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Switched On

Exploring the challenge of adequate digital access for all children and young people

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1. Introduction

The remit

At the Carnegie UK Trust, we have a strategic focus on what we describe as 'Digital Futures' how the rapid advances in digital technology can optimise improvements in wellbeing for people across the UK and Ireland, while the risks of these changes can be mitigated. An important part of our work in this area is focused on digital inclusion - how to ensure that those not already accessing all that the digital world has to offer, can be included. We are delighted to be working with the Learning Foundation and Nominet, along with other partners, on their new initiative Digital Access for All (DAFA). DAFA will design and deliver solutions to ensure that all children and young people have equal access to digital, and all the benefits it provides.

With the backdrop of the new DAFA programme, we have brought together research and evidence about key issues related to digital inclusion, with a particular focus on children and young people. Our intention has been to review the key reports and statistics in this area, intending to keep content as relevant and recent as possible. Rather than being exhaustive, the report aims to present the key aspects to consider in terms of digital access and children and young people in the UK and give a broad picture of the overall context.

Introducing digital access

We begin by describing the factors that make up 'adequate digital access' and explain why this is a complex picture with considerations that go far beyond simply access to a digital device. Factors include having the necessary skills and confidence to navigate the digital world and having a safe space in which to use the internet. We highlight that adequate digital access is not universal for all children and young people in the UK today.

The paper describes the impacts of a lack of digital access, which have potential repercussions

in many aspects of young people's lives, including their educational outcomes. We will show that digital exclusion can further entrench existing disadvantage, and that vulnerable groups could benefit disproportionately from being online.

In our mapping of digital exclusion, we consider statistics on device ownership, digital skills and note the geographical issues related to internet access. Building on this baseline, it was also important to look at some of the indicators relating to vulnerable groups of children and young people, who we know are most at risk of digital exclusion, and who may not be fully represented elsewhere.

Promoting digital access

The report then summarises a number of existing policies and initiatives that exist to promote digital inclusion for vulnerable groups of children and young people. We highlight that whilst there are a range of overarching digital strategies at national level, digital is not necessarily reflected in the policies relating to the vulnerable groups who are most at risk. Similarly whilst work is being done to outline strategies for the use of digital technology in schools, there is progress to be made to ensure that it is employed effectively and consistently.

To conclude this report, we have used a small selection of case studies to demonstrate the positive impacts that digital inclusion interventions can make for children and young people. Although this research has demonstrated that the issues around digital access are complex and challenging, these case studies provide encouraging examples of the way in which carefully designed interventions can make a real difference. It is our hope that the DAFA initiative will build on all of this learning, and will be effective in providing digitally excluded children and young people with all that they need to reap the benefits that digital access has to offer.

2. About Digital Access for All (DAFA)

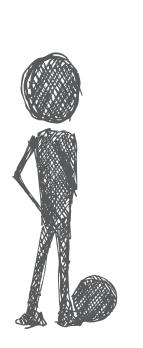
Since early 2018 a number of leading organisations from the tech sector, charity and Government have come together to explore the issue of digital access. Digital Access for All recognises the excellent work being done across the UK in the area of digital skills and the inclusion agenda, however we believe that the issue of access is critical too at a time when there are still upwards of 1 million children and young people and their families who don't have adequate access to a device or connectivity at home.

The impact of not being online at home perpetuates and expands the divide and the disadvantage that these families face. As a leading digital nation, the UK needs to ensure that all of its citizens are able to engage, participate and benefit from everything that

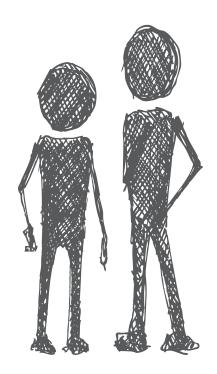
being online can offer, from learning and skills development to job hunting and accessing government and other key digital services.

Launched formally in February 2019, Digital Access for All is a concerted effort to unlock solutions to this challenge so that every young person, and their family, have a chance to access the benefits of a life online. Like their peers, with adequate access in the home they can build the skills, confidence and access to opportunities for their future in a society that is digital by default.

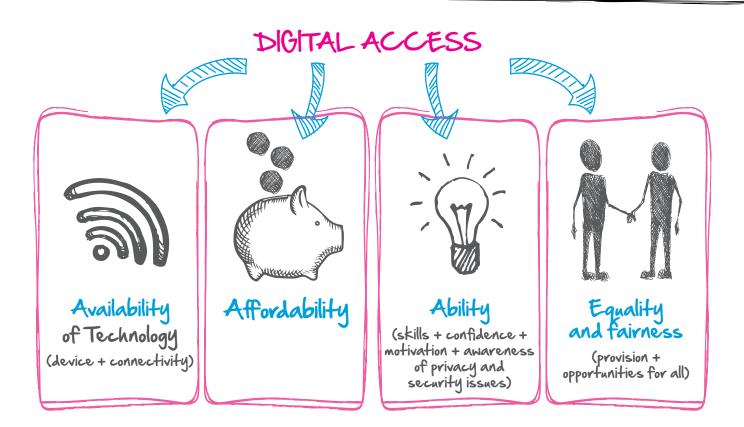
The DAFA programme has been initiated by The Learning Foundation, a consultancy with a social purpose and Nominet, who are partnering with the Carnegie UK Trust, Good Things Foundation, Intel, Microsoft, Lloyds Banking Group, Computer Recyclers, Argos, Greater London Authority and BT.







3. What do we mean by digital access?



Many different terms have been used over the years to describe the interaction — or lack of it — between people and digital technology. Digital access, inclusion, participation, engagement, literacy, understanding and skills are all used by different organisations working in this context. Some of these terms have broadly similar meanings while others have a more specific focus or nuance. Some actors use the different terms interchangeably while others focus on the particular term they believe best captures the essence of their interests in this space.

For the purposes of this paper we are using the term 'digital access'. We regard digital access as having at least four components. Firstly the technology - both the device and connectivity - must be available to the person. Secondly the device and connectivity must be affordable to the person. Thirdly there must be an ability by a person to use the technology - as well as skills, this involves having the confidence and motivation needed to navigate the online world. Fourthly there is a critical issue of equality and

fairness. This issue of fairness relates both to how service providers treat their users and a drive for the digital future to offer the same opportunities for all. Only when these components are each addressed effectively can we say that there is "adequate digital access" for all. In the framing of this paper we refer to digital access including both internet services and non-internet enabled services, such as office packages.

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In this chapter we will examine the components of digital access and present the evidence particularly around why connection, devices and skills are important aspects of the access conversation.

Access to an affordable and reliable connection

Adequate access to digital means access to the online world that is affordable and reliable. Children living in households where there is real material need are far less likely to have access to technology than their peers. According to the National Statistics, 2.7 million children live in low income families (National Statistics. 2018). Reliable digital access comes at a price - the average household monthly spend on communications services is £124.62 (Ofcom, 2018b). For context, compare this to the average monthly spend on a family food shop, which is £230.53 (Webb, 2017).² For a family on a low income, who are prioritising their spending carefully, it is worth considering that the cost of an average level of digital provision in the home may be equivalent to two weeks of food on the table. According to Ofcom Access and Inclusion 2018 around one in ten adults have had difficulty paying for communications services; this is highest among younger consumers and those with long-term mental illness (Ofcom, 2018a).

Another comparison is provided in the Carnegie UK Trust research *Across the Divide* which carried out interviews with individuals in Glasgow least likely to have access to the internet, according to demographic trends. It found that the monthly communications spend amongst non-internet users in this group was a mere £26.89, rising to £37.39 among internet users — both figures significantly below the average communications spend reported by Ofcom (White, 2013). In addition a survey of Citizens Advice users found that two of the three most common barriers preventing respondents from using the internet

1 2.7 million children live in 'relative low income' households – those whose incomes are below 60% of the contemporary median income (before housing costs). related to money. Broadband costs were a barrier for 18% of respondents, while phone and data costs were a barrier for 17% of respondents (Citizens Advice Scotland, 2018).

It is worth noting that the cost barrier to connectivity is not a binary one. There are degrees of connectivity that people might be able to afford – the question to determine is what level of connectivity is sufficient and equitable. In addition, a lack of online access does not negate the need to communicate, so alternative methods need to be used and these also come with a cost: 4% of consumers surveyed for Ofcom said they had cut back on essentials like food or heating so that they could afford to buy postage stamps (Ofcom, 2018a).

CASE STUDY: YOUNG REFUGEES Provided by the Manchester Refugee Support Network

"Young refugees' reliance on extremely expensive data packages is a common issue we come across. Many young refugee clients I talk to are paying for high cost data contracts every month which makes up a high percentage of their monthly budget. We worry how much they are having to spend and what they are having to go without.

