DIGITAL DISADVANTAGE – BARRIERS TO DIGITAL SKILLS AND ACCESS

Insights Paper 1: Opportunities and Barriers

Catch22 and Nominet – November 2021

FOREWORD

This report is the first in a series of four reports developed by Catch22 and Nominet to explore the barriers to digital skills and access for some of the most disadvantaged people in the UK.

These insights will inform recommendations, which will in time support Catch22 and Nominet in developing a strategic partnership which tackles systemic inequality, whilst responding to grassroots need. We are making it available in the hope others can use the lessons, ideas and insights.

It seeks to set the scene for the proceeding papers by highlighting the incredible opportunities presented by the growth of the digital economy and the substantial barriers disadvantaged communities face in accessing these opportunities. Catch22's work has shown how accessing digital skills can be transformative in future employment and progression.

The paper has been informed by a research review and interviews with 10 experts from leading organisations working within the digital inclusion and youth inclusion space. The paper seeks to further illuminate findings from the Nominet Digital Youth Index, a free annual benchmarking platform produced in partnership with Opinium, an award-winning strategic insight company. The results of the research and interviews have been analysed independently by Bean Research[i] in Autumn 2021.

Subsequent papers will seek to build on this paper by exploring who is being left behind and how we address these barriers and create opportunities through the lens of young people supported by Catch22. Addressing this is critical in securing an equitable, digitally confident and literate population in the UK and the beyond.

" Whilst there have been many efforts over the last number of years to close the digital skills gap — both for the digital economy and to address underemployment and social mobility - real evidenced and sustainable change has evaded us. There are still far too many young people, particularly from disadvantaged and underrepresented groups, not finding pathways into tech or digital careers. And there are still too many roles, from entry level upwards, that are chronically hard to recruit for.

We can't continue to repeat the same approaches expecting a different outcome. These papers are the start of a more forensic inspection of why these dynamics have been so hard to shift - what's working, what's not, why, and why not? What lessons can we draw from successful change elsewhere, and how we might need to adapt and develop initiatives that really work for people, for employers and for the UK economy. "

Chris Ashworth, Head of Social Impact - Nominet

catch
22

NOMINET
SOCIAL IMPACT

"

Digital careers offer real opportunity for people to thrive. This isn't just about jobs in tech companies – more and more employers need digital capabilities. The UK economy has a big gap to fill, and that gap is going to get bigger if we don't mobilise.

Digital careers offer a chance to level inequality. Roles with a digital component tend to offer better progression and pay, with transferable skills that serve individuals across their careers.

Too much of the focus currently is on advanced digital skills study (such as bootcamps or degrees). What's missing is a clear picture of pathways for people with a base level of digital skills, who could thrive in a digital career. To support the UK economy long-term, we need better bridges for entry-level roles and apprenticeships in digital careers. Within this picture, we need to understand why diversity is still a challenge, and why young talented people are still being overlooked.

We've made great strides in tackling the digital divide and unlocking opportunities for the most disadvantaged. But we know that representation across minority groups isn't where it needs to be. We need greater understanding of the mechanisms for change, and to ensure the people we support have their voices heard.

Digital careers offer an incredible opportunity for economic inclusion, social mobility and equality. We embarked on this research to build a richer picture of pathways into digital careers and how employers, government and the third sector can pull together to build the future UK workforce.

"

Kat Dixon, Director of Partnerships at Catch22

catch 22

◎ **NOMINET SOCIAL IMPACT**

SUMMARY

While there has been much written about digital exclusion and the digital skills gap for those in work, this paper focusses on the implications for disadvantaged young people in accessing and progressing into work, holding up a mirror to deeper existing social inequalities.

The last two years have shone a light on the inequalities of digital access and skills, and 'intensified' the digital divides[ii]. Indeed, the Social Mobility Commission's 2021 State of the Nation report recognises the role of digital access and skills in supporting future social mobility and reduced inequality[iii].

This paper explores the context of how we can prevent established inequalities for young people widening through digital disadvantage. It offers a new perspective on barriers and the opportunities for disadvantaged young people's digital literacy for entering and progressing work. We have identified four types of barriers: access, skills, core capabilities and lived experience. Each is explored separately through the paper.

In terms of access, disadvantaged people start from an impossible position – with only half (51%) of households earning between £6,000-10,000 having home internet access compared with 99% of households with an income of over £40,001[iv]. And in lockdown, two in three young people (67%) studying at home shared devices with at least one other person[v].

The Nominet Digital Youth Index demonstrates the fact that while 90% of young people have a smartphone, six million young people do not have home broadband or a laptop or desktop needed to access education or skills development, or to search for, apply or progress in work[vi]. But disadvantaged young people need more than devices and data. They need essential skills for life, without which we cannot expect young people to thrive.

And digital skills is just one element of digital disadvantage. This paper suggests that many of the factors influencing barriers to skills acquisition and employment opportunities in the wider world also impact in the digital world, including core capabilities and digital lived experience. Substantial research exists into the employability needs of young, disadvantaged people, but little links this to the digital skills agenda. In addition, young people's personal experience of the digital world, and their teachers, parents and carers' approach are crucial for how digital work skills are integrated into learning. This digital lens is fundamental to harnessing the value of digital literacy for work, and in doing so create an equitable, digitally confident nation.

This paper shows digital disadvantage reinforces and exacerbates the barriers for disadvantaged young people trying to move into work.

