



Bulletin 8

Skills shortages in the UK economy

January 2021

Skills shortages in the UK economy



There is no doubt that 2020 was a momentous year for both the education system and the labour market, but many of the trends we have seen are not new. They are underlying **changes and challenges that have been previously reported in these bulletins and have been exacerbated by the impact of Covid-19.**

In this edition, we look at some of the trends already emerging before lockdown. The Department for Education's Employer Skills Survey showed that in 2019, **nearly a quarter of all vacancies were skills shortage vacancies**, a further increase of 2 percentage points since 2017. Meanwhile, evidence from Youth Employment UK's Youth Voice Census showed a positive growth of work experience before the pandemic, with two third of respondents getting this opportunity during secondary school, but also a worrying trend of increasing division with **confidence in employability impacted by gender, ethnicity and additional needs.**

Looking at the impact of the pandemic itself, recent research by the Learning and Work Institute reinforces the point that **the labour market fallout from the pandemic has exacerbated pre-existing inequalities** – for areas that are 'left behind', for lower level occupations, for older workers and for young people, who face the double whammy of a disrupted education and a tough labour market. Meanwhile, the Open University's Business Barometer shows that, despite the number of available job candidates significantly growing, **three in five employers are reporting that they are still unable to attract the skills they require.**

Research by the Learning and Skills Network gives us an insight into future developments, with **'high-touch' roles such as nursing and care topping the list of roles currently most in demand.** The World Economic Forum's recent report on the future of jobs sets this in a global context, highlighting the increasing pace of existing changes as a result of Covid-19 – **over 80% of employers reported that automation has accelerated their work processes.**

We focus on two sectors that have been at the centre of much of the discussion about future economic recovery, looking first at what constitutes 'green jobs' and the opportunities these may provide – the Institute for Public Policy Research suggests that as many as **200,000 jobs could be created in energy efficiency by 2030.** In the digital sector, research by Tech Nation shows that on top of rapid recent increases, **from June to August 2020, digital tech has seen a 36% increase in vacancies.**

We will continue to examine and report on these emerging trends as the full impact of this year's disruption is felt across the UK and international economy.

OLLY NEWTON, Executive Director, Edge Foundation

onewton@edge.co.uk



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Reference as: Newton, O. & Emms, K. (Eds) (2021). *Skills Shortage Bulletin 8*,
The Edge Foundation. January 2021



Employment and skills challenges and how to tackle them

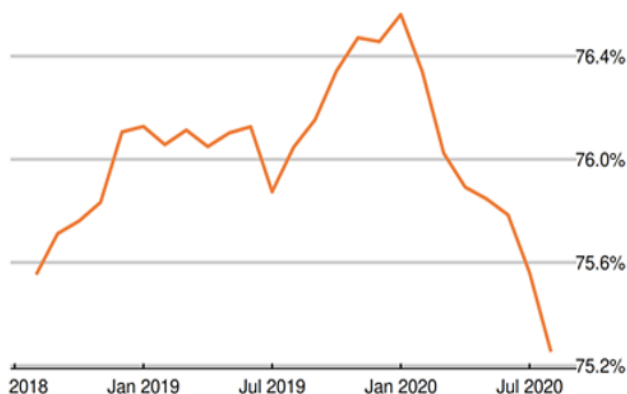
Learning and Work Institute

Reflections by
Dr Fiona Aldridge,
Director for Policy
& Research,
Learning & Work
Institute

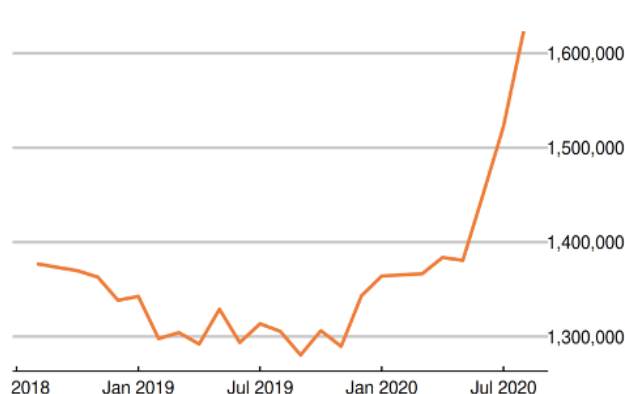
The scale of the economic impact of the Coronavirus pandemic is yet to be fully understood, but its effect on employment and the labour market has already been profound. **Vacancies are falling, redundancies are rising, hours worked are declining and unemployment is predicted to increase further and remain above pre-crisis levels until 2023/24.**

While the extension of the furlough scheme through to April should help mitigate some of this impact, it is vital that we use this time wisely to ensure that individuals and businesses are supported to adapt and thrive as the economy is rebuilt.

Employment rate – the headline ONS estimate



Unemployment (ILO) – UK official measure



Understanding the employment and skills challenge

It is clear from the research undertaken by Learning and Work Institute (L&W) and others in recent months, that the impacts of the crisis are not evenly spread across the economy. In many cases **the labour market fallout from the pandemic has exacerbated pre-existing inequalities**. For example, we know that:

- Unemployment has tended to rise fastest in **'left behind' areas** where it was highest before the crisis, posing a real risk to the government's Levelling Up agenda.
- Workers in **lower-level occupations and with fewer qualifications**, often working in sectors hardest hit by the economic crisis, have also been far more vulnerable to unemployment.

- The economic crisis has particularly affected workers at both ends of the age spectrum. L&W's research with the Centre for Ageing Better showed that during the first national lockdown, the number of **older workers** seeking unemployment related benefits doubled, while 1 in 4 were furloughed. This is particularly concerning given we know that older workers who lose their jobs are far more likely to slip into long-term worklessness than their younger counterparts.
- **Young people** face the double whammy of a disrupted education and a tough labour market. Despite more young people staying on in education, there has been a surge in unemployment, with those from lower-income families and without a degree-level qualification hardest hit. This is extremely worrying given the extensive evidence that being unemployed when you are young can have lasting 'scarring' impacts in later life, including a higher risk of unemployment, lower pay, poorer mental health, and diminished life chances.
- There are significant differences in job loss rates between different ethnic groups, with some **Black, Asian and minority ethnic communities** particularly vulnerable to increased debt and financial hardship as a result of the crisis.

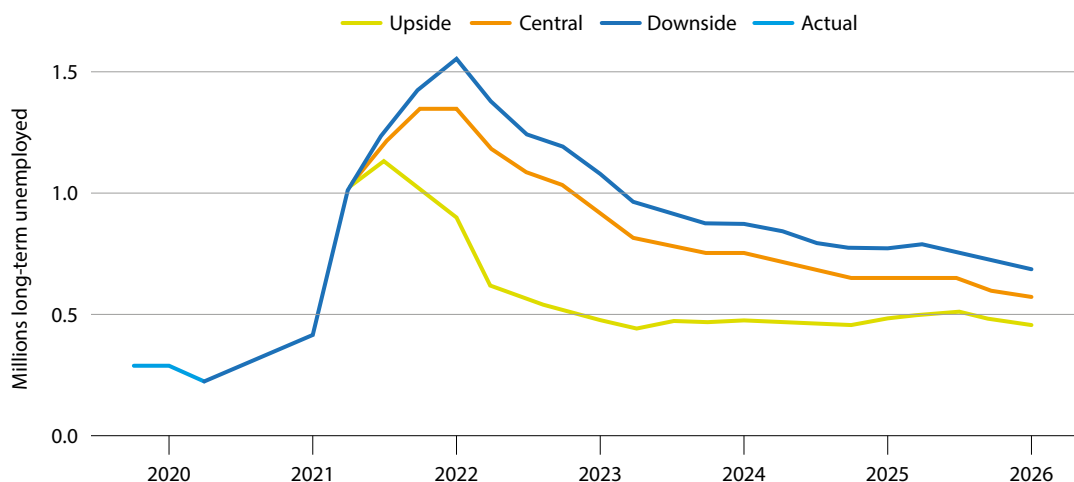
Tackling the employment and skills challenge

In thinking through the policy response to these challenges L&W has sought to develop evidence-based solutions focused on:

1. Ensuring people have effective employment support to help them get back to work¹.

There are now nearly one quarter of a million fewer people in employment than this time last year. **Over 1 million people could be long-term unemployed in 2021**, potentially peaking at 1.6 million in 2022 – a 600% increase on pre-coronavirus levels, and the highest on records dating back to 1992. Moreover, it could be six years or more before we return to the low levels of long-term unemployment prior to coronavirus.

