential obstacles [to EdTech take up]...uncertainty around what pupils and parental consents are required for different EdTech solutions."²⁶

In May of 2023, the Information Commissioner's Office (ICO) set out to clarify these obligations, specifically in the context of EdTech in schools, on their website,²⁷ but startups continue to struggle to access the data they need. As a consequence, many startups stray away from using childrens' data, focusing instead on adult learning data. This can mean less innovative tech targeted at children, and tech that isn't designed to their specific needs.

"For teachers, the formatting [of the product] needs to be very calm. For kids, there needs to be colours, text bubbles, colours changing, things that a kid thinks this is cool. You need to take into account [that] kids think totally different from adults but it is difficult for EdTechs to access the data for this, as almost all available data is from over 18s and there is very limited research.

The best way to teach is to personalise to each learning style but then you need AI which needs data" - **Founder A, EdTech Startup**

²⁵ The Information Commissioner's Office (ICO). 2023. Data protection in schools. 3 April 2024.

²⁶ Department for Education (2022). *Future opportunities for technology education in England*. p 38

²⁷ The Information Commissioner's Office (ICO). 2023. The Children's code and education technologies (edtech).

Recommendations

Startups and other innovators need a clear path to procurement and a regulatory environment that ensures innovation can thrive in the education sector. As the UK navigates new liability and online safety laws, clarification regarding liability law will be more important than ever. Based on our conversations with startups, we have developed key recommendations for policymakers that we explore in this section.

Procurement

In 2019 a DfE EdTech strategy announced it intended to explore how to facilitate a better online marketplace for EdTech in order “to help schools and other providers connect with a wide range of trusted, quality products.”²⁸ The same strategy also outlined a goal to pilot an offer of independent and tailored buying advice, including a testing service, to improve procurement for schools. These services are currently being beta-tested. The experience of the pandemic will have understandably slowed the planned pace of this initiative but we have struggled to find EdTechs that have interacted with the DfE on both these initiatives. It is vital that as these initiatives are developed they are sensitive to the needs of startups.

Further, we recommend that the Government:

- **Ensure core providers to schools allow for easy dock-in and collaboration with their products.**
- **Engage startups in Department for Education procurement processes.** The latest DfE procurement initiatives directed at schools should specifically make provision for engaging EdTech startups. This will likely require greater use of novel market engagement strategies such as roadshows as well as pitch and hack days.
- **Diversify current government investment in emerging technologies and follow through with the Government’s goal to make AI tools free to use for teachers across England.**
- **Fund upskilling programmes for educators to ensure all teachers have the AI skills necessary to confidently deploy AI in the classroom.** Teachers’ knowledge will be critical if we want to harness the benefits of Artificial Intelligence in the classroom and safeguard against risks. For educators, knowing which tools will benefit their students and how to employ them effectively is foundational to their understanding of the EdTech market. Ensuring all teachers can upskill will be crucial for students’ ability to benefit from EdTech, regardless of their socioeconomic background or what school they attend.

²⁸ Department for Education (2019). *Realising the potential of technology in education: A strategy for education providers and the technology industry*. p41

Regulation

The education sector will understandably always be sensitive to regulation, but it is critical that future regulation is reflective of the technologies that are being used in learning environments. Learners need greater flexibility when it comes to learning, and EdTech startups need greater clarity on legislation that may affect them. As regulatory frameworks are developed around emerging technologies like AI, the Government must ensure that regulation does not bar EdTech startups from innovating in the education space. Policymakers should refocus their attention away from important but narrow issues like cheating risk, and instead focus on finding ways to scale and expand access to a tech-enhanced high-quality education. The potential opportunities of Edtechs are massive, but if we fail to maximise them, British education will fall behind the rest of the world.