NOMINET
SOCIAL IMPACT

NOMINET
SOCIAL IMPACT
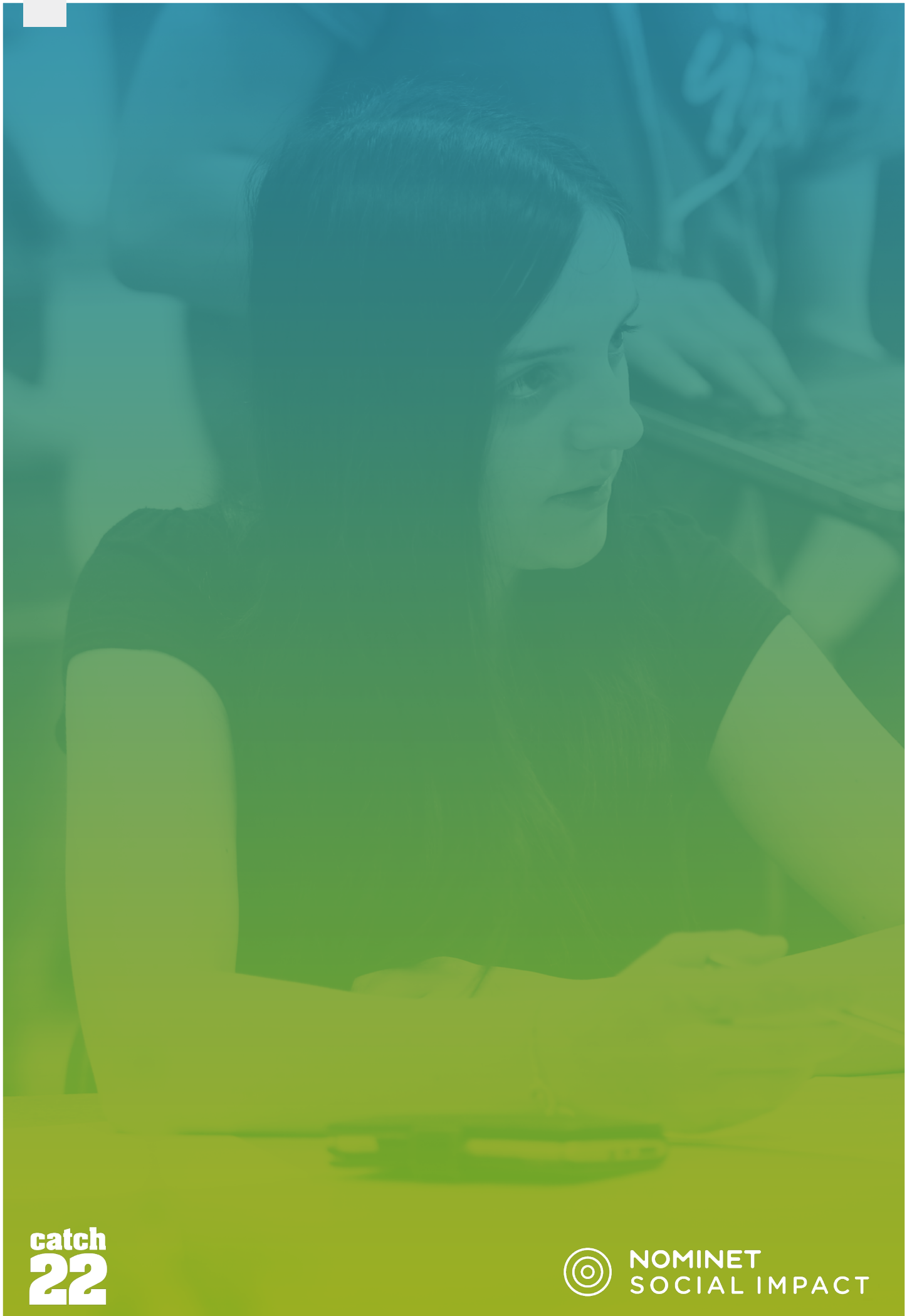
WHAT DO WE MEAN BY DIGITAL SKILLS?

'Digital skills' is an incredibly broad term covering a vast range of competencies – everything from the ability to turn on a laptop through to advanced computer programming. This creates significant challenges in considering the opportunities and risks that digital skills present to disadvantaged young people, as similar terms are often used with widely differing meanings.

The Lloyds Essential Digital Skills Framework[vii] and the UK Government's Essential Digital Skills Framework[viii], on which it draws, provide a useful base for considering the difference between fundamental skills ('Foundation Level'), those needed to navigate life effectively ('Life Essential Digital Skills'), and those needed for work for those already in employment ('Work Essential Digital Skills'). Given part of the challenge is terminology and conceptualisation, we have attempted to cross reference and lay out a clear glossary as an appendix to this paper.

However, as this paper focuses specifically on digital barriers to employment, we have chosen to divide digital skills into two main categories; 'Digital Skills for Work', broadly the basic digital skills increasingly required for the vast majority of jobs and 'Advanced Digital Skills', those necessary to secure employment in the tech or Information Technology (IT) sector.

For these two categories, we are using the definitions shown below which we have adopted from the definitions developed by The Learning & Work Institute (which in turn built on the work of Hecker and Loprest)[ix].

Whilst not directly comparable, the definition we have adopted for 'Digital Skills for Work' covers many of the competencies outlined in the 17 work tasks that define 'Work Essential Digital Skills' within the Lloyd's framework (which mirrors the UK Government's 'Additional Skills for Work' within their Essential Digital Framework). In this sense, the levels of 'Work Essential Digital Skills' identified in the Lloyd's Essential Digital Skills Report can broadly be interpreted as correlating with the levels of 'Digital Skills for Work' as defined below.

'Digital Skills for Work' also broadly mirrors the 'Hidden Middle' issue identified by FutureDotNow in their 'Spectrum of Digital Skills' which is explored later in this paper. They identify the 'Hidden Middle' as individuals that occupy the space between the digitally excluded and those with advanced digital skills, similar to our 'Digital Skills for Work' definition.

DIGITAL SKILLS FOR WORK

A proficiency with common software such as Microsoft Word, excel, PowerPoint; ability to process digital information and content; ability to communicate digitally; and the ability to learn new digital skills

ADVANCED DIGITAL SKILLS

A good knowledge across a range of digital skills, as well as in-depth specialist knowledge in one or more area, such as computer aided design, coding and use of specialist digital software

catch
22

NOMINET
SOCIAL IMPACT

WHY IT MATTERS

Recent research shows that 'Digital Skills for Work' are now a fundamental requirement for almost all job roles, with 92% of businesses stating that a basic level of digital skills is important for employees in their organisation, and jobs vacancy data showing that four in five (82%) job vacancies require digital skills[x].