Long-term unemployed estimates



1. <https://learningandwork.org.uk/resources/research-and-reports/time-to-act-tackling-the-looming-rise-in-long-term-unemployment/>

Skills shortages in the UK economy

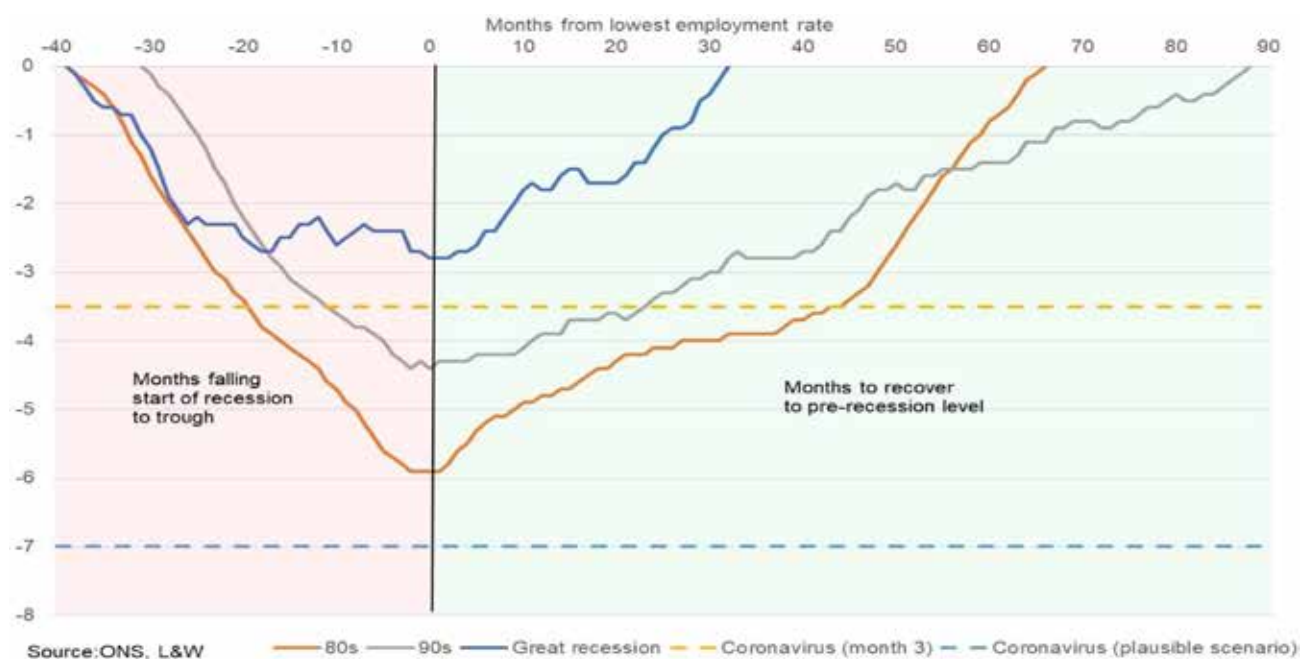
To help address this, we have argued that there should be a universal offer to all long-term unemployed people across the UK and estimate that up to £4 billion will be needed next year to provide the services to get people back into work, 25% more than DWP spent on employment programmes in its peak of 2010-11.

2. Supporting employment growth by investing to create jobs².

Although employment will grow as the economy recovers, it takes time for new business opportunities to emerge, for new and existing businesses to make the most of these, and for this to lead to employment growth. **In previous recessions, it has taken 3-7 years for the employment rate to recover** back to its pre-recession levels.

We have argued that action needs to be taken to speed up this employment growth. This should involve linking accelerated public investment to job creation, stimulating job growth through economic demand, and supporting existing jobs to remain viable.

Months for employment to fall to post-recession low and recover



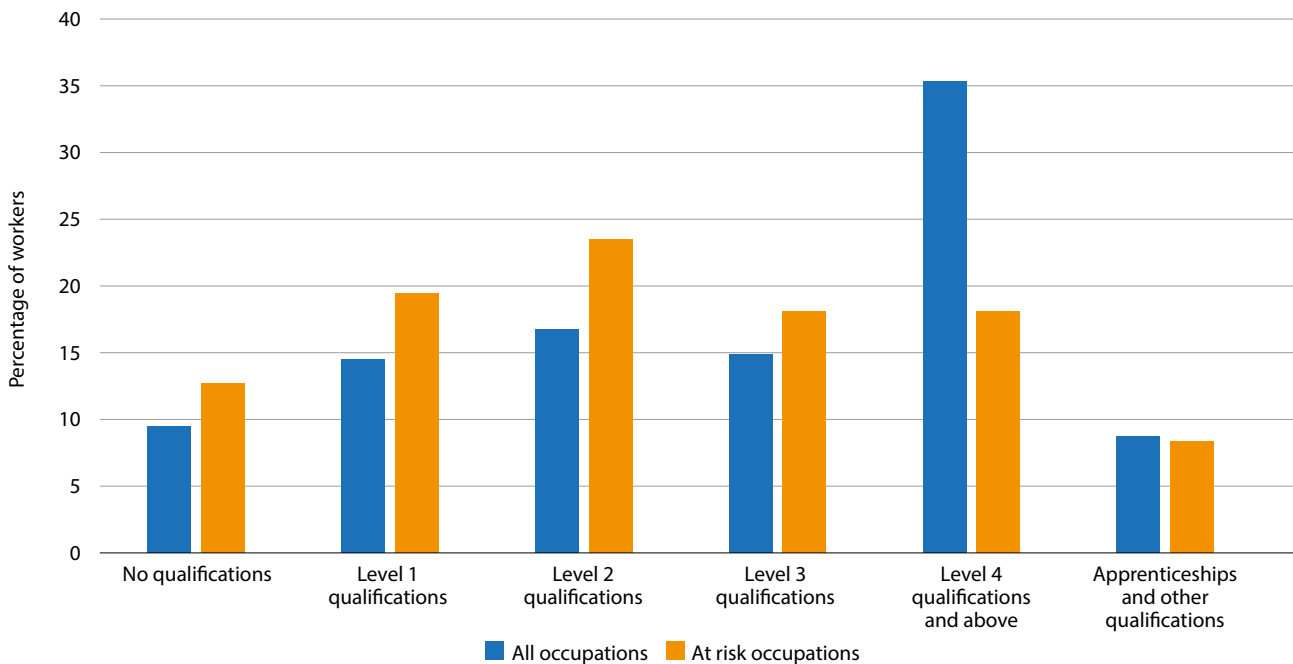
3. Equipping young people and adults with the skills needed to find new work or change careers³.

The coronavirus pandemic has been a catalyst for accelerating certain trends, from increases in remote working, to online retail. McKinsey estimate that **44 per cent of jobs (or almost 1.5 million) in elementary occupations are 'at risk'**, defined by how likely they are to have been affected by the lockdown, and reduced demand for certain sectors of the economy.

2. <https://learningandwork.org.uk/resources/research-and-reports/missing-millions/>

3. <https://learningandwork.org.uk/resources/research-and-reports/when-furlough-has-to-stop-next-steps-to-avert-long-term-unemployment/>

Proportion of workers at risk by qualification level



Source: 2011 Census data, Reform and LWI analysis. Occupations counted as 'at risk' were 'Administrative and secretarial occupations', 'Caring, leisure and other service occupations', 'Sales and customer service occupations', and 'Elementary occupations'. N.B. It was not possible to discount 'Caring' occupations, but these are not 'at-risk'

The profile of the workforce in at-risk occupations and sectors reveals certain groups to be at greater risk. Nearly 50 per cent of at-risk jobs are in occupations earning less than £10 an hour, and in the 20 lowest-income areas, 23-29 per cent of jobs are at-risk, compared to just 18-25 per cent in the 20 highest-income areas. **Workers in at-risk occupations are also more likely to have no qualifications, and are far less likely to be qualified to at least degree level.**

And we should not wait for at-risk workers to become unemployed before support is offered. Learning and Work Institute have argued for a universal support offer to help at-risk workers into learning, career planning and job search, alongside more in-depth support for those needing to retrain and change career. This could include enhanced careers advice, learning accounts for accredited training, training tailored to specific career pathways and jobs, and a Career Changer grant or Universal Credit Premium to mitigate wage drops as workers move sectors.

This does not come without considerable cost – and some may argue that spending money on people who may, or may not, lose their jobs is 'deadweight' or wasted expenditure. But it is hard to argue that investing in skills, particularly among low-paid workers, is anything other than long overdue. **Government spending on adult learning in England declined 47 per cent in the decade from 2009-10 to 2018-19, and employers spend comparably less than their international counterparts.**

After a decade of decline in adult learning and training, investment in skills – alongside employment support and job creation – is surely essential for future prosperity and making the most of the opportunities of future economic, demographic, and technological change.