Data is so important to them because it is how they can communicate with their family and keep up to date, so they feel they need to buy lots of data for fear of running out as often they don't have any other internet access at home. Data is also seen as cheaper than WIFI or broadband (even when it may not be) and support to understand different packages or how to switch, is often focused at older people – it is assumed there's no need to support young people."

Quoting ONS data from 2017, the average weekly spend on a family food shop is £53.20, which equates to £230.53 monthly. A family is defined as a couple with or without children, or a lone parent with at least one child, who live at the same address.

This illustrates a fundamental challenge for the digital access agenda – that good quality access can lead to improved financial outcomes (amongst other benefits), but that those who would gain the most from these outcomes are often the least able to afford decent access to help them attain these. For some young people, specific challenges emerge. Where young people have a reliance on a certain type of technology – for example young refugees can be highly reliant on using their smartphones to contact family members – this can lead to negative financial consequences if people are tied into expensive contracts.

For children without access to digital technology at home, access may be available in other settings – but this is unlikely to provide access that is equal to their peers. Although most children can use computers, laptops or tablets to some extent at school, they are unlikely to be able to access these outside of school hours for homework or other tasks. In the US, this has been

CASE STUDY: LEONA

Evidence from the Carnegie UK Trust's #NotWithoutMe project

Leona, 15, lives in a residential unit in north east England and has been living there for the past 2 years. She has her own smartphone that she got as a present from a family member for her Christmas present last year. The residential unit doesn't have WIFI, but Leona does have a 1GB data package on her phone and an Ethernet connected computer in her bedroom provided by the unit. The unit has two communal laptops in the living room but they are both broken. Therefore, she often spends more time alone in her room to use the computer or outside the unit at the local McDonalds to connect to WIFI. She has also been known to hang out of her bedroom window to reach their neighbours' open access WIFI.

referred to as 'the homework gap', recognising the disadvantage children and young people face without internet access at home (Moore, Vitale & Stawinoga, 2018). Libraries are a key provision of digital access – yet local libraries are rarely open in the evenings or on Sundays, and access may depend on parents or quardians being able and willing to transport and/or accompany the child. Professor Philip Alston, the United Nations Special Rapporteur on extreme poverty and human rights, noted on his recent visit to the UK the serious impact of the closure of children's centres and libraries has had particularly on those living in poverty who may need to access a computer or a safe community space (United Nations Human Rights Officer of the High Commissioner, 2018).

Many young people make use of public WIFI networks to get online. Common spaces for young people to access WIFI include town centres, McDonalds, local transport such as buses and trains and even occasionally neighbours' open WIFI. However, this approach is usually dependent on device ownership and leaves the user vulnerable to connectivity and download speed issues. There are also significant privacy and security concerns, particularly where sensitive tasks are being undertaken, plus the negative impacts of noise interference and interruption. There may also be an additional cost consideration attached if using public WIFI in a café or on a bus for example. A lack of home access for young people may also have unintended physical risks; there is evidence of young people going out in public late at night in order to connect to a WIFI network.

Clearly none of the 'workaround' options described above offer children an equal footing to those who are digitally connected at home. A review of the impact of digital technologies on formal education found that the availability of a computer at home was positively associated with Key Stage 4 test scores, and that young people with a computer at home are less likely to play truant at ages 14 and 16 than those without computer access (Becta, 2009).

Access to public WIFI can also be significantly time limited, for example, some libraries have to allocate computer access through time slots of

generally 30 minutes or 1 hour. This can lead to increased stress by having to complete tasks in a time limit (particularly long forms) and restricts the opportunity to gain skills through more unstructured or leisurely use of the internet.

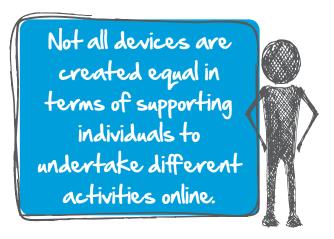
Geography can also play a significant role in the digital access debate with regards to connectivity, discussed further in Chapter 4.

Access across devices

Today we are accessing the internet through a larger variety of devices than ever before, from smart watches to car consoles. Patterns in how we access the internet in the UK have shifted significantly over time, from the dominance of the PC to the rise of the smartphone over the last decade. The most common devices remain the smartphone, tablet and PC or Laptop. However, not all devices are created equal in terms of supporting individuals to undertake different activities online and not all services are designed for all devices.

More than a third (36%) of 16-24 year olds live in mobile-only households. Research by Ofcom (Ofcom, 2016), Citizens Advice (Citizens Advice Scotland, 2018) and Revealing Reality (Revealing Reality, 2018) have all shown that access to a smartphone only, whether by choice or circumstance is insufficient to allow individuals to access all of the opportunities of the digital world or realise the range of benefits. Smartphone only users are more likely to be limited in their ability to create and edit documents in office software applications, and find it difficult to collate or compare information, limiting both social and employability opportunities (Ofcom, 2016). Furthermore, many services are not designed to be 'mobile compatible' or 'mobile friendly' most notably the mobile functionality issues of Universal Credit (Christians Against Poverty, 2018), compounding issues of the time and skills needed to navigate the services. Therefore, when we examine access we must consider the range of devices young people have access to.

It is worth noting that whilst most of the debate focuses on the most commonly used devices, there are also significant additional



considerations when assisted technology is required, though not explicitly addressed in this paper.

Access to skills

For digital access to be effective we need to look beyond issues of physical access, such as connectivity and devices. We need to recognise that adequate access should also mean that children and young people have the confidence, skills and motivation that they need to navigate effectively and protect themselves digitally. While we know that the exact definition of these skills is a contested area and these assets extend into aspects of critical thinking, autonomy, resilience and many more, for the purposes of this report we are using the term 'skills' to encapsulate these broad range of abilities. Commonly, five areas of digital skills are referenced as those required to navigate the basics of the digital world successfully. Though it is worth noting that digital skills are not binary, a young person may be highly proficient in one area of digital such, but require further support in a number of other areas. The five areas of digital skills have been developed and refined over the years, including a refresh of the Basic Digital Skills Framework to the Essential Digital Skills framework, which currently sit with the Department for Education. Lloyds Banking Group continue to be the sole evaluator of UK digital skills for the UK government. The most recent Essential Digital Skills results will be published in the Lloyds Consumer Digital Index 2019 in May.

In addition to the basic skills, fair digital access should also mean that children and young people are able to take appropriate steps to mitigate the risks they might experience online – for example in relation to privacy or exposure to harmful content. This is an issue of growing concern. For example, over half (53%) of young people aged 12 to 15 who go online think they can easily delete information that they have posted about themselves if they don't want people to see it (Ofcom, 2017). Over a third of 12 – 15s have seen hateful content directed at a particular group of people in the last year (Children's Commissioner for England, 2017c). Clearly, it is imperative that the primary responsibility for protecting

children and young people online is not regarded as sitting with children and young people themselves alone – schools, parents, carers, tech companies, regulators and government all have a significant responsibility here. Nevertheless, children and young people should have the skills and confidence to be able to take certain sensible actions, such as safeguarding their personal details or making wise choices about the sites and individuals that they interact with.

This is a very topical issue and the recent Internet Matters report *Vulnerable Children in a Digital World* published in February 2019 has some helpful insights to add [Internet Matters, 2019].

EXAMPLES OF BASIC DIGITAL SKILLS SURVEYED BY LLOYDS

Managing information

- Use a search engine to look for information online
- Find a website I have visited before
- Download/save a photo I found online

Communicating

- Send a personal message via email or online messaging service
- Carefully make comments and share information online

Transacting

- Buy items or services from a website
- Buv and install apps on a device

Problem solving

- Verify sources of information I found online
- Solve a problem with a device/digita service using online help

Creating

- Complete online application forms which include personal details
- Create something new from existing online images, music or video

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4. Impact of a lack of digital access

Lack of digital access

In this section we will explore the impact that a lack of digital access can have, whilst also noting some of the health and wellbeing concerns around digital use.

The Good Things Foundation, a leading digital inclusion charity, summarise the key disadvantages of digital exclusion as follows: poorer health outcomes and a lower life expectancy, increased loneliness, social isolation, and less access to jobs and education. It can mean paying more for essentials, financial exclusion and an increased risk of falling into poverty. There is also a risk that digitally excluded people lack a voice and visibility, as government services and democracy increasingly move online (Good Things Foundation, 2019).