Jobs vacancy data shows that 82% of job vacancies require digital skills

Excluding IT roles, analysis shows that over two in three (68%) roles require digital skills, including many lower-skilled roles[xi]. Even in the industry with the lowest level of digital skills need – manufacturing - 87% of employers stated that it was important that employees had basic digital skills.

The need for digital skills is not lost on young people. Some 88% of young people realise that their digital skills will be essential for their careers[xii]. Although, despite this, enrolment rates across formal IT training (GCSE, A-Level, Further Education and Apprenticeships) have fallen significantly over the past five years.

Whilst 'Digital Skills for Work' are the primary focus of these papers, it is important to recognise that they form the foundation on which more complex 'Advanced Digital Skills' can be built and that they provide a pathway to the rapidly growing market for advanced digital skills.

Demand for these 'Advanced Digital Skills' is already very high with over one in four employers (27%) reporting that the majority of their workers currently require advanced digital skills. As an example, in 2019 software developer was one of the top five sought-after roles across UK cities, amongst key worker roles such as nurses and social care workers[xiii].

This is also a jobs market that is set to grow - 60% of employers report that their reliance on 'Advanced Digital Skills' is set to increase over the next five years and jobs market data shows that the number of advertised tech jobs in 2021 was 42% higher than pre-pandemic levels[xv].
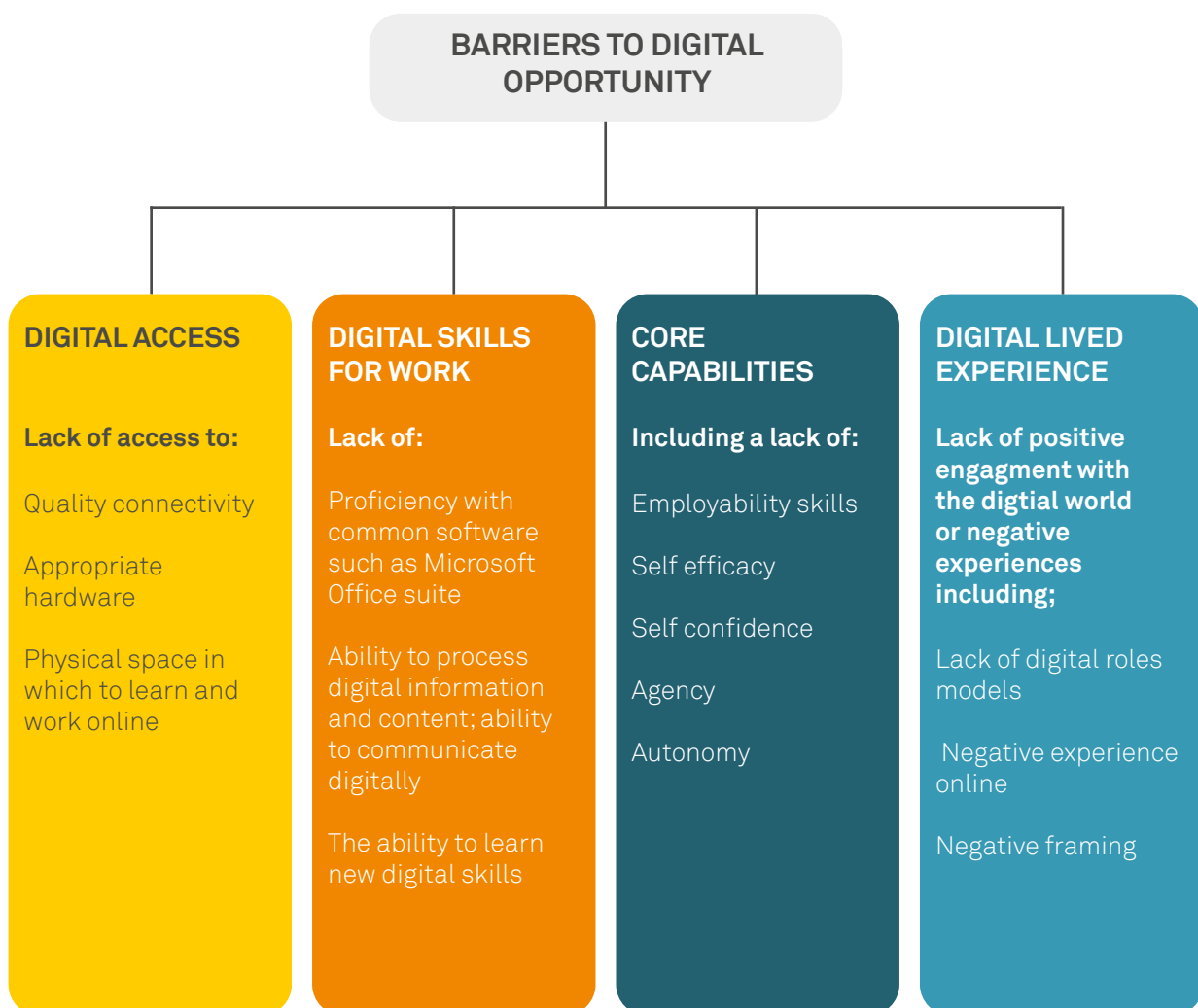
We set out in these papers to focus primarily on areas of disadvantage in 'Digital Skills for Work' of the kind important to a vast number of non-IT roles. However, it is critical that we do not lock a generation of disadvantaged young people out from the incredible opportunities or from the digital pay premium estimated at £8,300 for roles requiring 'Advanced Digital Skills'[xvi].

In 2020 the tech sector represented 7.7% of the UK economy and grew six times faster than the rest of the economy -TechNation

At a national level we need to take steps to address the digital skills gap, as it presents an enormous risk not only to those who may be unable to access the jobs market but also the wider economy. Microsoft research shows that 69% of UK business leaders believe that their company has a digital skills gap and that 44% are worried this would have a negative impact on their success in the next 12 months[xvii]. At a national level, estimates from Accenture suggest that the digital skills shortage could cost the UK economy up to £141 billion in GDP growth over the next 10 years[xviii]. Digital skills are therefore a matter of both incredible economic and social importance.