Reflections by
Lesley Giles,
Director, Work
Advance



Department
for Education

October 2020

Employer Skills Survey 2019

Department for Education

Over two decades, the UK Employer Skills Survey (ESS) has become an essential tool in the Government's labour market information toolkit, biennially providing the **UK's most robust, comprehensive and authoritative position on the state of employment and skills** across the UK economy from the perspective of employers. First developed by an expert group attached to the Government's National Skills Taskforce¹ for England in 1999, this Survey has grown in importance, now receiving international recognition by the OECD for its world-leading approach to examining employer investment in, and use of, skills² - an approach others are seeking to emulate.

The latest survey captures a period that predates the current Covid-19 crisis. That said, with fieldwork running up to December 2019, it still **provides a vital pre-Covid-19 baseline**, and in turn valuable insights around structural skills developments in the labour market, at the tail end of a period of considerable economic uncertainty, transformation and disruption. Crucially, this follows, for example, not only the fall out of the financial crisis in 2008 and economic turbulence with Brexit, but ongoing developments associated with future drivers of change around technological advances and other megatrends. These have been driving dramatic developments to local economies, their industrial make-up and the nature and composition of employment and skills requirements across the UK for decades. The **increasing pace of innovation in the workplace together with**

technological advances are placing an onus on people and their skills, and hence to upskill and retrain, to optimise the use of machines, and to drive ongoing business development and growth.

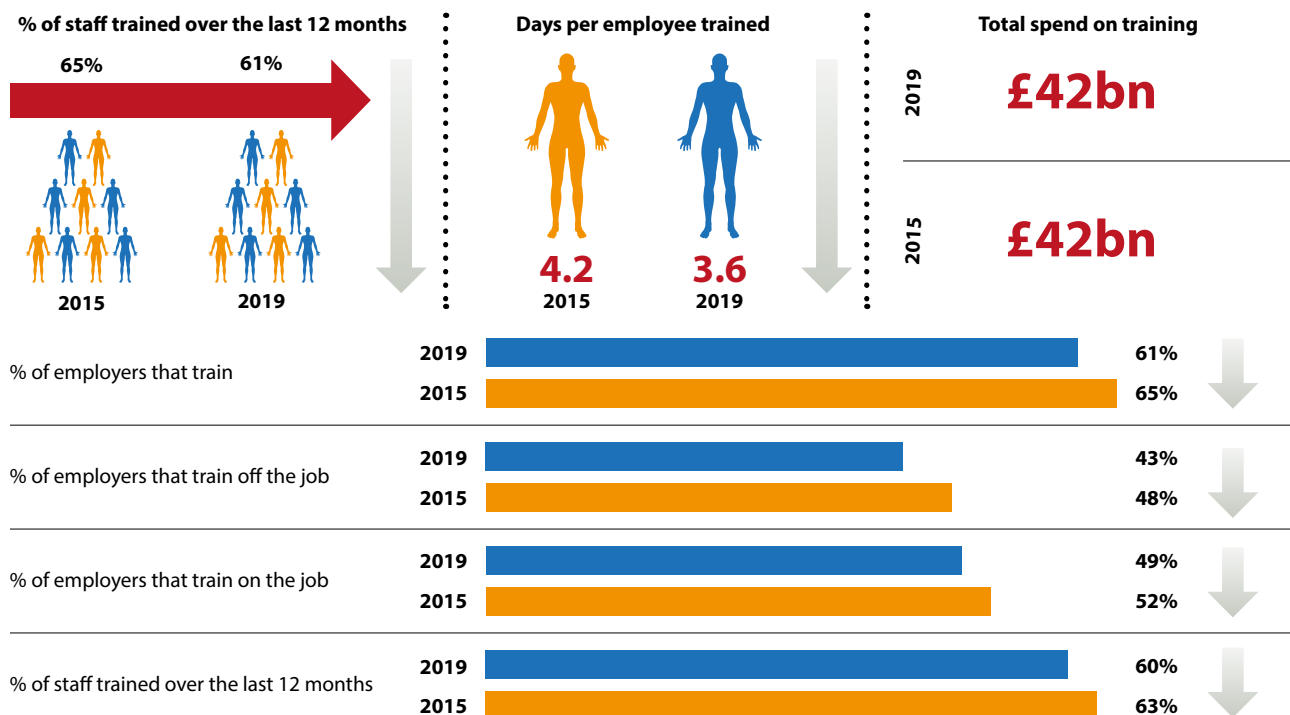
As the Government seeks to kick start a post-Covid-19 economic recovery, the ESS must provide a vital steer on future skills investment priorities.

Increasing economic uncertainty at the time of the Survey is signified in several ways, and a closer examination is essential to ensure appropriate action can be taken, especially given the declining economic conditions since the Covid-19 pandemic. This has undoubtedly made a difficult situation worse. The first sign of uncertainty is provided by a **fall in recruitment that bucks the trend seen since 2011**, where recruitment levels had been steadily increasing over time, following recovery from the financial crisis. As such, fewer establishments (17%) in 2019 reported any vacancies compared to 2017 (20%) which would suggest diminishing business confidence to invest for growth.

1. National Skills Taskforce (2000) Skills for All: Proposals for a National Skills Agenda. <https://www.eurofound.europa.eu/publications/article/2000/national-skills-task-force-issues-final-report>

2. OECD (2017) Getting Skills Right: UK. [Here](#)

Figure 1: Training picture for 2019

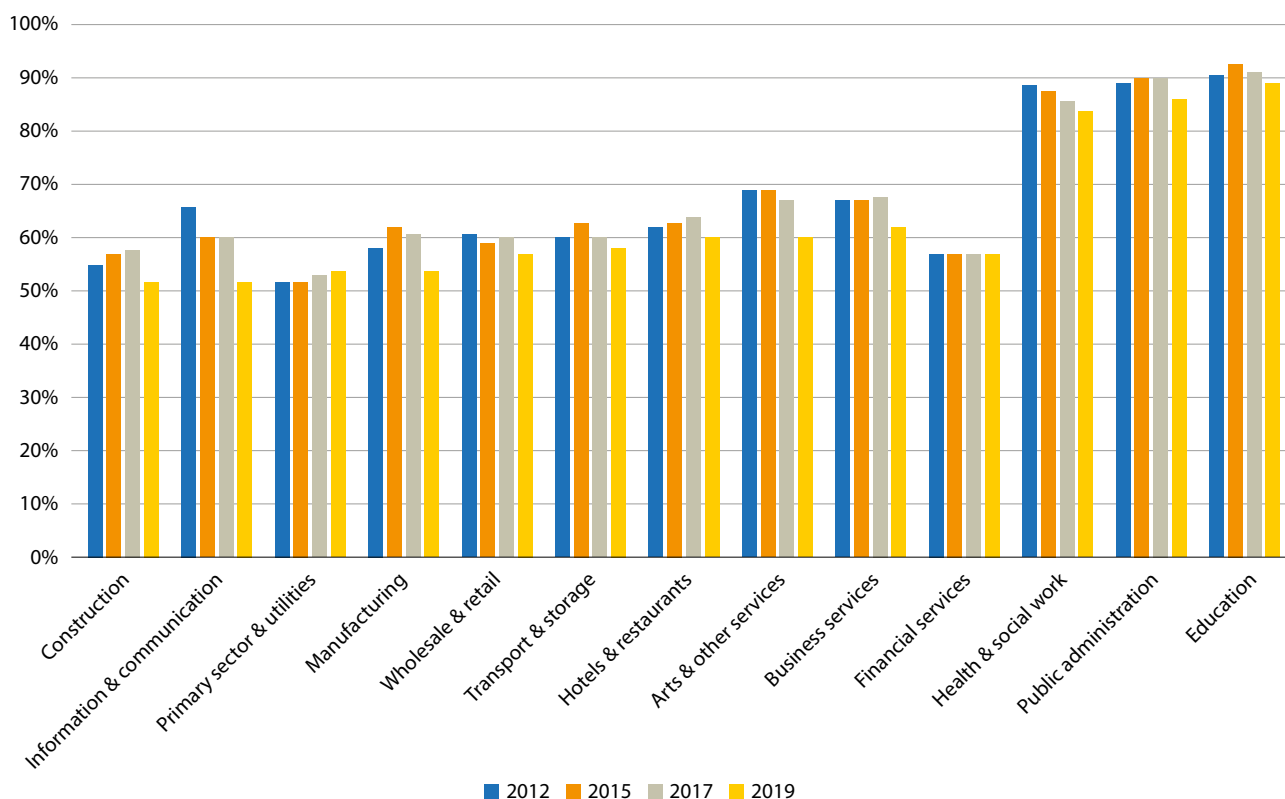


Second, despite a decline in economic activity, we see a growth in skills deficiencies. For instance, the density of skills shortages has risen, with **nearly a quarter of all vacancies being skills shortage vacancies in 2019** (an increase of 2 percentage points (ppt) since 2017). Of most concern, **nearly three fifths of these shortages were reported, and are persisting, in middle and high skilled roles**. At the same time, whilst fewer employers are bringing in new talent, we also see a rise in skills gaps amongst the internal workforce, with skills gap density (the percentage of the workforce not proficient at their job) increasing to 4.5% in 2019 from 4.3% in 2017. Although a small change, this is significant, as it is the first increase since 2011.