As such, we have made the following recommendations regarding liability, learning, and data:

Liability

- **Protect startups from being held liable under the “essay mill” amendment in the *Skills and Post-16 Education Act*.** The Government should issue clear guidance on the exemption outlined in *Section 26, Subsections 2-4* of the *Skills and Post-16 Education Act*, and clarify explicitly that the liability exemption extends not only to offline educational providers but also includes online educational providers.
- **Provide further clarification regarding liability to ensure online and offline parity.** When drafting legislation, the Government should ensure that any laws or exemptions consider the online space at parity with offline. For example, EdTech startups who might be building off another’s curriculum, like that of an education provider or a teacher, should not be held liable for the curriculum’s mistakes. Similarly, EdTech startups should not be held liable for operating and using others’ copyrighted materials if the schools have themselves entered into licensing agreements.

Accessible Learning

- **Minimise barriers to learning remote learning by allowing remote exam centres for GCSEs.** In the short term, adult education providers should be allowed to set up pop-up exam centres around the UK. Longer-term, exam providers must examine how the current model of GCSE exams, with its set locations and timeframes targeted at traditional school life, can be reformed to be more inclusive of the needs of other types of learners.

Access to Data

- **Work to introduce more clarity to GDPR and data usage laws** is critical if we want to be able to utilise EdTechs that provide personalised feedback at scale. Learner data is understandably sensitive, and institutions need clear guidance on how to approach new technologies that rely on student data.

- **Establish Regulatory Sandboxes between Ofsted, Ofqual, and the Information Commissioner's Office (ICO) so regulators can establish clear pathways and guidance for educators and EdTechs.** It is critical that regulatory sandboxes – controlled environments where authorities engage with firms to test innovative products or services that challenge existing legal frameworks – are established on AI. As AI skills and tools become increasingly integrated into curricula, This will be crucial for establishing clear pathways and guidance from the ICO for educators and EdTech startups to understand what they can and cannot do.

References

Beauhurst (2022). *25 Top Edtech Companies in the UK*.

Coadec. (2022). *What do AI startups want from Regulation?*.

Competition Markets Authority (CMA) (2021). *Anticipated acquisition by Montagu Private Equity LLP where it agreed to (i) acquire certain ParentPay (Holdings) Limited (PPH) securities, and (ii) sell its shares in Capita ESS Limited (ESS) to PPH, in consideration for further securities in PPH. Decision on relevant merger situation and substantial lessening of competition*.

Competition Markets Authority (CMA). (2023). *Acquisition by The Key Support Services Limited of Schools Educational Software Limited Decision on relevant merger situation and substantial lessening of competition*.

Department for Education (2019). *Realising the potential of technology in education: A strategy for education providers and the technology industry*.

Department for Education (2021). *Education Technology (EdTech) Survey 2020-21*

Department for Education (2022). *Future opportunities for education technology in England*.

Department for Education, The Rt Hon Rishi Sunak MP, and The Rt Hon Gillian Keegan MP (2023) *New support for teachers powered by Artificial Intelligence*. 30 October 2023.

Department for Education (2023) *Generative AI in education Call for Evidence: summary of responses*. 28 November 2023.

Department for Levelling Up, Housing and Communities (2022). *Levelling Up the United Kingdom*. 2 February 2022.

Economic Policy Group (2022). *Assessing Potential Impact of the Skills and Post-16 Education Act on Students and Tech-Enabled Service Providers*. 18 June 2022.

Gaumann, Noëlle and Veale, Michael (2023). *AI Providers as Criminal Essay Mills? Large Language Models meet Contract Cheating Law*. UCL Faculty of Laws

HolonIQ (2020). *10 Charts for a Changing Education Market*.

HolonIQ (2023). *The Complete List of Global EdTech Unicorns*.

The Information Commissioner's Office (ICO). 2023. *Data protection in schools*. 3 April 2024.

The Information Commissioner's Office (ICO). 2023. *The Children's code and education technologies (edtech)*. 3 April 2024.

The Information Commissioner's Office (ICO). 2023. *Protecting children's privacy online: Our Children's code strategy*. 3 April 2024.

Quench.ai (2023). *AI & the Future of Skills - Episode #2*. *Linkedin.com*. November 9, 2023