NOMINET SOCIAL IMPACT

BARRIERS TO ACCESS, SKILLS AND OPPORTUNITY

Our research for this paper, amongst organisations working within the digital skills sector, and/or with marginalised and disadvantaged young people, highlighted four types of barrier. These are illustrated below, and each is explored in greater detail throughout the remainder of this paper.

BARRIERS TO DIGITAL OPPORTUNITY

DIGITAL ACCESS

Lack of access to:

Quality connectivity

Appropriate hardware

Physical space in which to learn and work online

DIGITAL SKILLS FOR WORK

Lack of:

Proficiency with common software such as Microsoft Office suite

Ability to process digital information and content; ability to communicate digitally

The ability to learn new digital skills

CORE CAPABILITIES

Including a lack of:

Employability skills

Self efficacy

Self confidence

Agency

Autonomy

DIGITAL LIVED EXPERIENCE

Lack of positive engagment with the digtial world or negative experiences including;

Lack of digital roles models

Negative experience online

Negative framing

These barriers, identified by the interviewees, mirror many of the factors identified by the New Philanthropy Capital Journey to EmploymenT (JET) framework, which considers factors that are important in understanding young people's journey to employment. It suggests that many of the digital barriers to work are best viewed as digital lens on pre-existing barriers to employment, a dynamic we explore further in this paper[xix].

catch 22

NOMINET SOCIAL IMPACT

A. DIGITAL ACCESS

Lack of appropriate technology and quality connectivity not only creates a fundamental barrier to digital inclusion but compounds existing inequalities by preventing access to economic opportunity.

The UK Government's 'Essential Digital Skills Framework' identifies a Foundation Level - the ability to access the Internet by yourself. A number of things must be true for this to be the case, including an individual being able to use a device, connect to a Wi-Fi network and create and update passwords (there are seven essential tasks in total). The estimated 10 million lacking the Foundation Level are most likely to be people in three distinct groups: those aged 65+, people with impairments and those with no formal qualifications[xx].

Our research indicates that this masks the fact that for disadvantaged young people, the experience is less about ability or desire, but more a divide in reliable digital access.

"Without the data and devices, the digital skills gap gets so much bigger" - Interviewee

The pandemic has placed a spotlight on awareness of digital exclusion, and the data is stark. Ofcom's Technology Tracker 2021[xxi] research showed that one in five children who had been home schooling did not have access to an appropriate device for their online home-learning needs. Furthermore, young people from the lowest socio-economic groups were six times as likely to not have access to the internet, and ten times as likely to not have access to a laptop, desktop or tablet compared to young people from the highest socioeconomic groups[xxii].

For disadvantaged young people therefore, this is perhaps more about digital poverty as a function of poverty more broadly, with such a clear correlation between internet access and household income. This is a consistent theme through the research published. In lower socio-economic groups, one in five (21%) households with children have no access to an appropriate device and over one in twenty (6%) have no access to the internet[xxiii].

Fair by Design's analysis of the poverty premium shows that digital access can cost a lot more for those on lower incomes[xxiv]. It is interesting to see that some providers, such as BT, have upgraded their social tariff to a fibre option that is accessible to anyone claiming Universal Credit. However, even such a laudable initiative presents challenges, for example to those who are not claiming Universal Credit but still face significant financial barriers to access[xxv].

The Social Mobility Commission's 2021 State of the Nation report recognises the role of digital access and skills in alleviating inequality. One of its recommended seven steps to recovery was access to affordable broadband and digital devices for all households, as well as the skills to thrive in a 21st century world.

"At the most basic level if young people don't have access to devices and data at home, they start off at a huge disadvantage because they can't access the vast majority of vacancies or build a CV" - Interviewee

catch
22

NOMINET
SOCIAL IMPACT

Catch22's experience, alongside most interviewees, is that this manifests itself in unreliability of devices and data, which is critical for time-consuming job searching, applications and interviews. Joseph Rowntree Foundation research[xxvi] shows that most employers advertise vacancies online and close them as soon as they have sufficient applicants to select from. Jobseekers found that they needed to respond to vacancies quickly, and those without internet access at home were at a significant disadvantage. For digital literacy, basic access is simply not enough – high quality access is critical.

The Nominet Digital Youth Index[xxvii] also emphasises this difference between having some level of digital access and having access to the tools and infrastructure needed for many educational and professional tasks. For example, whilst

87% of young people have smart phones, 15% (approximately 2.2 million) of young people have a smartphone but no access to a laptop or desktop, and a third (32%) of young people do not have access to home broadband.

Combined, this leaves 6 million (42%) young people without a laptop/desktop or home broadband[xxviii]. Digital access barriers to learning make matters worse for young people who are already suffering disadvantage, a dynamic that Catch22 and other interviewees reported regularly seeing in their users' experiences.

catch
22

NOMINET
SOCIAL IMPACT

B. DIGITAL SKILLS FOR WORK

Young people may be comfortable with specific technologies and have high levels of confidence with specific platforms, but that doesn't necessarily translate to the digital skills needed to find employment.

Interviewees, from across the digital and youth organisations engaged, commonly highlighted that young people, by virtue of being viewed as 'digital natives', are often perceived as possessing a broad array of digital skills.

For the most fundamental digital skills this assertion is likely correct. The recent Lloyd's Essential Digital Skills Report suggests that almost all (97%) 18-24-year-olds possess 'Foundation Level' digital skills (93% for those without higher level qualifications), which includes skills such as finding and opening different applications/programmes on a device or opening an Internet browser to access websites[xxix].