Third, given the rise in skills issues, it is perhaps unsurprising to see that **rates of skills investment have also been in decline** on several measures of volume and intensity (see Figure 1). In 2019: fewer employers (61%) had arranged or funded training for staff in the last 12 months - the lowest proportion since 2011; **the total number of training days have reduced by gm since 2015** (a fall of 8.3%), and a lower share of employers (64%) in 2019 was specifically undertaking training to tackle skills gaps (a fall of 3 ppt since 2017). Furthermore, levels of investment have plateaued at £42bn to 2015 levels.

Training also reached a smaller share of people overall (i.e. 60% in 2019 compared to 62% in 2017 - this was the lowest proportion reported since 2011 (54%)) which means a higher proportion missed out. Most worryingly, despite declining investment, the proportion of employers in 'training equilibrium' who report they are content with their current levels of training, has increased to 61% from 59% in 2017. This means **more of the larger share of non-trainers (72%) were happy that they were not training**. Whilst training has a strong sector story, and this will be key to any future skills solutions, these declines are wide ranging (Figure 2).

Figure 2: Changes in share of employers providing training by sector



Source: Employer Skills Survey 2019

The OECD³ has said that one of the biggest risks to national education systems today is that **traditional ways of educating are losing currency and relevance and are not adapting quickly enough** to the needs of a dynamic economy. As such, employers and employees are not sufficiently engaging. For instance: most employers do not provide off-the-job training (58%) but of those that do (31%), nearly three fifths (57%) use commercial providers, rather than Further Education providers (17%) or Higher Education Institutions (8 per cent). Further, on average only 10 per cent of employers are offering apprenticeships. A key question therefore is how to incentivise "shared responsibility" and co-investment in skills in future from the state, employers and individuals, that drives the kind of lifelong learning revolution necessary to support future economic success and social prosperity for all.

The Covid-19 pandemic provides an **opportunity for the Government to take a lead and kick start action**. This has been demonstrated through a range of skills-funding commitments. These include: a new lifetime skills guarantee with additional funding for level 3 qualifications, which comes on the back of a continuing push for reforms to technical education, and existing skills investments such as the £3bn National Skills Fund and the National Retraining Scheme. The Covid-19 recovery plan - Plan for Jobs⁴ - also provides a raft of skills and employment programmes. The next few months will bring further developments as the Government

3. OECD (2019) OECD Skills strategy 2019 <https://www.oecd.org/skills/oecd-skills-strategy-2019-9789264313835-en.htm>

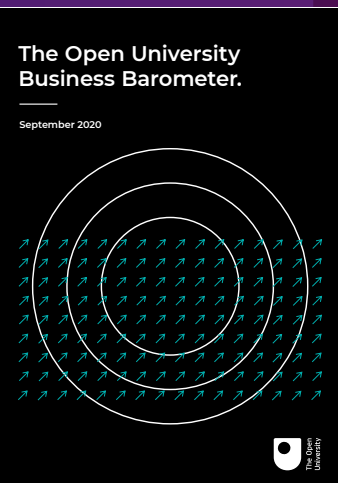
4. HMT (2020) Plan for Jobs <https://www.gov.uk/government/topical-events/a-plan-for-jobs-2020>

seeks to update domestic policies more widely around for example the industrial strategy, and devolution, aligning them with employment and skills investments. This should include setting out a **skills plan with room for employers to work together with schools, colleges, universities, and private training providers** to tailor programmes and deliver a stronger local-skills offer. The ESS will provide an essential role, alongside wider labour market intelligence, building a consensus around local skills and employment needs, and how programmes need to be customised as a basis to incentivise greater engagement. Standardised programmes, curriculum, and forms of assessment of the past will no longer be fit for the future.

LESLEY GILES, Director at Work Advance, said:

“The latest UK Employer Skills Survey findings enable an authoritative assessment of the state of employment and skills across the UK economy from the perspective of employers – vitally, allowing comparisons by varying sectors, and in different parts of the UK. Whilst the survey period predates the current Covid-19 crisis, it still provides a critical pre-Covid-19 baseline, pointing to some long-running skills challenges employers have been facing for over a decade. So, although a dynamic economy will demand ongoing investment in skills, we find that training, on the contrary, is in decline, continuing a long-term trend, and skills deficiencies are consequently increasing. As the Government seeks to kick start a post-Covid-19 economic recovery, the ESS must provide a vital steer on future skills investment priorities.”





September 2020

Business Barometer 2020

The Open University

Each year, *The Open University Business Barometer* charts the skills landscape of the UK. Born into an unprecedented socioeconomic crisis, this report paints an intriguing picture of how the UK is dealing with the fallout from Covid-19.

Disruption caused by the pandemic has seen the number of available job candidates significantly grow, yet the number of senior leaders who reported skills shortages within their organisations has remained stable over the past three years, with **three in five reporting that they are still unable to attract the skills they require.**

Subsequently there has been a sharp increase in the amount spent by businesses to find, secure and develop talent over the last twelve months. **Employers increased spending on skills by £1.7 billion**, with significant outlays going on recruitment fees, increased salaries, temporary staff, and training to upskill those hired at a lower level, to the tune of a total £6.1 billion.

Skills that were in short supply pre-pandemic have become all the more highly sought after. While digital skills have become even more desirable as organisations shift their working models towards the online domain, there has been no corresponding increase in the number of employees possessing these skills. Organisations have little choice but to take the financial hit if they want to ensure their workforce is indeed digitally capable.



As employers look to the future and anticipate the skills they will need in the next 12 months, there is a strong focus on leadership and managerial capabilities ahead of industry-specific skills. **Two in five (39%) said they will require leadership skills, such as dependability, with a similar number (38%) requiring managerial skills**, such as decision-making, reflecting the value that close to two thirds (61%) of organisations now place on agility and adaptability as a result of the pandemic.

However, organisations are beginning to see the value of investing in existing talent to plug skills deficits: **nearly half (48%) of employers acknowledge that apprenticeships and work-based learning initiatives will be vital to their organisation's recovery over the next year**. Nearly six in ten (58%) of employers expect to be hiring more apprentices in the next 12 months, with a greater number of large organisations (63%) than small ones (59%) planning to do so in England.

Likewise, in a drive to boost diversity **more than two thirds (67%) are committed to hiring future employees from more diverse backgrounds**, while nearly 37 per cent are actively looking to hire candidates from the area local to their business. Such strategies are helping to break up cycles of low-paid work and are encouraging employers to extend opportunities to candidates whose qualifications fail to accurately represent their capabilities and potential.

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Key statistics from the report:

- 56% of UK organisations continue to experience skills shortages
- 55% of organisations are unable to think beyond the immediate challenges of the pandemic
- 58% of employers expect to be hiring more apprentices in the next 12 months
- 48% believe apprenticeships and work-based learning will be critical to their recovery
- 39% believe leadership skills are the most valuable to their organisation, 38% feel the same way towards management skills



VIREN PATEL, Corporate Director at The Open University, said:

“Organisations across the UK have faced inconceivable pressures over the past seven months. It is not surprising that after such a challenging year, business leaders are looking for quick fixes to talent shortages. However, while hiring in short-term solutions to skills vacancies may solve the immediate issue, in the long term these can easily lead to heavy expenses, such as those that we have seen reported by employers.

With many organisations saying their survival depends on cutting costs, it is critical that organisations adopt a “grow your own” approach to the talent they need, and re-skill existing employees and new hires appropriately for relevant roles. Doing so will enable them to adapt in a primarily proactive manner to further challenges and uncertainties whilst cutting back on costly and short-termist recruitment policies.”



June 2020

Youth Voice Census 2020

Youth Employment UK

In 2020, Youth Employment UK's Youth Voice Census was able to capture a **timely snapshot of the state of play just before the full impact of the Covid-19** lockdown hit. It also provides a reminder of the importance of careers education for young people soon to transition into a post-Covid-19 economy.

