

# Realising the potential of technology in education

## Introduction and background

**Education technology (EdTech) refers to the practice of using technology to support teaching and the effective day-to-day management of education institutions. When used well, it has the potential to help create world-class education, training and care for everyone, whatever their background. The Government's aim is to support the education sector in England in a way that cuts workload, fosters efficiencies, removes barriers to education and drives improvements in educational outcomes. The Government will also support the development of the EdTech business sector in the UK to provide products that meet the needs of educators and generate new ideas.**

**The Government has identified 5 key areas in which EdTech can drive change. They are administration; assessment processes; teaching practices; continuing professional development; and learning throughout life. It has also identified a number of key barriers to effective EdTech which are: the lack of a modern infrastructure resulting in slow connections; a need for greater digital capability and skills; a need for procurement capabilities so that schools can make the right choices about what to buy; and the need to ensure the safety and privacy of education providers and students.**

**The full report includes a number of helpful case studies.**

## Key points

### Securing the digital infrastructure

- According to data from Ofcom, there are at least 500 schools in areas in England with slow connections to the building, with around 100 of these in areas with average download speeds as low as 1-2Mbps. This connection speed prevents teachers from streaming video content without buffering, from working collaboratively with online tools, or from moving storage solutions to the cloud.
- The Government recognises the importance of broadband infrastructure in education and is working with industry and the Department for Digital, Culture, Media and Sport (DCMS) to accelerate the full-fibre internet connectivity rollout to all schools in England. The DfE and DCMS have also been working together to identify hundreds of schools where they will accelerate connectivity by funding a new full-fibre connection over the next 2 years.
- Within the higher and further education sector, the Government supports Jisc to provide full-fibre connections through their Janet network. Jisc is the independent organisation which provides digital infrastructure and services to the higher and further education sector. The Janet network was developed to meet the needs of tertiary education by offering the high speed, reliable connection that is vital for research and teaching. It also provides a high level of cybersecurity against mass cyber-attacks.
- The DfE has published a suite of guidance documents to steer schools, colleges and other providers through the key questions and issues to consider when implementing technology infrastructure, including broadband and local infrastructure issues. In addition, Jisc provide colleges and universities with infrastructure, training, guidance, consultancy and services such as Eduroam.

- High speed internet enables education providers to move to cloud-based services and storage. Cloud technology allows information and services to be stored, maintained and managed remotely through the internet rather than on a local hard drive or an on-site server. The DfE recommends that education providers consider moving to a cloud-based approach for their IT system (moving away from relying solely on 'on-site' servers). The above-mentioned guidance documents include advice about moving to the cloud.

### Developing digital capability and skills

- The Government is aware that some teachers and school leaders lack confidence with the use of EdTech. Its aim is for teachers to feel supported to use technology through high-quality continued professional development, with understanding of what is available and access to evidence of what works. In partnership with the Chartered College of Teaching it has launched free online training courses for teachers and leaders in education. The first of these is available at: [www.futurelearn.com/courses/teachnology-teaching-learning](http://www.futurelearn.com/courses/teachnology-teaching-learning).
- The DfE has also supported a special edition of the Chartered College of Teaching's journal, Impact. The special edition, available online, focusses on the impact of EdTech including latest research, best practice and teacher reflections on successful application.
- Other resources can be found on the Digital Technology Strand of the Education Endowment Foundation (EEF).
- A further measure to support schools will be the launch of a network of 'demonstrator' schools and colleges to

showcase best practice and offer peer-led hands-on support for those schools and colleges that need it.

- The BESA LearnED programme is running free roadshow events for teachers and school leaders up till summer 2019.

### Supporting effective procurement

- Each year, schools in England spend around £10bn on non-staff costs, including £470 million on software and hardware for learning. Knowing what technology to buy can often present a challenge and the Government is keen to support schools in this area.
- The Government has developed recommended buying deals for schools enabling them to get cheaper prices through pre-negotiated products. The products include 7 ICT deals, one of which is the G-cloud deal, helpful for schools that want to purchase either cloud-based technology that is not included in standard buying catalogues, or cloud support to help move information and services to the cloud. The buying deals and procurement guidance are available from the Buying for Schools website: <https://www.gov.uk/guidance/buying-for-schools>
- The Government has been working with the British Educational Suppliers Association to support a trial of their LendED service, an online lending library for EdTech software where educators can try products before they buy. It is also trialling an offer of independent and tailored buying advice through Buying Hubs in the South West and the North West of England. Part of the trial involves testing a service to directly manage procurement for schools.