However, research suggests that once you move beyond Foundation level skills to the digital skills needed for work, the picture changes. Important recent research highlights the digital skills gaps within the workforce. The 'Hidden Middle', report by FutureDotNow[xxx], reveals limited recognition and understanding of the role 'Digital Skills for Work' play in business productivity and highlights the scale of the 'hidden middle'; the gap between digital exclusion and advanced digital skills.

"Digital is not just the role of the IT team or the techies. Digital is how we live and work, it's pervasive in all jobs now. But the skills aren't all pervasive" - Interviewee

This is reinforced by Learning & Work Institute research showing that fewer than half of British employers believe young people are leaving full-time education with sufficient digital skills and 76% of firms believing this lack of digital skills would hit their profitability[xxxi].

When it comes to the level of digital skills for those entering the world of work, the picture is less clear. The Lloyd's Essential Digital Skills framework explores the level of 'Work Essential Digital Skills' - Work EDS (broadly translatable to our definition of 'Digital Skills for Work') - but only for those already in employment. Whilst this shows that across the UK workforce 52% (c.17.1m people) currently lack Work EDS, it doesn't give us a picture for young people out of work[xxxii].

"Being able to use a mobile phone is not the same as having digital skills that are useful in the workplace." - Interviewee

When asked to assess their own digital skills capability, the majority (62%) of young people (16-24) believe they have the basic 'Digital Skills for Work' that employers are looking for[xxxiii]. If their perceptions are correct, this leaves a large percentage of young people (38%) without even the basic skills increasingly required for work. This equates to over 2.5 million 16–24-year-olds who are potentially locked out of large sections of the jobs market, either because they lack the necessary skills or because they do not recognise the level of skills required.

Employers largely agree with young people's perceptions, although present a marginally more optimistic picture. Four in five (78%) businesses surveyed said that young people leaving education have the basic 'Digital

Skills for Work' that they need , although even this still leaves over 1 in 5 young people (c.1.3m) potentially locked out of employment opportunities that require these skills. More research is needed on the skill level we call 'Digital Skills for Work', especially for disadvantaged young people. But there are clues in existing data which suggests many of the factors that influence barriers to skills acquisition in the wider world also impact on digital skills acquisition.

The Lloyds Essential Digital Skills Report finds that for those in employment, an individual's education level (the biggest correlating factor), whether they have an impairment, gender and location, all have a bearing on the level of 'Work EDS[xxxv]'.

"There is a lack of awareness that there is an issue. There is an assumption that young people can learn digital skills by osmosis" - Interviewee

Positively, the report suggests good progress has been made in closing the gap between ethnic groups, with working adults across white and ethnic minority backgrounds now

on a par for 'Work EDS' (both 64%). However, it is worth noting that this singular metric does not consider the wider evidenced inequalities within digital inclusion[xxxvi].

Taken together, the existing data suggests a complex and incomplete picture. The inequalities faced by marginalised and disadvantaged groups in non-digital settings appear to impact on individuals' digital employment prospects. Further research is required to understand the nuances of these factors. This was a perspective supported by the interviewees who were often able to point to personal experience and case studies, but rarely to solid data.

"We know at an anecdotal level that real world inequalities translate into digital settings, but we need much better evidence" - Interviewee

catch 22

NOMINET SOCIAL IMPACT

C. CORE CAPABILITIES

Our research identifies that a lack of core capabilities, which present barriers to disadvantaged young people finding employment more broadly, often compound digital barriers to work, including the development of 'Digital Skills for Work'.

The employability gap among disadvantaged young people is well known. Indeed, 92% of employers[xxxvii] say that so-called 'soft skills' (such as creativity, persuasion, collaboration, adaptability, and time management) are equally or more important than hard skills.

Our research interviews indicate that digital skills is just one element of digital disadvantage. To develop digital skills, individuals require all the capabilities needed more broadly to succeed in life. Core capabilities include adaptability, creativity, agency and analytical capacity.

An Institute for Employment Studies report in 2015 shows that, as well as familiarity with work-related behaviours, young people's self-belief in their ability to work was low because of the educational, social and labour market barriers they had experienced. This could reduce motivation to engage in support programmes or skills development. Academics link this self-efficacy and belief in one's own capabilities as crucial in raising aspirations[xxxviii].

"To allow young people to take advantage of and learn digital skills, we need to first build the employability skills – of analysis, creativity and intuition." - Interviewee

Substantial research exists into the employability needs of young, disadvantaged

"If a young person hasn't been brought up around digital being used in the context of work and they lack the self-efficacy and employability skills to develop these at speed, the digital – and the disadvantage - divide gets bigger." - Holly Chate, FutureDotNow

people, but little links this to the digital skills agenda. The ability to analyse, make mistakes, question and be creative, are all fundamental elements of building digital skills. Our research indicates that the broader employability skills gap widens the digital skills gap still further.

Certainly, the Centre for Economics and Business Research (CEBR) concluded that having digital skills not only improve an unemployed individual's chances of finding work, but also increased the likelihood of looking for work for someone who is inactive.

And this doesn't just affect broader digital skills, but interest in information technology and the tech sector. Research in particular has shown that negative attitudes such as fear and lack of self-efficacy, are important in driving people away from engagement with ICT[xxxix]. This might explain that while digital skills learning platforms have been developed, this has not always created the change intended. Digital skills therefore need to be embedded in development of core capabilities like employability skills, and vice versa.

This research indicates they should not be regarded as separate types of skills, but as a digital lens on pre-existing barriers to work.

catch
22

NOMINET
SOCIAL IMPACT

D. DIGITAL LIVED EXPERIENCE

There is limited research looking at how young people's lived experience of the digital world impacts on their desire to acquire new digital skills, but substantial research to suggest that young people's experience of the digital world is not always a positive one and that it is often negatively framed.

"We assume because young people are active online that they feel positive towards the digital world." - Interviewee

Young people's relationship with the digital world is complex. For example, we know that more than three quarters of young people (81% of 11-17 year-olds and 76% of 18-24 year-olds) believe that technology has helped them in 'all areas of their lives'[xl], but also that the vast majority of young people (83%) have experienced 'something that they found upsetting' online.