In practical terms, a lack of digital access can mean:

- Drastically reduced access to the job market as a vast and ever-increasing proportion of roles require digital skills and personal access to technology outside of traditional working hours; while in many sectors recruitment processes, job adverts, applications and even interviews are now delivered entirely online
- Significant challenges in accessing welfare benefits, particularly with the roll out of Universal Credit
- Lack of access to a huge swathe of online training, learning and development opportunities
- Limited access to a range of resources and networks which have the potential to enhance wellbeing. For example a young person struggling with a health condition can find a wealth of information online and can engage with virtual communities to find and share advice and support with those experiencing similar conditions
- Exclusion from a huge volume of data, information and resources, supporting the acquisition of knowledge and connecting people to their local community and wider society

- Paying a premium for goods and services as a result of much more limited opportunities to shop around for the best product or price
- Lack of access to online financial services which play an important role in supporting people to manage their money effectively
- Slower, less convenient access to a vast, diverse and rapidly growing set of public services, ranging from bill payments, to housing allocation systems, to booking of medical appointments, to information on bin collections or the opening hours of the local library.

Implications for young people

It is often assumed that these challenges do not apply to children and young people who may be regarded as growing up as 'digital natives' surrounded by technology. However, there remains a substantial group of children and young people who are disconnected. There is an argument that these children and young people are at risk of being at an even greater disadvantage than previous generations, given the rapid and widespread adoption of digital means and methods throughout all facets of life and the expectation from others that they are digitally engaged. As with all other age groups, it is those children and young people who are already at disadvantage in different aspects of their lives who are most likely to lack digital access, further widening the social inequality gap.

In addition to the general disadvantages experienced by those lacking digital access, children and young people may also find that:

There is an educational disadvantage in not being able access the internet for schoolwork.

The relationship between the use of digital and academic performance has been explored in various papers over the last decade. However the correlation is not straightforward and more

evidence would be helpful here. A Northern Irish study showed that those without home internet access were much less likely to achieve 5A* grades at GCSE than those who did have access, but that daily use of games consoles had a significant negative impact (Nugent, et al., 2015). By contrast, an OECD report found that students using the internet more frequently scored lower in science. It also found that on average 15 year olds who used the internet moderately scored above students who never used the internet or used it more intensively (Echazarra, 2019). A paper from the Education Development Trust describes the complexity of this picture and similarly emphasises that the digital divide may be more about a difference in internet usage rather than physical access – and therefore it is the type of usage which impacts on academic performance (Education Development Trust, 2013).

There is a particular social disadvantage because so many of their peers are connecting online.

Young people are using a wide array of social media and messaging apps to communicate. Digital exclusion may play a part in a child or young person's ability to become socially integrated within their peer group. One report highlighted feelings of embarrassment caused by not being familiar with apps such as Facebook, MSN and Skype being used by classmates (Eynon & Geniets, 2016).

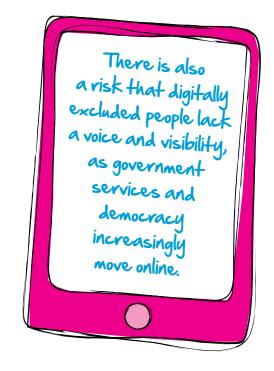
Health and wellbeing concerns about digital use

The negative consequences of a lack of digital access are well-evidenced. However, if digital access is not underpinned by personal skills, confidence and the right supporting infrastructure (parental support, engagement by schools, responsible deployment of technology by businesses, effective laws, regulation and government guidance) then digital use can lead to health and wellbeing concerns for children and young people.

In January 2019 the Royal College of Paediatrics and Child Health released guidance to help parents manage their children's screen time (Royal

College of Paediatrics and Child Health, 2019). The guidance states that while there is no direct evidence of negative impacts on child health, there are associations with poor mental health, sleep and fitness. Meanwhile a Young Minds report adds that online activity can lead to stress and anxiety due to the need to always be available for contact, whilst concern about body image and appearance can lead to low self-esteem (Young Minds, 2016). Other researchers take a different approach to examining the topic and argue that rather than focusing on screen time, we should examine what activities are being done online. (Livingstone, 2019). It also notes the risks of abuse or exploitation online such as through cyberbullying, sexual exploitation or subtler forms of psychological pressure. There is also evidence that young people who are already more vulnerable, for example experiencing depression, seek out the online world for a solution rather than the internet causing wellbeing challenges. Overall this remains a contested area of research and policy.

Whilst these risks are grave, it is evident that perceived fears can also be a barrier to children and young people gaining digital access that could be helpful to them. In one review of a digital inclusion programme, young people reported their frustration with heavy filters in school which made sites such as Facebook and Soundcloud inaccessible (Davies, Eynon, & Wilkin, 2017). Allowing people to explore their personal interests online is a key driver for learning digital skills, and the social opportunities are also important.



5. Mapping the lack of digital access

While for most of us digital technology has become an integral part of our daily lives, adequate access to the online world is far from universal. ONS research shows that of all households in Great Britain, 10% do not have access to the internet (Office for National Statistics, 2018). The Lloyds Bank UK Consumer Digital Index report says that there are 4.3 million people (8%) in the UK with no basic digital skills at all (Lloyds Bank, 2018). A recent Cebr report found that 11.3 million people are not digitally connected and lack the basic digital skills they need to participate fully in our digital economy (Cebr, 2018).

This section aims to map the current situation with regards to digitally excluded children and young people in England, taking into consideration a number of relevant factors in the digital access challenge. As well as considering vulnerable groups of children and young people, we will look at figures for device ownership and digital skills, and make note of the geographical challenges that still remain across the UK.

Vulnerable groups

For the purposes of this paper we have focussed specifically on school-age children in England, which reflects the target population for the DAFA project. Although there is no recent figure for how many of these children are digitally excluded, further insight can be gained by considering studies of vulnerable children in England. We know that children disadvantaged in other ways are less likely to have digital access (Helsper & Smirnova, 2016). The Children's Commissioner's Vulnerability Report 2018 (Children's Commissioner for England, 2018) outlines the number of young people experiencing a range of vulnerabilities (see table above). These groups are not discrete and vulnerabilities can overlap and compound one another.

Examples of groups of vulnerable children in England	Count
Looked after children	72,670
Children experiencing neglect	944,240
Young Carers	173,000
Children at risk of homelessness	120,510
Children eligible for free school meals	1,128,840
Children in workless households	1,050,967
Children with Special Educational Needs (SEN)	917,164

While the figures above are indicators for specific groups of vulnerable children, the report highlights that overall there are believed to be as many as 2 million children in England living in families with substantial complex needs (Children's Commissioner for England, 2018).

It is important to note here that 'children and young people' are not a homogeneous group and are not defined by their categorization within a vulnerable category. However, research demonstrates that vulnerable young people are less likely to have had the time or opportunity to develop digital skills. The Citizens Advice Disconnected survey found that those seeking advice on benefits matters were some of the least frequent users of the internet, again supporting the evidence that disadvantaged families are less likely to be digitally connected. 31% of those seeking benefit advice reported that they either hardly ever (12%) or never (19%) used the internet (Citizens Advice Scotland, 2018), Furthermore, research for The Prince's Trust found that 40%

There are 4.3 million people (8%) in the UK with no basic digital skills at all.



of disadvantaged young people had low levels of 'netiquette', that is skills to make decisions about their own online behaviour and safety, and how to deal appropriately with the behaviour of others online (Helsper & Smirnova, 2016).

Access to connectivity and devices

In terms of young people, the Lloyds Bank UK Consumer Digital Index shows that 700,000 11-18 year olds (12%) have no home internet access from a computer or tablet. A further 60,000 11-18 year olds do not have any home internet access at all (Lloyds Bank, 2018). In addition to this, we must also consider that there are a proportion of primary school-aged children (aged 5-10 years) with no home internet access. The Learning Foundation estimate that overall there could be as many as 1 million children and young people without digital access.

Expanding on this picture, Ofcom report the following about device ownership (see table below). Alongside these statistics, it is worth

considering what children and young people are doing online and what level of digital skills they are using. The Ofcom report particularly notes the popularity of YouTube: half of 3 – 4 year olds and more than eight in ten 5 - 15 year olds now use YouTube (Ofcom, 2017c). Online gaming is also a huge industry. Therefore while large numbers of children and young people are online, and both device ownership and time spent online increases dramatically as they hit their teens, this is not necessarily a quarantee that the skills young people are developing will map across into positive educational or employment outcomes – although clearly the number of labour market opportunities linked to the creation of audio visual content or gamification are expanding rapidly.

There is also some evidence of a socioeconomic related digital divide around how young people use computers, where participants from lower income neighbourhoods are more exposed to TV, electronic games, mobile phones, and non-academic computer activities at home (Harris, Straker & Pollock, 2017).