### Promoting digital safety

- The DfE has already published a data protection toolkit which helps guide schools through key data protection activity, including compliance with the Data Protection Act 2018. Further advice is available from The National Cyber Security Centre (NCSC).
- Within higher education, Jisc provide a range of security products and services and support to help keep users and data safe. Their Security Operations Centre monitors and resolves security incidents on the Janet network.
- The statutory guidance for schools and colleges on safeguarding children and safer recruitment, *Keeping children safe in education*, states that schools and colleges should consider a whole school approach to online safety. In addition to monitoring and filtering, this should include ensuring that children are taught about online safety as part of a broad and balanced age-appropriate curriculum.
- A joint DCMS and Home Office White Paper will be published shortly. It will set out a range of measures detailing how the Government will tackle online harms and set clear responsibilities for tech companies to keep UK citizens safe.

### Developing a dynamic EdTech business sector

- The success of a digital strategy relies on a thriving EdTech business sector. The Government's aim is therefore to ensure a pipeline of innovation and encourage scale-up for proven products and services which are evidence-based and focused on the needs of all in education.
- The Government has committed to a number of actions to support the EdTech business sector. It will: raise the profile of the importance and benefits of using EdTech in schools, colleges, universities and other providers; help education providers improve procurement practice and understand their options, thereby increasing demand and cutting the

costs of sales for companies; support the opportunity for schools to meet EdTech companies and see products and services through the BESA LearnED programme of roadshows; support a BESA-led trial of their LendED service allowing schools and colleges to compare and trial technology products and services; and explore how to facilitate a better marketplace, making it more efficient for businesses to gain their route to market.

- The DfE and the Department for Business, Energy & the Industrial Strategy (BEIS) will establish an EdTech Leadership Group, that will ensure that both the business sector and the education sector are able to work together to drive the delivery of this strategy across England.
- We will work with the Group to agree a plan by the end of the year, including on how industry and the English education sector will support the aims set out in this strategy,

### Supporting innovation through EdTech challenges

- To promote the use of technology across the education system in England, the Government is launching a series of 'EdTech challenges' which are designed to support a partnership between the EdTech industry and education sector. They are focussed on the 5 key areas mentioned above and represent a call to industry, academia and educators.
- Challenges within the **administration** area are to: improve parental engagement and communication, whilst cutting related teacher workload by up to 5 hours per term and to: show how technology can facilitate part-time and flexible working patterns in schools and colleges, including through the use of time tabling tools.
- Challenges within the **assessment** area are to: cut teacher time spent preparing, marking and analysing in-class assessments and homework by two hours per week or more; show that technology can reduce teacher time spent on essay marking for mock GCSE exams by at least 20 per cent; and identify how anti-cheating software can be developed and improved to help tackle the problem of essay mills.
- Within the area of **teaching** the challenge is to identify the best technology that is proven to help level the playing field for learners with special educational needs and disabilities.
- Within the area of **continuing professional development**, the challenge is to demonstrate how technology can support schools and teachers to diagnose their development needs and to support more flexible CPD.
- Within the area of **learning throughout life**, there are 3 challenges which are to: prove that the use of home learning early years apps aimed at children and parents contributes to improved literacy and communications skills for disadvantaged children; widen accessibility and improve delivery of online basic skills training for adults; and; demonstrate how artificial intelligence can support the effective delivery of online learning and training for adults.

### Improving the DfE's digital services

- The DfE has already updated and transformed its digital services in a number of areas including teacher recruitment, help for parents in accessing and paying for childcare and support in finding an apprenticeship.
- The DfE is further developing its services in a number of ways. It is developing a new National Retraining Scheme to help adults whose employment is at risk of automation, to upskill or retrain. It is also exploring the needs of teachers for quality curriculum materials.

The full document can be downloaded from:

<https://www.gov.uk/government/publications/realising-the-potential-of-technology-in-education>