Despite the digital world's ability to connect people, we also know it can have the opposite effect for young people, with 48% of young people recently reporting feeling isolated online and a third of 17–19-year-olds (32%) saying the internet has had a negative impact on their mental health[xli].

Just as in the non-digital world, we also know that marginalised groups are more likely than their non-marginalised peers to have negative experiences online. For example, marginalised groups are much more likely to experience hate speech online. Nearly 3 in 5 (58%) young LGBTQ+ people, and over 2 in 5 (43%) of young people who are Black, Asian or another ethnic minority, have experienced hate speech online, compared to 37% of young people overall[xlii].

Trust in the digital world is also a complex challenge. Half (50%) of young people not in education, employment or training thought that 'no one' or 'almost no one' could be trusted online, compared to 38% of the young people who were employed or students[xliii]. Whilst recognising that not everything online can be trusted is important, little is understood about how a lack of trust of online content influences young people's desire to engage with digital content. Catch22's latest report on Online Harm illustrates the need for continued controls[xliv].

"The narrative around digital is important. We need to do a better job at showing young people why they should be interested in developing their digital skills and how it could benefit them" - Interviewee

Similarly, a number of interviewees felt strongly that, just as those from disadvantaged backgrounds were likely to have less experience of positive professional role models, they were also likely to lack exposure to positive digital role models at home.

Whilst there is little research on the role of digital role models, we know that whilst 67% of young people have someone available to help them out if they need support with ICT-related issues, less than a quarter have asked for that help[xlv]. This suggests that there is both a challenge for the 1 in 3 young people without ICT support, but also that agency plays a critical role.

catch **22**

NOMINET
SOCIAL IMPACT

Interviewees also regularly highlighted the fact that many young people had grown up with their first digital experiences being via mobile devices, in contrast to Generation X (b.1965-1980) and Generation Y (b.1981-1996) whose first digital experiences were more often than not with personal computers (PCs) and work-based applications. This, they felt, led to young people feeling confident using app-based systems but less confident when it came to using productivity software on computers needed in work.

Interviewees highlighted how the digital world is framed by those in positions of responsibility. Many respondents felt that the duty often felt by teachers, parents and carers towards protecting young people online led to a negative framing of the digital world. This framing presented risk ahead of the opportunity digital access presents. Yet it is also these people from whom young people rely on for digital learning.

Most research considering parents' and children's digital engagement focuses on the relationship with safety and controls. More research is needed to understand the positive influence of digitally confident parents and carers. Specific research should consider the impact on children who do not grow up in a household where they regularly witness positive use of desktop devices and associated skills.

There are some good examples of programmes that seek to create positive digital role models in frontline workers like The Social Switch Project, delivered by Catch22 and Redthread, with the support of Google.org and funding from London's Violence Reduction Unit (VRU). These programmes help challenge the framing of the digital world[xlvi].

The Digital Access for All initiative established in 2019 just before the pandemic, looked to unlock solutions 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 increasingly digital by default.

Young people who are not in any form of education, employment or training are far more likely to be teaching themselves (73%). In the eyes of young people, not all schools and workplaces are providing good digital skills training. 12% of school-aged respondents do not think their school provides good training and almost a quarter of those who have left school (23%) do not think their school provided good training in the use of technology[xlvii].

All our interviewees pointed to the need to move digital from an IT subject to be integrated across education. This might include using Excel and data analysis in maths lessons, structuring an email alongside traditional letter writing in English and creative writing, and using a computer, as well as handwritten work in early years.

> **"We arrived in the workplace and have had 20 years of the slow introduction and we've learnt as we've gone along as it's got more sophisticated, while young people are learning at school the same things we did, and we somehow expect them to arrive at the workplace with work digital skills"**
> - Interviewee

Interviewees were not calling for a fundamental change in the curriculum, but a more integrated digital lens through which the curriculum could be taught. This supports the Ofsted requirement through the Education Inspection Framework that "at each stage of education, the provider prepares learners for future success in their next steps".

SWGfl's Project Evolve[xlviii] is a useful resource for teachers to map the knowledge, skills, behaviours and attitudes competencies by age, and act as a guide for educators as to the areas they could be discussing with children as they develop their use of online

catch**22**

NOMINET
SOCIAL IMPACT

technology. The Department of Education's 2021's 'Skills for Jobs: Lifelong Learning for Opportunity and Growth' paper sets out how employer-led skills can support post-16 education, but our research shows that these behaviours need to be taught much earlier.

Simply put, Catch22 teachers advocate for a laptop to be as much as of an essential as paper and pens are for school children. From there, skills naturally develop.

These points above paint a complex picture, with some significant gaps in our understanding of nuance, evident particularly in regard to disadvantaged young people. Mindful of this, our future research will seek to build on the existing evidence by exploring how disadvantaged and marginalised groups lived experience of the digital world might impact on their desire and ability to acquire digital skills.

catch
22

NOMINET
SOCIAL IMPACT

CONCLUSION

As a result of the COVID-19 pandemic, there is a building urgency for young people, particularly those from disadvantaged backgrounds, to develop the 'Digital Skills for Work' that are increasingly required for the jobs market.

Whilst much is understood about the demand for digital skills, the skills gap and digital poverty, it is evident from our interviews and the review of existing data that a much better, more nuanced, understanding of the specific challenges disadvantaged young people face is needed.

"Imagine a world where you spent half the time teaching a child to type as you do to write by hand. Imagine a world where in the maths curriculum we focus on data analysis, how to use an Excel spreadsheet, how to work out percentages in Excel, as you do quadratic equations? Our young people have been taught in an analogue way, we need to teach it in a digital way" - Sam Olsen, Movement to Work

It is also clear from our interviews that the barriers disadvantaged young people face when developing digital skills need to be viewed through a lens of wider disadvantage. These barriers are further compounded by stereotypes which assume young people are 'digital natives'. The gap between mobile phone use and skills needed to make the most of the digital world of work, however, often remains unexplored or misunderstood, and particularly how this affects disadvantaged young people in an employability context.