Additionally, we do not have a full picture about whether the devices owned by children and young people are suitable for completing schoolwork or exactly how 'ownership' is defined – for example it is possible that devices are shared amongst siblings, and therefore it may be that there is not guaranteed access for schoolwork as and when it is needed. The Ofcom *Access and Inclusion* report notes some interesting statistics relating to 16 - 24 year olds: 17% have experienced difficulties in paying for communications services, potentially driven by the higher volume of services used and devices owned by this age group; and a third of 16 - 24

Age	Device ownership	Time spent online (weekly)
3 – 4 years	1% have a smartphone 21% have a tablet	53% go online, for nearly 8h a week
5 – 7 years	5% have a smartphone 35% have a tablet	79% go online, for around 9h a week
8 – 11 years	39% have a smartphone 52% have a tablet	94% go online, for nearly 13.5h a week
12 – 15 years	83% have a smartphone 55% have a tablet	99% go online, for nearly 21h a week

From Ofcom's Children and Parents: Media Use and Attitudes Report (Ofcom, 2017b)

year olds live in mobile-only households. Their ownership of connected devices such as PC, laptops/netbooks and tablets has declined, suggesting that they are now relying on their smartphone for internet access (Ofcom, 2018a).

Digital skills

The Lloyds Bank UK Consumer Digital Index assesses the level of digital skills amongst 15 – 24 year olds:

Year	Zero digital skills	Full digital skills
2016	1%	93%
2017	0%	97%
2018	0%	96%

Lloyds Bank UK Consumer Digital Index 2017 & 2018 (Lloyds Bank, 2017)

While it is positive that the number of young people with zero digital skills has dropped to effectively 0%, the 2018 data shows that 4% of 15 – 24 year olds still lack full basic digital skills (Lloyds Bank, 2017). As previously discussed, the remaining 4% are likely to be disadvantaged in other ways and therefore the lack of digital skills extenuates existing inequalities. It is also worth noting a couple of points about the methodology here, since the Lloyds Consumer Index is based on customer data. In 2017 and 2018, the methodology was extended to quantitative surveys, attitudinal research and interviews carried out specifically with those who do not have a bank account, so good progress has been made to extend the scope of individuals included within the research. However there remains a question, as with much research, about whether those who are 'hardest to reach', 'underserved' or 'seldom heard' are fully represented in the sample (Kelleher, Seymour, & Halpenny, 2014) (Bonevski, et al., 2014).

Additionally, in the case of assessing of digital skills levels, these have been self-reported. Given that there's a societal assumption that young people are digital natives, it is possible that young people have a misperception about their level of digital ability (Mahmood, 2016) or feel pressure

to present themselves as having higher levels of digital skills than the reality: 'Digital natives', or those that were born after the widespread introduction and adoption of digital technologies, are especially vulnerable to over-estimating their critical abilities" (Miller & Bartlett, 2012: p.40).

Physical geography

In mapping the digital exclusion landscape, it is also important to recognise that there are varying challenges in different areas of the UK. There remain a number of physical access issues in terms of broadband provision, and therefore the UK government's *Broadband Delivery UK* programme (BDUK) is supporting investment to provide superfast broadband coverage to as many premises as possible. It is introducing a broadband Universal Service Obligation so that by 2020 everyone across the UK will have a clear, enforceable right to request high speed broadband (Department for Digital, Culture, Media & Sport, 2019a).

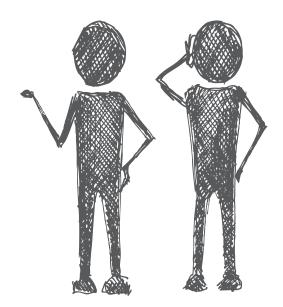
The current picture is that around 2% of UK premises cannot access even a basic fixed broadband service; however this increases to 12% when considering rural premises only (Ofcom, 2018c). A 'heatmap' developed by the Tech Partnership uses eight digital and social indicators to predict the level of digital exclusion in each area. The issue of rural exclusion is immediately visible. The BDUK roll out relies on fast fibre optic networks, however whilst fast fibres connect BT's exchanges to street cabinets, the final connection to the home comes via copper cables which are slower. The longer the copper cable, the slower the connection — therefore for those in rural areas where distances from the street cabinets



Sourced from http://heatmap.thetechpartnership.com

are greater, broadband connection can be poor, and may continue to be despite BDUK. Those in rural areas can struggle to access even basic broadband, as connections can also slow due to increased demand resulting from heavy use of video, high numbers of users at peak times, and even weather problems. Rural challenges digital access can also be compounded by fewer opportunities to access public WIFI.

A lesser explored problem is the lack of effective broadband provision in some deprived urban areas. An Ofcom report found that superfast broadband coverage varies widely from city to city, and also that there were higher instances of slow broadband connections in areas with lower incomes (Ofcom, 2014). Since broadband providers are commercial entities, there is inevitably a drive to provide services where there is the financial incentive of customer take-up. Evidence demonstrates that there are pockets of deprived urban communities with very poor internet services existing within otherwise well connected large cities. Areas of greatest income deprivation also had a higher proportion of poor connections (Ofcom, 2014). Whilst one report highlights that 2% of urban areas of the UK cannot receive decent broadband services, there is limited data to determine whether this is still linked to deprivation (Ofcom, 2017b). In aiming to reach children and young people who are not currently digitally included, it will be important to remember that physical geography and connection issues may be a factor, sometimes in surprising ways.



Self-exclusion

Whilst advocating the positive benefits of online access, it is important to note that some people do not have access to the internet simply because they do not want to. They make an active decision, regardless of cost or availability, not to engage online. Some may not see that it has any relevance to their lives, though most data exploring motivation is in reference to older communities.

Others may feel they have no other option but to 'self-exclude' (or have exclusion imposed upon them from a parent or carer) due to the potential harm or risk. This has been particularly highlighted with children and young people with special educational needs and disabilities, and some Gypsy, Roma and Traveller communities for example.

CASE STUDY Shannon Provided by Rural Media

Shannon is 16 and lives on a local authority owned Traveller site in the Midlands. She is home educated having been bullied at school because of her Traveller ethnicity. Shannon has a smartphone but no tablet or laptop. Shannon would like to stay in touch with her friends and talk about her culture on social media and watch You Tube videos but she sees and experiences racial discrimination online. This makes Shannon very angry and she would like to have speak out about it but sometimes it also makes her want to hide her identity from society. This leaves Shannon feeling very upset and conflicted and sometimes ashamed

6. What work is being done to promote digital access?

This section will look at what current government policies say about digitally excluded children and young people, and how relevant policies and initiatives are tackling the problem. We will start by considering the place of computing in the curriculum, and the use of digital in education more generally, given that schools are the primary vehicle for teaching children digital skills. We will then move on to consider the broader policies around vulnerable children and young people, and to explore what prominence is given to digital inclusion within those. We will also look at the government's general approach to digital inclusion, and summarise a range of significant private and voluntary sector initiatives in this area.

UK government policies

Computing in the National Curriculum

The National Curriculum in England includes a curriculum for Computing Programmes of Study. This states that by Key Stage 4 (age 16), all pupils must have had the opportunity to study aspects of information technology and computer science at sufficient depth to allow them to progress to higher levels of study or to a professional career. All pupils should be taught to:

- develop their capability, creativity and knowledge in computer science, digital media and information technology;
- develop and apply their analytic, problemsolving, design, and computational thinking skills:
- understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns (Department for Education, 2013).

While these are ambitious aims, they are not explicit about the specific tasks and skills that might be particularly useful to young people in their lives and careers: setting up a LinkedIn profile, understanding professional email etiquette or how to research effectively online for example. One report described how some young people could technically complete a Google search, but struggled to navigate the results, feeling overwhelmed by the huge list and confused about why there was not a clear direct answer (Eynon & Geniets, 2016).

There has been widespread recognition in the sector that the rapidly changing nature of technology has created challenges for schools – both in access to the appropriate equipment, and in ensuring that teachers have relevant training. In January 2019, the National Centre for Computing Education funded by the Department for Education launched a new programme that aims for every child in every school in England to have a world-leading computing education (National Centre for Computing Education, 2019). The Centre intends to provide resources, training and support for teaching computing in primary and secondary schools and colleges from Key Stage 1 through to A Level.