Young people suffer most in terms of economic uncertainty and there are significant concerns about the **scarring long-term impacts of the pandemic** and associated recession. The Youth Voice Census shares unique insights from young people about what support they are getting, what really works for them and what they want more of. For the first time young people told us that they believed their **social status would be a barrier** for them to progress into work. Disability and discrimination also featured more prominently than in other years.

For those who can navigate a difficult minefield and find themselves in employment, there is good news, in particular, for those in apprenticeships – the **confidence and happiness levels for those in work are the highest reported** in this census. Despite seeing a slight decline in some of the percentages compared to last year, across all groups in the survey those in work are likely to be having the most positive time.



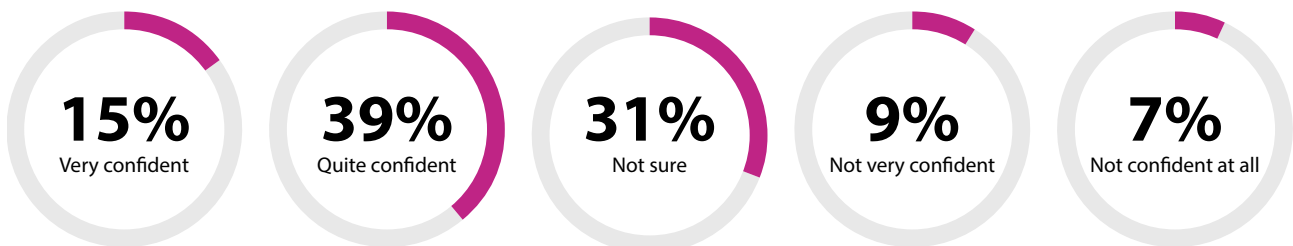
Work experience is on the up for those in school

Work experience was offered to 66% of respondents during their time in secondary school, up by 14 ppt on last year and up 15 ppt from 2018 scores. Student satisfaction in the work experience offered remains high, although young people would like to see more choice available to them. There is also positive movement in scores for apprenticeship visits, up by 4 ppt on last year and employer visits in schools, up by 3 ppt for those in secondary schools. Work experience is down by 6 ppt for those in college or sixth form to 50% and down 29 ppt for those in university. Young people told us that there should be more done to make work experience and opportunities to learn about the world of work more available in these settings.

Careers information inequality

Careers support and the information received can be skewed by age, race, gender, eligibility for free school meals or additional needs. The pathways and opportunities discussed differ for young people and impact those with protected characteristics more negatively than those without. This difference in information was evident in both school, college and sixth forms.

How confident are you that you will be able to move into meaningful employment?



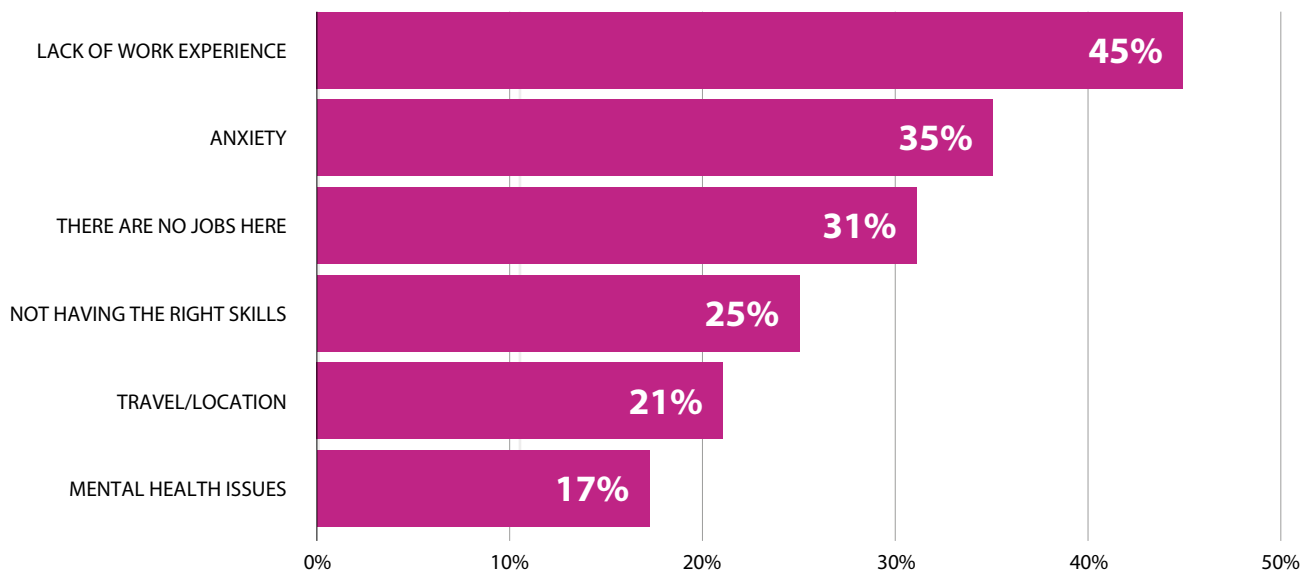
Source: Youth Voice Census 2020

Confidence, wellbeing and barriers: Today's challenges are all holding young people back

We see that **confidence is impacted by gender, race and ethnicity and additional needs**. The young men surveyed were more likely to rate themselves as being highly confident on issues relating to finding work in the future, with young women being less sure. Those with additional needs had, on average, 10% less confidence in their employability skills. They were also 11% less confident in being able to secure meaningful work in the future. Black respondents were at least twice as likely as their white peers to say they 'were not very confident' in all but one of the employability skills discussed. 34% of Black respondents were 'not very confident at all' that there would be quality work opportunities in their local area compared to 22% of Asian respondents and 9% of white respondents.

Whilst happiness scores are highest for those in work, we see a rise in **mental health and wellbeing issues for young people is following them into the workplace**. 33% of respondents reported that they struggle with their wellbeing at work, up by 12 ppt on last

What is your biggest barrier to getting a job? Top 5



Source: Youth Voice Census 2020

year's score. In addition to this, in our free text commentary throughout the survey we hear often from young people who are anxious about their next steps and unsure where to turn. The percentage of respondents highlighting that they were suffering from anxiety and depression was also up on last year.

Young people are not being fully prepared

Not all options are created equally for our young people. **Academic qualifications are still discussed with students more frequently than vocational qualifications** – and 77% of them have never been told how to use a Jobcentre to its best advantage when seeking work.

The key improvement in careers education that young people reference time and again is the need for **personalised one-to-one support**.



LAURA-JANE RAWLINGS, Founder & CEO of Youth Employment UK said

"This year has been a tough one for everyone, but I believe our young people have borne the biggest brunt of it. Those young people who were optimistically entering the labour market have had their ambitions challenged and now feel real anxiety about their futures. Rightly so as youth unemployment rises to 14.6% compared with 4.8% at all ages. The additional pressures placed on young people in lockdown have also added to existing mental health challenges. Most of all, those young people who experience disadvantage have seen their challenges amplify whether that be poverty, education, or opportunity - Covid has widened the gaps in society for young people."



Learning for Life: Funding a world-class adult education system

CBI

This report from the CBI, based on McKinsey & Company analysis, shows that **nine out of ten employees will need to reskill by 2030 at an additional cost of £13 billion a year**. It argues that with Covid-19 now accelerating changes to the world of work, the UK must use this momentum to drive a national reskilling effort.

Four key issues government and business must work together to tackle

Employers remain the biggest investors in adult training, but investment in workplace training has flatlined at best in the last decade and needs to increase. Good employers recognise the importance of investing in people and embracing a learning culture: it improves staff retention, satisfaction, and overall productivity. But despite its growing importance, investment in workplace training has stagnated during the last decade, with **annual training spend per employee falling by 5.6%** from £1,620 in 2011 to £1,530 in 2017.

SMEs face barriers which prevent many of them from increasing investment in training. These include a lack of scale, high fixed costs of training and a lack of capacity. **43% of micro and small businesses did not provide any training in 2018**, compared to 4% of organisations with 250 or more employees.

The **training landscape is complex** and does not support the large scale reskilling the UK requires. Provision is overwhelmingly targeted at young people and focused on longer courses and formal qualifications.

Many individuals whose occupations are at risk of automation do not think that their roles will be impacted by technology, and **people looking to retrain struggle to find quality information**. 68% of workers in the 15 most at-risk automation occupation groups believe it is unlikely that their current job role will be automated in the next 10 years. But individuals looking to retrain face steep challenges in finding quality information on the right jobs and training to take up.

What does the report recommend?