Fundamental barriers persist, the most prominent of which recently has been digital poverty, as highlighted by the pandemic. Alongside this, greater focus is also needed on supporting young people to develop the non-digital skills (e.g. confidence, agency, autonomy) necessary to acquire new digital skills and access a world of digital opportunities.

A common theme emerging across this research is the need to treat digital skills not as a subject to be learned in isolation but as an operating environment in which we learn. To do this, we must build on the positive developments forced by the pandemic, including the increase in digital teaching, and think creatively about how we mainstream access to the digital economy.

"At the moment, there is no master strategy that addresses digital. Digital sits across the Department for Culture, Media and Sport, Department for Business, Energy & Industrial Strategy, Department of Education and Department for Work and Pensions. There is no one accountable owner, but to have a clear goal would be helpful and then every stakeholder can work to that." - Interviewee

Looking forward, it is clear that a much more coordinated response is needed if we are to begin to unpick the complexities of the barriers faced by disadvantaged communities. A common complaint was a lack of coordinated strategy, which was resulting in disjointed or siloed approaches, often split across government departments and with an array of interventions spanning the third, public and private sector.

Our following three papers will attempt to build on this context, by developing a clearer, more nuanced picture of who is being impacted; what really works and how these barriers can be overcome; and what we should all be doing to ensure we reduce the digital barriers, and enable more opportunities for both young people and digital skills.

catch
22

NOMINET
SOCIAL IMPACT

"**It's going to be a mammoth task, that doesn't just require government intervention but it will require the private and third sector also working together to achieve digital inclusion. We need all of these skills embedded. This is how those from the bottom of the ladder can climb up.**"

Saeed Atacha MBE, YouthLeadsUK &
Social Mobility Commission

Catch22 and Nominet would like to thank:

City & Guilds
FutureDotNow
Institute for employment studies
Livity
Movement to Work
Social Mobility Commission
The Mix
Youth Leads
Youth Employment UK

BEAN
RESEARCH

catch
22

NOMINET
SOCIAL IMPACT

Glossary / working definitions:

Social barriers	Catch 22 define social barriers to work as any barrier that prevents someone entering training or work. Examples include mental health, homelessness, poor educational attainment, criminal convictions, protected characteristics, veteran status, caring responsibilities and beyond.
Digital roles	Catch 22 define digital roles as any job that requires a level of digital skills above the Digital Foundation Skills defined by the Essential Digital Skills Framework.
Digital inclusion	Ensuring everyone has access to the digital skills they need to fully participate in society (No Longer Optional: Employer Demand for Digital Skills, DCMS Burning Glass 2019)
Digital poverty	The inability to interact with the online world fully; when, where, and how an individual needs to (Digital Poverty Alliance)
Digital Skills for Work	There are numerous definitions of basic or essential digital skills for work – described in this paper as 'Digital Skills for Work'. We have chosen to adopt the definition used by the Learning & Work Institute and WorldSkills UK, which builds on Hecker and Lopest 2019: A proficiency with common software such as Microsoft Word, excel, PowerPoint; ability to process digital information and content; ability to communicate digitally; and the ability to learn new digital skills
Advanced Digital Skills	As above, we have chosen to adopt the definition used by the Learning & Work Institute and WorldSkills UK: A good knowledge across a range of digital skills, as well as in-depth specialist knowledge in one or more area, such as computer aided design, coding, specialist digital software
The Essential Digital Skills Framework	The essential digital skills framework is the UK governments framework which seeks to define the digital skills adults need to safely benefit from, participate in and contribute to the digital world. It also informs the Lloyds Consumer Digital Index.

Foundation Digital Skills	An individual is defined by the Lloyds Essential Digital Skills Framework as possessing 'Foundation Digital Skills' if they can perform seven basic digital tasks: 1. Use the different menu settings on a device to make it easier to use 2. Find and open different applications/programmes on a device 3. Update and change a password when prompted to do so 4. Turn on a device and log in to any accounts/profiles 5. Open an Internet browser to access websites 6. Utilise the available controls on a device 7. Connect a device to a Wi-Fi network
Life Essential Digital Skills (Life EDS)	An individual is defined by the Lloyds Essential Digital Skills Framework as possessing 'Life EDS' if they can independently perform at least one task within each of the five Life Skills areas: 1. Problem solving 2. Communicating 3. Transacting 4. Being safe and legal online 5. Handling information and content N.B. Only those that possess Foundation Level skills as defined above are eligible for Life EDS
Work Essential Digital Skills (Work EDS)	An individual is defined by the Lloyds Essential Digital Skills Framework as possessing 'Work EDS' if they can independently perform at least one task within each of the 17 defined Work skill areas. For details of the 17 work skill areas please see the [Lloyds Essential Digital Skills Report](#). N.B. Only those that possess Life EDS and are in employment are eligible for Work EDS

Interviewees included:

- Kat Dixon, Catch 22
- Ken Gaines, City & Guilds
- Tony Wilson, Director, Institute for Employment Studies
- Chris Martin, CEO, The Mix (formerly YouthNet)
- Holly Chate, FutureDotNow
- Sam Olsen, Movement to Work
- Saeed Atcha MBE, YouthLeadsUK & Social Mobility Commission
- Laura-Jane Rawlings, Youth Employment UK

catch
22

NOMINET
SOCIAL IMPACT

References

i www.beanresearch.co.uk

ii New Horizons: Digital exclusion and the importance of getting online, Dr Hannah Holmes & Dr Gemma Burgess, 2021 - https://www.cam.ac.uk/stories/digitaldivide

iii Social Mobility Commission, State of the Nation 2021 Report: https://www.gov.uk/government/publications/state-of-the-nation-2021-social-mobility-and-the-pandemic

iv Exploring the UK's digital divide, ONS, 2019 - https://www.ons.gov.uk/peoplepopulationandcommunity/household-characteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04

v Youth Voice Census, Youth Employment UK, 2021- https://www.youthemployment.org.uk/youth-voice-census/