There is also a drive for digital technology to be employed and embedded across the curriculum. There are potential advantages here for learning overall, as well as for digital skills, but the extent to which this is currently achieved varies from school to school. The school leadership, ethos and the capabilities of the individual teachers are just some of the variables. The government's *Teacher's Standards* do not include any mention of digital knowledge or skills (Department for Education, 2011). A research report by Intel & Fujitsu, *The Road to Digital Learning*, found that schools have high aspirations for their digital capabilities, but need support to accelerate

progress. The primary factors for support were improving staff digital skills, knowing where to invest, and having better technology (Intel & Fujitsu, 2018).

The effective deployment of digital technology in the classroom is widely debated in terms of the overall impact on wellbeing. A review on the *Impact of Digital Technology on Learning and Teaching* found indicative evidence that digital tools and resources can help to reduce gaps in subject attainment (ICF Consulting Services Ltd, 2015). It also found promising evidence that digital equipment and resources can help learners with additional support needs to improve their skills and competences in literacy and numeracy. Teachers' skills and abilities to use digital tools appropriately were found to be critical in terms of the impact on vulnerable groups.

There is a need for a refined vision and clear aims for the appropriate use of digital technologies in schools, as well as some methods of ensuring a consistent standard. The Department of Education's overarching strategy for 2015 to 2020 (Department for Education, 2016) has very few references to digital; however specific strategies are emerging in some of the UK jurisdictions. In Wales, the whole approach to developing children and young people is changing under the development of a new curriculum, and there is an impressive recognition of the importance of digital skills. Digital competence will be one of three cross-curricular responsibilities alongside literacy and numeracy (Welsh Government, 2017). Further detail is

outlined in a framework which describes four strands of learning – citizenship, interacting and collaborating, producing and data and computational thinking (Learning Wales, 2018). In Scotland, there is a national strategy to ensure all learners and educators are able to benefit from digital technology. It covers improving the skills of educators, provision and access to technology, and the way in which digital should be embedded across the curriculum in order to be most effective (The Scottish Government, 2016). A digital strategy for schools in England is expected in 2019.



Approaches to working with disadvantaged children

In the following table we examine the broad policies around vulnerable children and note any references to digital access.

Looked after children	The government has a range of policies and guidelines for looked after children. These do not make any specific mention of supporting access to digital, apart from in the document referring to those with special communication needs (please see details below) (UK Government, 2019b).
Young Carers	The Children and Families Act 2014, section 17, details the basic responsibilities of a local authority to young carers (legislation.gov.uk, 2014). There is no specific mention of digital inclusion.
Children at risk of homelessness	Children at risk of homelessness fall under the responsibility of their local council's Children's Services (UK Government, 2019e). There are no UK government policies that apply specifically to children at risk of homelessness, although the <i>Homelessness code of guidance for local authorities</i> gives some basic guidance around involving the appropriate services where children are at risk (Ministry of Housing, Communities & Local Government, 2018).
Children with Special Educational Needs (SEND)	The government has a range of policies and guidelines for children with Special Educational Needs and Disability (SEND) (UK Government, 2019c). The SEND code of practice for 0-25 years mentions that special educational support might include assistive technology (Department for Education & Department for Health, 2015) whilst the Supported Internships guidance mentions that interns may also need support in the form of specialist equipment, including assistive technology that may reduce their need for support from job coaches or other people (Department for Education, 2017). The Supporting Looked-After Children with Communication Needs guidance includes links to various digital and online resources that can be used to encourage expression and interaction (Department for Education, 2014). It is worth noting that where digital technology is provided, this may only be in an education or work setting and not necessarily at home.
Vulnerable Children	The Children's Commissioner's <i>Vulnerability Report</i> identifies that the two major forms of support that are recognised and funded by central government for vulnerable children are <i>Children in Need</i> and the <i>Troubled Families Programme</i> , both assessed and delivered by local authorities. <i>Children in Need</i> are a large group of children defined in the Children Act 1989, who are identified and supported by local councils for a wide range of reasons. Children in the <i>Troubled Families Programme</i> are children with complex family needs who receive funding and support through a centrally funded programme (Children's Commissioner for England, 2018). A 2017 review of the <i>Troubled Families Programme</i> makes no specific reference to digital inclusion (Department for Communities and Local Government, 2017).

Local authority approaches

Local authority approaches to working with vulnerable children and young people will differ. We have reviewed relevant strategies in several large local authorities to explore what emphasis is given to digital inclusion within these. This is not exhaustive, but provides an indication of how much consideration is given to digital inclusion within local authority approaches to improving the lives of disadvantaged children and young people.

- The Manchester Children and Young People's Plan 2016 – 2020 outlines six key commitments, one of which is about improving educational attainment in several areas including digital skills (Manchester Children and Young People's Board, 2016). There is also a Greater Manchester Digital Strategy 2018 – 2020 which includes aims to increase the level of and use of basic digital skills. Within Manchester's policies about children in care, there is a statement about homework which states that a child will have support, time and space to complete homework – however there is no specific mention of technology (Manchester City Council, 2019). Within Manchester's policies about children with special educational needs, there is a statement about supporting advances in technology to strengthen and enhance communication, teaching and learning to ensure education, the curriculum and information is more accessible (Manchester City Council, 2017).
- In Glasgow there is a Glasgow Integrated Children and Young People's Service Plan 2017 2020, which sets out the strategic direction for the planning and delivery of services for children, young people and families in the city (Glasgow City Council, 2017). This does not make any reference to digital inclusion. However the city also has a Digital Glasgow Strategy which includes digital inclusion and digital learning (Digital Glasgow, 2018). This notes a commitment to provide access to iPads for children in P6 and above, to improve the availability and performance of WiFi in schools and to develop digital leadership in education. There is clearly an awareness of the importance

- of digital for marginalised groups in Glasgow there was recently a Digital Inclusion Officer recruited to help homeless people access benefits and services (Digit, 2019). Additionally, within the #NotWithoutMe project, the Carnegie UK Trust worked closely with Glasgow City Council as they have considered how they can improve digital inclusion for the looked after and accommodated young people they are responsible for.
- The Birmingham City Council ICT and Digital Strategy (2016-2021) includes a strand about digital facilitation which commits to working with partners to get people online, especially those from the poorest communities (Fullard, 2016). Amongst the materials about support for children and families, there is no obvious reference to digital inclusion including that the SEND and Inclusion Strategy makes no specific reference to the role of digital technology (Inclusion Commission, 2017).

The government's general approach to digital inclusion

UK Digital Strategy

The UK Digital Strategy states that "government is already working with industry and the voluntary sector, to increase the digital capability of those who are digitally excluded, as well as those who are online but lacking the confidence and knowledge to make the most of it." (Department for Digital, Culture, Media & Sport, 2017). The government have invested in digital skills training such as the Future Digital Inclusion and Widening Digital Participation programmes. Free WIFI has been installed across all libraries in England through Arts Council England. The Digital Training and Support Framework provides training or assistance to use an online government service, for citizens who have insufficient digital skills, confidence or access (UK Government, 2019a).

In terms of interventions aimed at children specifically, computing and coding have been made part of the national curriculum and a professional network has been established to offer additional support and training for computing teachers, as described above. The

Raspberry Pi Foundation offer equipment to give more young people digital access, and the BBC Make It Digital programme provided a pocket sized codeable computer to every year 7 child to encourage their interest in digital creativity.

Digital Inclusion and Skills Policy, April 2017

The UK government is working across departments and with private and charity sectors to promote digital inclusion. It is recognised that this is important for individuals, and for the wider economy. There is a particular focus on working with the Department of Education to ensure that digital skills are embedded across the education and training system (Department for Digital, Culture, Media & Sport, 2019b).

Digital Skills Partnership

This is a partnership between public, private and voluntary organisations to help increase the digital capability of individuals and organisations in England. It works across a broad spectrum – from digital inclusion to skills for work and specialist roles. Part of this is supporting computing in schools through upskilling teachers (Department for Digital, Culture, Media & Sport, 2018).

UK Council for Internet Safety (UKCIS)

The UK Council for Internet Safety (UKCIS) is a collaborative forum through which government, the tech community and the third sector work together to ensure the UK is the safest place in the world to be online (UK Government, 2019d).

Private sector

In addition, the government's strategy references some business run programmes focussed on school age children:

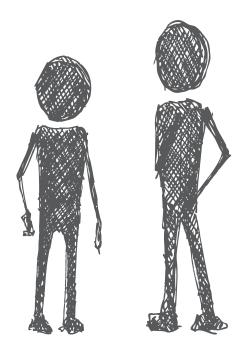
Project which provides free cross-curriculum computer science resources and volunteer-led CPD workshops to help primary school teachers with no previous computer science background feel confident in delivering the curriculum. Working in collaboration with BCS, The Chartered Institute for IT, the project has already reached 33,000 teachers and through them, 1 million primary school children since its launch in September 2014.