Based on the findings outlined above, the CBI has set out a package of measures that they believe the government needs to adopt as a first step towards increasing investment in training by businesses, government, and individuals. They include:

- Help **small businesses overcome barriers to training investment**, such as lack of capacity and resource, by introducing SME tax credits.
- Boost overall business investment in skills by turning the Apprenticeship Levy into a **Skills and Training Levy** which funds high-quality accredited training.
- Encourage people to take up new training opportunities by introducing **Career Development Accounts** which help remove financial barriers.
- Ensure the new **flexible loans entitlement** is extended to adults of all ages and accommodates shorter bitesize courses, not just longer formal qualifications.
- Encourage more people to have a stake in lifelong learning by turning 'Job Centres' into **Jobs and Skills Hubs** which offer face-to-face support.



WORLD
ECONOMIC
FORUMThe Future
of Jobs
Report
2020
OCTOBER 2020WORLD
ECONOMIC
FORUMCOMMITTED TO
IMPROVING THE STATE
OF THE WORLD

October 2020

The Future of Jobs Report

World Economic Forum

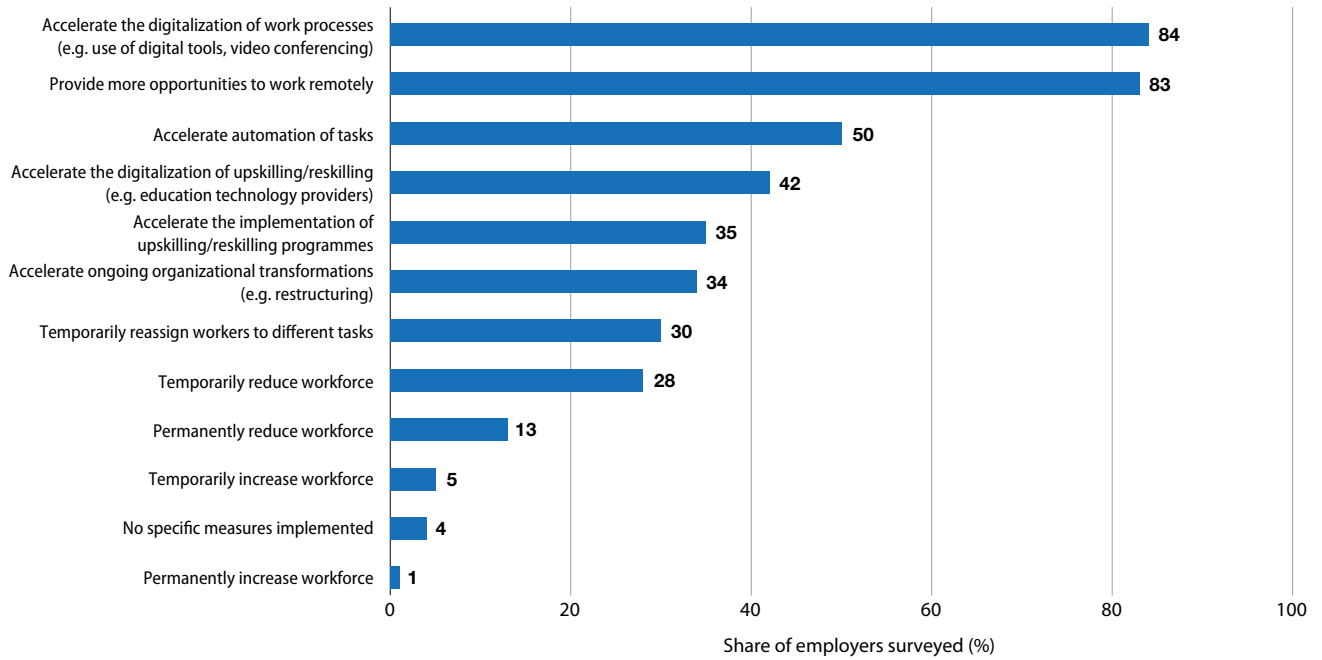
The World Economic Forum has released their *Future of Jobs Report* mapping the jobs and skills of the future worldwide for the next five years, including the impact of the pandemic on the job market. The key findings of the Report indicate the following:

World Economic Forum provides leading insight into the changing labour market. Find out more about their work in Bulletin 4 and Bulletin 7.

- The **pace of technology adoption** is expected to remain unabated and may accelerate in some areas,
- Automation, in tandem with the Covid-19 recession, is creating a '**double-disruption**' scenario for workers,
- Although the number of jobs destroyed will be surpassed by the number of 'jobs of tomorrow' created, in contrast to previous years, **job creation is slowing while job destruction accelerates**,
- **Skills gaps continue to be high** as in-demand skills across jobs change in the next five years,
- The **future of work has already arrived** for a large majority of the online white-collar workforce,
- In the absence of proactive efforts, **inequality is likely to be exacerbated** by the dual impact of technology and the pandemic recession,
- **Online training is on the rise** but looks different for those in employment,
- The public sector needs to provide **stronger support for reskilling and upskilling** for at-risk or displaced workers.

Covid-19 has provided an unprecedented challenge to ways of working and it will be important to see what changes remain in place in the long-term. Figure 1 shows that among business leaders surveyed in the Future of Jobs Survey, **over 80% report that they are accelerating the automation of their work processes** and expanding their use of remote work, with 50% also stating they aim to accelerate the automation of jobs in their companies. In terms of changes to workforce "one-quarter of employers expect to temporarily reduce their workforce, and one in five expect to permanently do so".

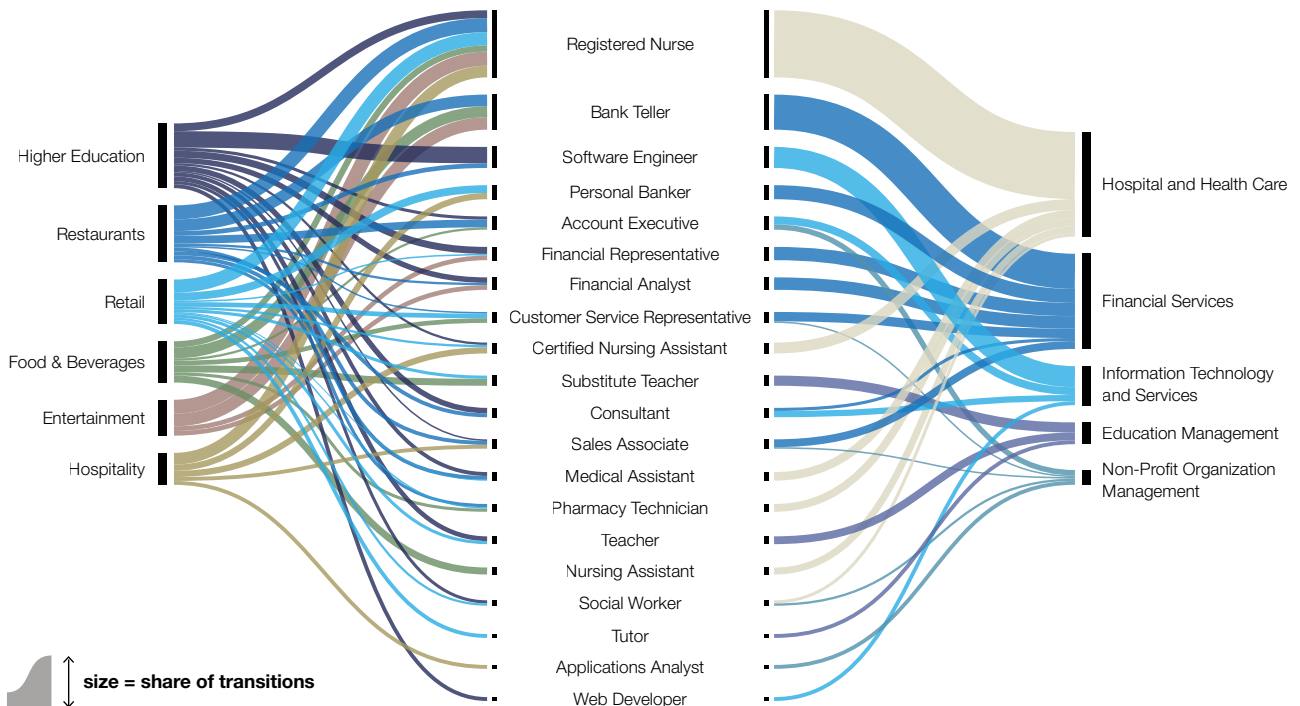
Figure 1: Planned business adaptation in response to COVID-19



Source: World Economic Forum, 2020. *The Future of Jobs Report 2020*. World Economic Forum, Geneva, Switzerland.