vi The Nominet Digital Youth Index (DYI), 2021 and link through to the data website, which is www.digitalyouthindex.uk

vii Lloyds Essential Skills Framework & Report: https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/210923-lb-essential-digital-skills-2021-report.pdf

viii UK Government's Essential Digital Skills Framework https://www.gov.uk/government/publications/essential-digital-skills-framework/essential-digital-skills-framework

ix Foundational Digital Skills for Career Progress, Ian Hecker and Pamela Loprest, 2019 - https://www.urban.org/sites/default/files/publication/100843/foundational_digital_skills_for_career_progress_2.pdf

x Disconnected: exploring the digital skills gap, Learning and Work Institute, 2021 - https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/

xi No Longer Optional: Employer Demand for Digital Skills, 2019, Burning Glass, DCMS - https://www.burning-glass.com/research-project/uk-demand-digital-skills/

xii Disconnected: Exploring the digital skills gap' Learning and Work Institute, 2021 - https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/

xiii Tech Nation - https://technation.io/jobs-and-skills-report/#tech-roles

xiv Disconnected: Exploring the digital skills gap' Learning and Work Institute, 2021 - https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/

xv Tech Nation, Jobs and Skills Report 2021- https://technation.io/jobs-and-skills-report/#tech-roles

xvi It's learning, just not as we know it - How to accelerate skills acquisition in the age of intelligent technologies, Accenture, 2018 - https://www.accenture.com/_acnmedia/Thought-Leadership-Assets/PDF/Accenture-Education-and-Technology-Skills-Research.pdf#zoom=50

xvii Unlocking the UK's potential with digital skills, Insights for UK leaders on how to close the skills gap and achieve more in the new world of work, Microsoft, 2020 - https://info.microsoft.com/UK-DIGTRNS-CNTNT-FY21-12Dec-04-UnlockingtheUKspotentialwithdigitalskills-SRGCM4087_01Registration-FormInBody.html

xviii Approved: Digital skills for life, Parliamentary Briefing, UK Parliament 2021 - https://post.parliament.uk/approved-digital-skills-for-life/

xix The Journey to EmploymenT (JET) framework, New Philanthropy Capital, 2014 https://www.thinknpc.org/resource-hub/the-journey-to-employment-jet-framework/

xx Lloyds Essential Digital Skills Report, 2021 - https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/210923-lb-essential-digital-skills-2021-report.pdf

xxi Ofcom's Technology Tracker, 2021 - https://www.ofcom.org.uk/__data/assets/pdf_file/0015/219102/technology-tracker-2021-data-tables.pdf

xxii Ofcom's Technology Tracker, 2021 - https://www.ofcom.org.uk/__data/assets/pdf_file/0015/219102/technology-tracker-2021-data-tables.pdf

catch 22

NOMINET SOCIAL IMPACT

xxiii Disconnected: Exploring the digital skills gap' Learning and Work Institute, 2021 - - https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/

xxiv The Poverty Premium, Fair by Design https://fairbydesign.com/whats-the-poverty-premium/

xxv https://connectpa.co.uk/wp-content/uploads/2021/05/Tackling-the-Digital-Divide-May-2021.pdf

xxvi The challenges for disadvantaged young people seeking work, The Joseph Rowntree Foundation, 2012 - https://www.jrf.org.uk/report/challenges-disadvantaged-young-people-seeking-work

xxvii https://digitalyouthindex.uk

xxviii The Nominet Digital Youth Index (DYI), 2021 www.digitalyouthindex.uk

xxix Lloyds Essential Digital Skills Report , 2021- https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/210923-lb-essential-digital-skills-2021-report.pdf

xxx Hidden Middle' report by FutureDotNow https://futuredotnow.uk/hidden-middle/

xxxi Disconnected: Exploring the digital skills gap' Learning and Work Institute, 2021 - https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/

xxxii Lloyds Essential Digital Skills Report , 2021 - https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/210923-lb-essential-digital-skills-2021-report.pdf

xxxiii Disconnected: Exploring the digital skills gap' Learning and Work Institute, 2021 -- https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/

xxxiv Disconnected: Exploring the digital skills gap' Learning and Work Institute, 2021 -- https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/

xxxv Lloyd Essential Digital Skills Report , 2021 - https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/210923-lb-essential-digital-skills-2021-report.pdf

xxxvi Lloyd Essential Digital Skills Report , 2021 - https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/210923-lb-essential-digital-skills-2021-report.pdf

xxxvii LinkedIn's Global Talent Trends, 2019

xxxviii 'Bandura, A., Freeman, W.H. and Lightsey, R., 1999. Self-efficacy: The exercise of control'

xxxix Slipping through the net, The Princes' Trust 2016 - https://www.princes-trust.org.uk/about-the-trust/research-policies-reports/slipping-through-the-net

xl Today's youth, tomorrow's internet - A Nominet Digital Futures Report, Nominet, 2019 https://nominet.uk/wp-content/uploads/2019/06/DFI-Youth-Report.pdf

xli The Nominet Digital Youth Index (DYI), 2021 www.digitalyouthindex.uk

xlii The Nominet Digital Youth Index (DYI), 2021 www.digitalyouthindex.uk

xliii Slipping through the net, The Princes' Trust, 2016 - https://www.princes-trust.org.uk/about-the-trust/research-policies-reports/slipping-through-the-net

xliv Catch 22 Online harms Report 2021, https://static1.squarespace.com/static/5d7a0e7cb86e30669b46b052/t/618b-7cd8b5872f4721c9d59a/1636531420725/Online+Harms+Research+November+2021+-+Full+Report.pdf

xlv Slipping through the net, The Princes' Trust, 2016 - https://www.princes-trust.org.uk/about-the-trust/research-policies-reports/slipping-through-the-net

xlvi https://www.thesocialswitchproject.org.uk/

xlvii The Nominet Digital Youth Index (DYI), 2021 www.digitalyouthindex.uk

xlviii https://swgfl.org.uk/products/project-evolve/