- HP run a Digital Schools Awards programme.
 In the UK and Ireland more than 2,000 schools have signed up.
- Samsung Digital Classrooms provide schools with a suite of Samsung technology as well as teacher training, connectivity and maintenance support. Samsung Digital Academies provide vocational training and qualifications in technology for young people to open opportunities for employment.
- Sky Academy Skills Studios provide a half-day interactive experience giving 8-18-year olds the chance to come behind the scenes at Sky and make their own TV report, linked to topics they are studying at school.

Another notable business run programme is:

 Barclay's Digital Eagles programme which runs Code Playground sessions (teaching coding) and DigiSafe Cadets, which is a fun and interactive workshop for 7–11 year olds (Barclays, 2019).

Lloyds Banking Group are also strongly committed to supporting a range of digital inclusion programmes. It supports young people through the Lloyds Bank Academy, which offers online and face-to-face learning opportunities, and runs a Discover Your Digital Future a full-day hands-on event for schools and their pupils.



Voluntary sector

Listed below are a number of key voluntary sector initiatives for digital inclusion — there will be more. A factor to consider here is that digital inclusion is embedded in some broader services and programmes, and therefore is not always immediately visible. For example The Prince's Trust do not have a specific digital inclusion programme, but they do have an Essential Digital Skills Toolkit which they are committed to embedding throughout their programmes, meaning that every young person that they work with should have the opportunity to secure good digital skills (The Prince's Trust, 2015).

Digital inclusion initiatives aimed at children and young people

Learning Foundation

The Learning Foundation has a vision to fully address the current situation where, despite growth in home access to the internet, there are still more than 1 million children in the UK who have little or no access to a device or cannot get online at home, limiting their education opportunities, their chances of improving themselves and hindering their development of digital skills.

Launched as a registered charity in 2001, the aim is to ensure all children have access at home and at school to exciting learning resources so that they may fulfil their potential and overcome disadvantage. This is achieved by working in partnership with schools, parents, charities and businesses.

The Foundation believes that children achieve their potential when they feel engaged with learning, so it enables teachers and parents to inspire engagement through technology. For nearly 20 years they have been providing independent advice and guidance to a wide variety of schools on the best way to introduce 1:1 technology, where every child has their own device to use in class and at home. During that time the Learning Foundation have reached 400,000 children working with thousands of schools and much of this has been supported by tens of thousands of parents.

Social Tech Trust (formerly Nominet Trust) The Digital Reach programme ran during 2017-8. It supported six pilot projects aiming to engage the hardest-to-reach young people with digital skills. The project engaged 3,564 young people between 16 and 24 and made some important findings about how to reach digitally excluded young people most effectively. It was important that the process began with trusted relationships and a shared understanding of why digital is relevant. Young people's access to digital needed to be via computers as well as phones, and activities needed to focus on engagement rather than just learning skills. Project workers were not always digitally confident themselves, and so the programme identified a need to upskill those working with young people. It was also noted that the process of building trust, motivation and confidence takes time, and so programmes needed lots of flexibility to allow this.

Be Internet Citizens

Funded by Google and YouTube and working with UK Youth, this programme educates young people about media literacy, critical thinking and digital citizenship. While it aims to protect young people from some of the risks of being online, it also aims to be positive and empowering, helping them to be expressive and creative. In 2017 the curriculum was taught through workshops in youth centres across the UK and in 2018 it was rolled out in schools.

#NotWithoutMe

Run by the Carnegie UK Trust, #NotWithoutMe was launched in late 2015 and supported four projects across the UK to run from January 2016 to January 2017. Each pilot received £10,000 to test original engagement techniques and develop innovative practice methods to improve digital inclusion and increase digital skills for vulnerable young people. The project found that young people's digital ability varies significantly, and even a self-identified high level of digital skill is not a guarantee of its presence. The projects all started with different aims, but all worked on developing a broad set of skills that touch on many aspects of young people's lives, rather than focussing on digital skills in isolation. Other learnings were that it was important to upskill the

support network of young people, and invest in creating a comfortable and positive environment. It was also valuable to involve young people in the design of the initiatives and remain flexible for optimal engagement. The #NotWithoutMe programme continues to support further practice, policy and research into digital inclusion with vulnerable young people.

Generation Code (a UK Youth programme) Generation Code is run in partnership with Microsoft to teach coding to 11 – 19 year olds.

General digital inclusion initiatives (not children and young people specific)

Good Things Foundation

The Good Things Foundation is a leading social change charity tackling digital exclusion. They co-ordinate the *Online Centres Network* and *Learn My Way* online learning platform. Their *Future Digital Inclusion* programme is funded by the Department of Education and is the largest digital inclusion programme in the UK. *Learn My Way* is commonly used by public libraries to deliver digital training.

Digital Unite

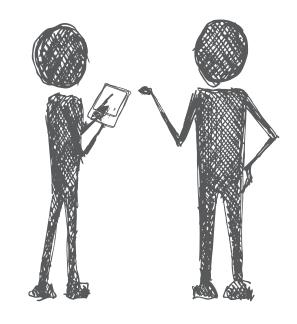
Digital Unite run a network of Digital Champions, providing them with online training courses and support to improve digital skills in organisations.

Big Lottery Fund

The Big Lottery Fund has launched a new Digital Fund offering grants to charities and community organisations to engage people with digital tools and approaches.

Citizens Online

Citizens Online work with organisations to help them with their internal strategy around digital exclusion.



We are Digital

We Are Digital work with the UK's largest housing associations, companies and charities to deliver basic skills courses, digital inclusion workshops and one to one home training.

Given that older people are particularly vulnerable to and impacted by digital exclusion, many programmes and resources have focussed on this age group. Additionally since so many children and young people are accessing the internet, in a wide variety of ways and for significant amounts of time, there is an overall focus on protecting children's safety and wellbeing online, with relatively few materials aimed at developing their basic digital skills. There is also an emphasis on programming and coding activities for children and young people, which while positive, can miss the fact that some children need support with more fundamental issues such as creating and editing a document, or researching a topic effectively online.

Digital inclusion success stories

This report has highlighted that the issue of digital access is far from straightforward. In terms of children and young people, evidence suggests that the most vulnerable are those who are left behind, and that this is highly likely to deepen existing disadvantage as the digital world becomes increasingly omnipotent. It is a complex picture, and the best interventions will reflect this, particularly noting that digital access is both about devices and skills.

To conclude, here are some success stories from digital inclusion programmes, which show the incredible difference that positive interventions can make.

THE LEARNING FOUNDATION CASE STUDY: JACK

When Donna's son Jack (not his real name) got a computer via his school's e-learning programme it proved to be a real turning point. Quiet and not one to ask questions at school, Jack tended to miss out on things; he didn't really enjoy doing homework, as it used to stress him out sometimes

"He absolutely loves it even now two years later," says Donna. "We hadn't had a computer at home before, so it was a big change for the whole family."

Jack is coming out of himself more and more, and his grades have gone up; even when he is feeling quiet he can ask questions online, so he doesn't always have to put his hand up in class. His mum says he's doing his homework better and faster.

He and his mates often link up on a project to share ideas without having to go round to each other's houses. Of course, Jack still does that too but only when he's finished his homework! "If anything, he probably sees more of his friends now as he is finding homework so much easier," Donna explains.

Being online means Jack can receive rapid feedback from teachers, whereas previously he might have had to wait days. "It is like the school is working one to one with Jack, as teachers can now concentrate on individual students better and give them the help they need," says Donna.

One thing Jack particularly enjoys is listening to music and this relaxes him a lot. "We have a very busy house and my eldest son struggles with autism; it can make life difficult for all of us sometimes. He did have some behaviour issues before and I know that having the device has helped him.

"It has made a big difference to me personally and my other children too: we really feel like it has brought us all on and we are part of the future now."

DIGITAL REACH CASE STUDY: CARERS TRUST PROJECT

(Social Tech Trust, 2018)

Carers Trust partnered with Good Things Foundation to develop an e-learning resource for young adult carers.

"Peter and his brother came to England after fleeing their birth country. Peter cares for his brother who has post-traumatic stress disorder, which presents itself through physical symptoms. He has very little time to himself and always puts his brother's needs first. Peter has been learning English for two years, and his overall goal is to pass his exams and improve his grammar. However, caring for his brother means he hasn't been able to dedicate enough time to his studies. Peter has internet access at home, though he was previously unaware that there were opportunities to study and learn online; he had only ever used the internet for communicating with family and friends through social media. Carers Trust worked with Peter to help him study more flexibly by using online learning tools – like resources for learning English as a second language.