For young professionals Covid-19 has presented more challenges to navigating an even more turbulent labour market. This group has shown to be **interested in transitioning from current jobs affected by Covid-19 into new possible opportunities**. Figure 2 shows these next-step possibilities for young people transitioning within the workforce.

Figure 2: In-focus transitions for affected young workers

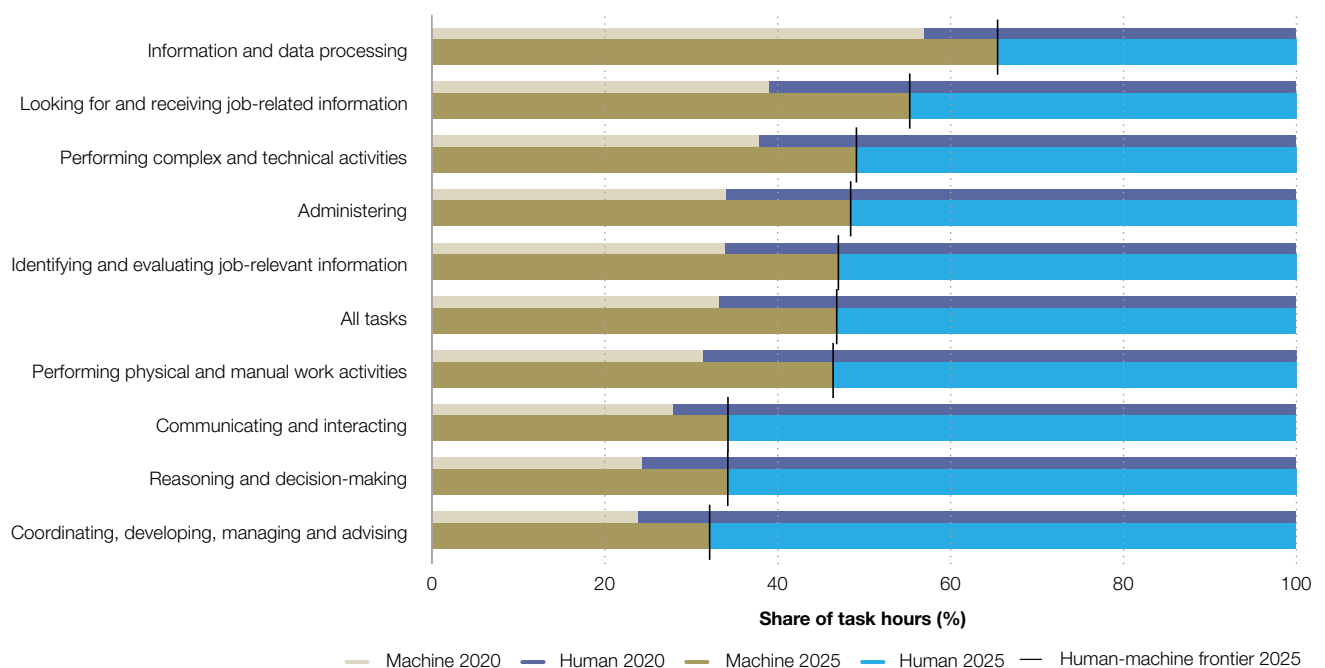


Source: World Economic Forum, 2020. *The Future of Jobs Report 2020*. World Economic Forum, Geneva, Switzerland.



Forecasts for labour market evolution between 2020 and 2025 show that **technology adoption is a key theme companies surveyed have been thinking about** for the past two years, and due to Covid-19 this thinking has accelerated. Artificial intelligence (AI) is finding the broadest adoption among the Digital Information and Communications, Financial Services, Healthcare, and Transportation industries. Big data, the Internet of Things and Non-Humanoid Robotics are seeing strong adoption in Mining and Metals, while the Government and the Public Sector industry shows a distinctive focus on encryption. Figure 3 shows the current state of tasks at work performed by humans vs machines in 2020 and the projected 2025 estimates for tasks. The **projections illustrate the speed at which some tasks will be automated or replaced by machines.**

Figure 3: Share of tasks performed by humans vs machines, 2020 and 2025 (expected), by share of companies surveyed



Source: World Economic Forum, 2020. The Future of Jobs Report 2020. World Economic Forum, Geneva, Switzerland (p.29).

The Report also projects the job roles that will be growing in demand within the next five years, presented in Figure 4. **Covid-19 has resulted in a set of emerging professions** reflecting the adoption of new technologies driving greater demand for green economy jobs, data, and the AI economy. Although the findings of the Report may be grim, **the destruction of jobs has also allowed for the creation of new jobs** to meet the evolving challenges and changes of the twenty-first century in a post-Covid-19 world.

Figure 4: Top 20 job roles in increasing and decreasing demand across industries

➤ Increasing demand

1	Data Analysts and Scientists
2	AI and Machine Learning Specialists
3	Big Data Specialists
4	Digital Marketing and Strategy Specialists
5	Process Automation Specialists
6	Business Development Professionals
7	Digital Transformation Specialists
8	Information Security Analysts
9	Software and Applications Developers
10	Internet of Things Specialists
11	Project Managers
12	Business Services and Administration Managers
13	Database and Network Professionals
14	Robotics Engineers
15	Strategic Advisors
16	Management and Organization Analysts
17	FinTech Engineers
18	Mechanics and Machinery Repairers
19	Organizational Development Specialists
20	Risk Management Specialists

➤ Decreasing demand

1	Data Entry Clerks
2	Administrative and Executive Secretaries
3	Accounting, Bookkeeping and Payroll Clerks
4	Accountants and Auditors
5	Assembly and Factory Workers
6	Business Services and Administration Managers
7	Client Information and Customer Service Workers
8	General and Operations Managers
9	Mechanics and Machinery Repairers
10	Material-Recording and Stock-Keeping Clerks
11	Financial Analysts
12	Postal Service Clerks
13	Sales Rep., Wholesale and Manuf., Tech. and Sci.Products
14	Relationship Managers
15	Bank Tellers and Related Clerks
16	Door-To-Door Sales, News and Street Vendors
17	Electronics and Telecoms Installers and Repairers
18	Human Resources Specialists
19	Training and Development Specialists
20	Construction Laborers

Source: World Economic Forum, 2020. The Future of Jobs Report 2020. World Economic Forum, Geneva, Switzerland (p.30).

SAADIA ZAHIDI, Managing Director, World Economic Forum said:

“Accelerating automation and the fallout from the Covid-19 recession has deepened existing inequalities across labour markets and reversed gains in employment made since the global financial crisis in 2007-2008. It’s a double disruption scenario that presents another hurdle for workers in this difficult time.”



Post-Covid-19 Skills Gaps and Employment Trends Report

The Skills Network

Online learning provider The Skills Network have analysed 1.5 million job postings to identify the most in demand skills and job roles sought by employers in the Covid-19 landscape. The research was published in partnership with labour market intelligence provider EMSI and uses a blend of job posting analytics and original research. The Skills Network is a leading provider of online qualifications, education technology, and skills training. They work in partnership with colleges, government authorities, and independent learning providers to deliver online learning and skills training.

Whilst we may not have been able to predict the way 2020 unfolded, **evidence suggests that COVID-19 has resulted in a shift in the types of skills that employers are looking for.** Navigating this difficult economy is about helping people to develop the resilient skills sought by today's employers. These are the skills that we must help people of all ages to acquire, helping them to excel and ultimately secure new or better employment. The Report found that the skills most in demand by employers are **auditing skills**, followed by **nursing** and **accounting**.



Skills shortages in the UK economy



The research also found that technical skills in **programming, coding** and **software development** are in very high demand, with technological roles growing by 7.3% each year, specifically, technical skills in **agile software development** and **JavaScript, SQL,** and **Python** programming languages.

The ability to identify and address mental illness has really become desirable for most employers across all sectors. **There has been a 21% annual increase in mental health related skills being listed in job postings across all sectors** and understanding mental health has become the seventh most in- demand skill in the UK.

60% of Chief Finance Officers say there is **a shortage of financial skills in the UK**, with **auditing** and **accounting** skills being the first and third most in-demand technical skills in the country, respectively.

There has been a clear increase in sales roles with 18% of all roles in the UK requiring strong skills in sales. **Selling and business development skills were listed in over 277,000 job postings since March 2020.**

The report also analysed those “soft skills” most required by employers, finding that being able to display soft skills like management, leadership and planning is crucial for candidates.

In terms of job roles and key sectors hit by COVID-19 - employment opportunities in several sectors are currently limited and/or at risk, including the hospitality and leisure, food and drink, aviation, and physical retail sectors.