"He continues to attend college in the morning and is now practising his grammar online in the afternoons. This flexible way of learning allows him to fit in study time while he's at home caring for his brother. Peter has found that he's becoming more confident online and is able to access resources that he didn't know existed. He has been accessing support to manage his finances online and improve support for his brother."

Carers Trust

#NOTWITHOUTME CASE STUDY: THE PAVILION (BARNET) (Wilson & Grant, 2017)

The Pavilion is a Pupil Referral Unit in Barnet that provides flexible alternative education provision for approximately 128 students living in the area who are unable to attend mainstream education for a variety of reasons.

This project used creative media resources to support digital inclusion and encourage empathy, understanding and peer support amongst students. Among other challenges they highlighted that most (not all) of the young people have smartphones, but many live in low income households which are often overcrowded and with no access to home computer, broadband or alternative at home.

"Some of the students were able to access equipment they had never seen or had the opportunity to use before, because they are coming from backgrounds of real deprivation, so for them to have the opportunity to use a camera like that and then sit at a computer and use computer software of that nature would have been something that they would have found exciting but also challenging because it would have been outside of their usual experience"

"For one traumatised student, the digital camera created a breakthrough into re-engaging with learning. She was not able to sit in lessons or concentrate on her core subjects. However, she discovered the strategy of being able to participate from being behind the camera. She created an art-book of her artwork and photos and took a pride in her achievements. She was able to say:

"I enjoyed using the cameras because it is fun, entertaining and interesting and I like taking photos.

Comments from Pavilion Staff

DIGITAL REACH CASE STUDY: ACTION FOR CHILDREN PROJECT (Social Tech Trust, 2018)

Action for Children piloted an 'embedded' approach to digital skills building. By digitising their work, young people picked up new digital skills as they worked towards their main goals of gaining a qualification and work placement. Participants were motivated to get past their digital fears to gain a construction qualification – even picking up skills they previously found intimidating, like word processing and uploading documents.

"The growth and development that we've seen in young people through this programme has been absolutely fantastic. They've started at a point where they're quite intimidated by what they're going to learn. [They were] Almost reluctant to be in those kind of situations, but their confidence has grown."

Maria Williamson, Children's Services Manager, Action for Children

"I think my future is bright, and I can work hard and make a life for myself. Move about, work hard, and move up in the world. Have a good career."

Levi, participant

#NOTWITHOUTME CASE STUDY: MENCAP IN NORTHERN IRELAND (Wilson & Grant, 2017)

Mencap is the leading UK charity for people with a learning disability and their families. Through the #NotWithoutMe project they supported 16 young people with a learning disability aged 12-26 in Northern Ireland, through fortnightly workshops covering a variety of online topics and skills, particularly focusing on safety and digital content creation.

The staff were aware one of the key barriers to digital inclusion for young people with learning disabilities is their lack of exposure to using technology compared with their peers without disabilities, increasing their risk of social exclusion, vulnerability to inappropriate use and cyber-bulling. Within the project there was a significant differentiation in terms of access to technology. Some of the young people had their own smartphones and some young people did not have a phone at all.

"One of the girls who had little to no experience with technology was able to go onto her blog and write it up all herself by the end of it – which was a massive step"

The project also provided evidence for Mencap to call for further digital inclusion work and support for young people with learning disabilities and highlighted the need for more appreciation that young people with learning disabilities can take part in digital projects.

"That whole exposure that other practitioners has really challenged their perceptions about whether you could include young people with a learning disability in this type of work at all – that was really valuable... From our point of view to get people with a disability, and certainly to get people with a learning disability to level that playing field [in terms of digital access] from our point of view it's a great lobbying tool"

Comments from Mencap Youth Workers

Bibliography

Barclays, 2019. *Code Playground*. [Online] Available at: https://events.uk.barclays/codeplayground [Accessed February 2019].

Becta, 2009. The impact of digital technology: A review of the evidence of the impact of digital technologies on formal education, Coventry: Becta.

Bonevski, B. et al., 2014. *US National Library of Medicine National Institutes of Health*. [Online] Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3974746/ [Accessed February 2019].

Cebr, 2018. The economic impact of Digital Inclusion in the UK, London: Cebr.

Children's Commissioner for England, 2017. *Growing Up Digital*, London: Children's Commissioner for England.

Children's Commissioner for England, 2018. *Vulnerability Report*, London: Children's Commissioner.

Christians Against Poverty, 2018. *Checking in:* applying and waiting for Universal Credit, London: Christians Against Poverty.

Citizens Advice Scotland, 2018. *Disconnected*, Edinburgh: Citizens Advice Scotland.

Citizens Advice Scotland, 2018. *Locked Out The Smart Phone Defecit*, Edinburgh: Citizens Advice Scotland. Available at: https://www.cas.org.uk/system/files/publications/lockedout-thesmartphonedeficit.pdf

Davies, H.C., Eynon, R., Wilkin, S., 2017. Neoliberal gremlins? How a scheme to help disadvantaged young people thrive online fell short of its ambitions. *Information, Communication & Society*, 20(6).

Department for Communities and Local Government, 2017. *National evaluation of the Troubled Families Programme 2015-2020 family outcomes – national and local datasets: part 1* Available at: https://www.gov.uk/government/publications/national-evaluation-of-the-troubled-families-programme-2015-to-2020 [Accessed January 2019]

Department for Digital, Culture, Media & Sport, 2017. *UK Digital Strategy 2017* Available at: https://www.gov.uk/government/publications/ukdigital-strategy [Accessed January 2019]

Department for Digital, Culture, Media & Sport, 2018. *Digital Skills Partnership*. [Online] Available at: https://www.gov.uk/guidance/digital-skills-partnership [Accessed January 2019].

Department for Digital, Culture, Media & Sport, 2019a. *Broadband Delivery UK.* [Online] Available at: https://www.gov.uk/guidance/broadband-delivery-uk [Accessed January 2019].

Department for Digital, Culture, Media & Sport, 2019b. *Digital Skills and Inclusion Policy*. [Online] Available at: https://www.gov.uk/government/publications/digital-inclusion-and-skills-policy/digital-skills-and-inclusion-policy [Accessed February 2019].

Department for Education & Department for Health, 2015. *Special educational needs and disability code of practice: 0 to 25 years.* Available at: https://www.gov.uk/government/publications/send-code-of-practice-0-to-25 [Accessed January 2019]

Department for Education, 2011. *Teachers' Standards*. Available at: https://www.gov.uk/government/publications/teachers-standards [Accessed January 2019]

Department for Education, 2013. *National curriculum in England: computing programmes of study.* [Online] Available at: https://www.gov.uk/government/publications/national-curriculum-in-england-computing-programmes-of-study/national-curriculum-in-england-computing-programmes-of-study[Accessed January 2019].

Department for Education, 2014. Supporting looked-after children with communication needs. Available at: https://www.gov.uk/government/publications/supporting-looked-after-children-with-communication-needs [Accessed January 2019]

Department for Education, 2016. *DfE strategy* 2015-2020: World-class education and care. Available at: https://www.gov.uk/government/publications/dfe-strategy-2015-to-2020-world-class-education-and-care [Accessed January 2019]

Department for Education, 2017. Supported internships for young people with Education, Health and Care plans. Available at: https://www.gov.uk/government/publications/supported-internships-for-young-people-with-learning-difficulties [Accessed January 2019]

Digit, 2019. Glasgow Digital Inclusion Officer to Help Tackle Homelessness. [Online] Available at: https://digit.fyi/glasgow-digital-inclusion/ [Accessed January 2019].

Digital Glasgow, 2018. *Digital Glasgow Strategy*, Glasgow: Glasgow City Council.
Available at: https://www.glasgow.gov.uk/index.aspx?articleid=17711 [Accessed February 2019]

Echazarra, A, 2019. Organisation for Economic Cooperation and Development (OECD). [Online] Available at: http://ow.ly/ff0030jPEBQ [Accessed February 2019].

Education Development Trust, 2013. *Beyond the digital divide: young people and ICT.* [Online] Available at: https://www.educationdevelopment trust.com/en-GB/our-research/our-research-library/2013/r-beyond-the-digital-divide-2013 [Accessed February 2019].

Eynon, R., Geniets, A., 2016. The digital skills paradox: how do digitally excluded youth develop skills to use the internet?. *Learning, Media and Technology*, 41(3).

Fullard, A., 2016. *Birmingham City Council ICT and Digital Strategy (2016-2021)*, Birmingham: Birmingham City Council.

Glasgow City Council, 2017. *Glasgow City Children* and Young People Integrated Service Plan 2017-2020, Glasgow: Glasgow City Council.

Good Things Foundation, 2019. *Good Things Foundation*. [Online] Available at: https://www.goodthingsfoundation.org/areas-of-work/digital-inclusion [Accessed February 2019].

Harris, C., Straker, L., Pollock, C, 2017. *A* socioeconomic related 'digital divide' exists in how, not if, yound people use computers. [Online] Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0175011 [Accessed January 2019].

Helsper, E., Smirnova, S., 2016. *Slipping Through the Net*, London: The Prince's Trust.

ICF Consulting Services Ltd, 2015. *Literature Review on the Impact of Digital*, Edinburgh: The Scottish Government.

Inclusion Commission, 2017. *Birmingham's Strategy for SEND and Inclusion 2017-2020*, Birmingham: Birmingham City Council.

Intel & Fujitsu, 2018. *The road to digital learning,* Birmingham: University of Birmingham.

Internet Matters, 2019. Vulnerable Children in a Digital World [Online] Available at: https://www.internetmatters.org/about-us/vulnerable-children-in-a-digital-world-report/ [Accessed February 2019]

Kelleher, C., Seymour, M., Halpenny, A., 2014. Promoting the Participation of Seldom Heard Young People: A Review of the Literature on Best Practice Principles, Dublin: Dublin Institute of Technology.

Learning Wales, 2018. *Digital Competence Framework*. [Online] Available at: https://learning.gov.wales/resources/browse-all/digital-competence-framework/?lang=en [Accessed January 2019].

legislation.gov.uk, 2014. *Children and Families Act* 2014. [Online] Available at: http://www.legislation.gov.uk/ukpga/2014/6/section/96/enacted [Accessed February 2019].

Livingstone, S. 2019. From policing screen time to weighing screen use. Available at https://blogs.lse.ac.uk/parenting4digitalfuture/2019/02/08/frompolicing-screen-time/ [Accessed February 2019]

Lloyds Bank, 2017. *UK Consumer Digital Index*, London: Lloyds Bank.

Lloyds Bank, 2018. *UK Consumer Digital Index*, London: Lloyds Bank.

Lloyds Bank, 2019. *Digital Insight*. [Online] Available at: https://www.lloydsbankinggroup.com/media/digital-insight/ [Accessed February 2019].

Mahmood, K., 2016. Do People Overestimate their Information Literacy Skills? A Systematic Review of Empirical Evidence on the DunningKruger Effect, Punjab: Communications in Information Literacy.

Manchester Children and Young People's Board, 2016. *Manchester's Children and Young People's Plan 2016-2020*, Manchester: Manchester City Council.

Manchester City Council, 2017. *Manchester Accessibility Strategy 2017-2019*, Manchester: Mancheter City Council.

Manchester City Council, 2019. Your Education. [Online] Available at: https://secure.manchester.gov.uk/info/263/children_in_care/7208/your_education/3 [Accessed January 2019].

Miller, C., Bartlett, J., 2012. 'Digital fluency': towards young people's critical use of the internet. [Online] Available at: http://www.academia. edu/2263638/Miller_C._and_Bartlett_J._2012._ Digital_fluency_towards_young_people_s_ critical_use_of_the_internet._Journal_of_ Information_Literacy_6_2_pp._35-55 [Accessed February 2019].

Ministry of Housing, Communities & Local Government, 2018. *Homelessness code of guidance for local authorities*. [Online] Available at: https://www.gov.uk/guidance/homelessness-code-of-guidance-for-local-authorities/chapter-2-homelessness-strategies-and-reviews [Accessed February 2019].

Moore, R., Vitale, D., Stawinoga, N, 2018. *The Digital Divide and Educational Equity*, s.l.: ACT Research and Centre for Equity in Learning.

National Centre for Computing Education, 2019. Helping you teach computing. [Online] Available at: https://teachcomputing.org/ [Accessed January 2019]. National Statistics, D. f. W. a. P., 2018. *Households below average income: 1994/95 to 2016/17.* [Online] Available at: https://www.gov.uk/government/statistics/households-below-average-income-199495-to-201617 [Accessed February 2019].

Nugent, R. et al., 2015. *National Chidren's Bureau Northern Ireland*, Belfast: National Chidren's Bureau Northern Ireland.

Ofcom, 2014. *Availability of communications services in UK cities*, London: Ofcom.

Ofcom, 2014. How broadband coverage varies between cities. [Online] Available at: https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2014/cities-summary-report [Accessed January 2019].

Ofcom, 2016a. 'Smartphone by default' internet users – A qualitative research report, London: Ofcom.

Ofcom, 2017a. *Children and Parents: Media use and Attitudes Report*, London: Ofcom.

Ofcom, 2017b. *Connected Nations 2017*, London: Ofcom.

Ofcom, 2017c. *Media Use and Attitudes Report*, London: Ofcom.

Ofcom, 2017d. *Ofcom Media Literacy Tracker* 2017 – Children aged 5-15 and parents, London: Ofcom.

Ofcom, 2018a. *Access and Inclusion 2018*, London: Ofcom.

Ofcom, 2018b. *Communications Market Report*, London: Ofcom.

Ofcom, 2018c. *Connected Nations 2018*, London: Ofcom.

Ofcom, 2018d. Ofcom proposes broadband universal service providers. [Online] Available at: https://www.ofcom.org.uk/about-ofcom/latest/features-and-news/ofcom-proposes-broadband-universal-service-providers [Accessed February 2019].

Office for National Statistics, 2018. *Inernet access – households and individuals, Great Britain: 2018.* [Online] Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2018 [Accessed February 2019].

Revealing Reality, 2018. *Revealing Reality*. [Online] Available at: https://www.revealingreality.co.uk/wp-content/uploads/2018/04/RR-THROUGH-THE-LOOKING-GLASS-framework-bw-8a.pdf [Accessed February 2019].

Royal College of Paediatrics and Child Health, 2019. Build screen time around family activities not the other way round parents told. [Online] Available at: https://www.rcpch.ac.uk/news-events/news/build-screen-time-around-family-activities-not-other-way-round-parents-told [Accessed January 2019].

Social Tech Trust, 2018. *Digital Reach Insights*, Oxford: Social Tech Trust.

The Prince's Trust, 2015. *Digital Skills Toolkit*. [Online] Available at: https://www.princes-trust.org.uk/Document_Digital-Skills-Toolkit.pdf [Accessed January 2019].

The Scottish Government, 2016. *Enhancing learning and teaching through the use of digital technology*, Edinburgh: The Scottish Government.

UK Government, 2019a. *Digital Training and Support*. [Online] Available at: https://www.contractsfinder.service.gov.uk/Notice/c887d39a-626d-43a4-982a-e39bf5de6048 [Accessed February 2019].

UK Government, 2019b. *Looked-after Children*. [Online] Available at: https://www.gov.uk/topic/schools-colleges-childrens-services/looked-after-children [Accessed February 2019].

UK Government, 2019c. *Special educational needs and disability (SEND)*. [Online] Available at: https://www.gov.uk/topic/schools-colleges-childrens-services/special-educational-needs-disabilities [Accessed February 2019].

UK Government, 2019d. *UK Council for Internet Safety*. [Online] Available at: https://www.gov.uk/government/organisations/uk-council-for-internet-safety [Accessed February 2019].

UK Government, 2019e. Your rights to housing if you're under 18. [Online] Available at: https://www.gov.uk/your-rights-to-housing-if-youre-under-18 [Accessed February 2019].

United Nations Human Rights Officer of the High Commissioner, 2018. *United Nations Human Rights Office of the High Commissioner.* [Online] Available at: https://www.ohchr.org/Documents/Issues/Poverty/EOM_GB_16Nov2018.pdf [Accessed February 2019].

Uswitch, 2019. *Uswitch*. [Online] Available at: https://www.uswitch.com/broadband/guides/what_is_wireless_broadband/ [Accessed February 2019].

Uswitch, 2019. What is wireless broadband?. [Online] Available at: https://www.uswitch.com/broadband/guides/what_is_wireless_broadband/[Accessed February 2019].

Webb, A., 2017. How does your household spend compare?. [Online] Available at: https://www.moneyadviceservice.org.uk/blog/how-does-your-household-food-spend-compare [Accessed January 2019].

Welsh Government, 2017. *New school curriculum:* overview. [Online] Available at: https://beta.gov. wales/new-school-curriculum-overview [Accessed January 2019].

White, D., 2013. *Across the Divide*, Dunfermline: Carnegie UK Trust.

Wilson, G., Grant, A., 2017. *A digital world for all?*, Dunfermline: Carnegie UK Trust.

Young Minds, 2016. *Resilience for the digital World*, London: Young Minds.



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