On the contrary - **several sectors continue to perform well despite the COVID-19 recession: construction, employment law, online retail, digital marketing, technology, and online learning.**

The analysis also finds that there are **more than 50,000 nursing vacancies in the UK** and that despite reductions in the care services available owing to Covid-19, there had been a **7 per cent increase in vacancies in health and social care since the pandemic began**.

Top 10 Skills Sought by Employers in the UK

Including how many times they appeared in job adverts:

1. Auditing: 228,000
2. Nursing: 188,000
3. Accounting: 183,000
4. Business development: 161,000
5. Key performance indicators (the ability to work towards and understand KPIs): 160,000
6. Agile software development: 160,000
7. Mental health: 148,000
8. Welfare: 145,000
9. Warehousing: 122,000
10. Selling techniques: 115,000

Top 10 Most In-Demand Job Roles in the UK

Including how many times they were posted:

1. Nurses: 303,436
2. Sales and business development roles: 197,197
3. Care workers and home carers: 196,853
4. Programmers and software developers: 180,440
5. Primary and nursery education teachers: 178,827
6. Finance analysts and advisors: 112,200
7. Van drivers: 108,231
8. Finance, bookkeeping and accounting roles: 103,914
9. Cleaners and domestics: 96,032
10. Elementary storage occupations: 95,919

MARK DAWE, CEO of The Skills Network, said

"Our findings highlight the employment opportunities available in the UK right now – as well as the hard and soft skills that employers are currently looking for in highest demand. This report provides direction on how to potentially approach the labour market and where to invest skillsets. We also want to support learning providers and education institutions as they create or acquire training programmes.

Additionally, businesses will find this report helpful, as they consider where to best invest into the skills of their employees, building the workforce they will need to drive forward growth into the future."





Kat Emms,
*Education and
Policy Researcher,
Edge Foundation*

The Green Economy – driving a revolution in sustainable skills?

Given the impending threats of climate change, along with a decline in economic output across a number of industries and a fall in jobs resulting from the pandemic, the UK is being urged to 'build back better' in order to mitigate these crises. The government has set 2050 as their target to reach zero emissions; to reach that goal, **millions of new jobs will need to be created, existing jobs will need to change**, and consequently the skills of the workforce need to develop.

What are the issues?

Climate change is a defining issue of our time. Global temperatures are rising at an increasing rate and the need to cut emissions is paramount. Shifting weather patterns are causing catastrophic consequences for food production and people's livelihoods. We need to make drastic changes to mitigate these effects which requires a whole rethinking of the economy, from greening our whole infrastructure and operations, to ensuring buildings, transport and energy use becomes sustainable. The change must occur at all levels – local, regional, national and international, with buy-in from policy makers, businesses, educators and civil society.

What are green jobs?

The green economy and specifically green jobs have traditionally been thought of as those that involve renewable energy, electric transport, energy efficiency or nature conservation. In 2018 there were 185,000 full-time workers in England's low-carbon and renewable energy economy. In 2030 across England there could be **as many as 694,000 direct jobs employed in the low-carbon and renewable energy economy, rising to over 1.18 million by 2050** (Local Government Association, 2020). But, as more sectors transition to low-carbon models, every job has the potential to become "green" - to have a direct, positive impact on the planet.

For instance, homes across the country, as well as millions of businesses, need to make substantial changes in order for their premises and operations to produce next to no greenhouse emissions. This will create large demand across the construction and engineering sectors. Meanwhile, we also need scientific experts and decision-makers to ensure that our development is science-driven in a way that creates maximum benefit for the planet. The WEF for example, have brought on board climate-science advisors to guide decisions about where and how to plant, and provide context on social issues and biodiversity.



Homes across the country, as well as millions of businesses, need to make substantial changes in order for their premises and operations to produce next to no greenhouse emissions

Is this a government priority in the UK?

With rising levels of unemployment since the pandemic, the government is keen to create jobs and get people working again. The prime minister has set a goal for the **UK to achieve net zero emissions by 2050**, therefore the government has highlighted that green jobs will be at the heart of the economic recovery.

In 2020 a number of schemes to address these points have been announced. This has included £2 billion green home grants that give homeowners the opportunity to make their homes more energy efficient through installation, for example through insulation, heat pumps and draught proofing. This will support over 100,000 jobs for builders, plumbers and other tradespeople across England.

The government's wider green package also includes an additional £1 billion programme to make public buildings, including schools and hospitals, across the UK more energy efficient. An additional £50 million will pilot innovative approaches to retrofitting social housing at scale. In October 2020 the Build Back Greener scheme was announced with a £160m investment made available to upgrade ports and infrastructure across the country, in order to increase offshore wind capacity – which currently meets 10 per cent of the UK's electricity demand. The investment is set to create 2,000 new construction jobs, as well as supporting approximately 60,000 established jobs.

These investments have been welcomed but there is still pressure from some sides that more can be done to invest further in, for example, renewable energies and low-carbon transportation. If the government decides to go further to help avert the climate crisis, this could see the creation of even more jobs in the green economy.

What might further growth and skills look like?

A 2019 report by the [Energy Efficiency Infrastructure Group](#) suggests that decarbonising the UK's housing stock through renovation and construction work, will **create 100,000 jobs annually over the next decade**, with most jobs created in the services and the construction sectors.

Skills shortages in the UK economy



With regard to the energy sector, the [Institute for Public Policy Research](#) suggests that more than **200,000 jobs could be created in energy efficiency by 2030**, and 70,000 jobs in offshore wind alone as soon as 2023. In terms of onshore renewable energy infrastructure – principally wind, solar and hydro – [Thrive Renewables](#) estimates that these could deliver 45,000 new jobs by 2035. Of course, these opportunities vary across the UK, while in London, green jobs will mostly be in the financial, IT or legal industries. We need to ensure that this growth takes account of location in line with the government's levelling up agenda. For instance, in north-west England there is the opportunity to drive new jobs which focus on increasing wind capacity. A green recovery must ensure that areas without these opportunities are not left behind. Effective labour market interventions must also account for these regional variations, including adequate employment advice and guidance, informed regional education and training, along with measures to facilitate labour mobility where necessary, such as relocation grants.

International Renewable Energy Agency's ([IRENA, 2020](#)) report on a post-Covid recovery highlights **key skills needed in the power sector are heating and cooling, transport, supporting workforce and co-ordinating with industries to minimise the skills gap**. During a transition period to greener jobs, it is inevitable that many people are also at risk of losing their jobs as we move away from carbon-heavy traditional industries such as oil and coal. We need to ensure that along with the opportunities of the green economy, a **'just transition'** is also in place, by ensuring these workers are given the adequate opportunities to reskill and upskill *before* they lose jobs. Within these sectors, workers will be needed as technicians, experts, engineers and others with advanced degrees, as well as marketing and administrative personnel. Some research has suggested that **some skills are similar and even transferable as we move to greener sectors**; indeed, case studies covering diversification from one industry to another suggest that such declining occupations have extremely valuable skills sets for new occupations, particularly in engineering and maintenance roles within renewable energy ([Cedefop, 2018](#)).

The importance of further investment in research and development and digital infrastructure in driving clean innovation has also been highlighted as a way to progress the green economy and to drive innovation ([RICS, 2020](#)).

Who should be leading the skills transformation?

Government announcements and promises of investment in the green economy are welcome; however any such policies **cannot be successful without greater investment in skills and training**. There have been some moves to bolster parts of the workforce with skills training. For example, the government has launched grants for businesses and training providers to deliver training to support the abovementioned retrofitting green homes scheme. This should include skills training for both new and existing workers in the installation of individual energy efficiency and/or low carbon heating, as well as training in wider whole house retrofit knowledge and awareness ([Gov, 2020](#)).

More broadly than specific technical skills, the Centre for Progressive Policy (2020) highlights that '*a broader, decentralised approach to retraining is necessary, one that is built on cultural, emotional and social sensitivity. It should aim to empower people to move into jobs well matched not only to their existing skillset, but to their sense of who they are and who they want to be... There can be no doubt that the effects of our changing economy are as much social as they are economic... We need a retraining system that acknowledges and accounts for this complexity, rather than ignores it.*'

Forward-looking education programmes and training providers are needed to support the green growth and address the skills gap that may emerge from the transformation of the labour market. As mentioned, businesses and training agencies are starting to reskill, and upskill existing members of the workforce within specific sectors. But to meet the needs of the green economy and a sustainable future we need a broader approach which, as well as businesses, will include universities, apprenticeships, colleges and schools.

In order to support the skills of the workforce, we need to incorporate information technologies for remote learning (of even greater significance in the wake of the Covid-19 crisis).

In research and development, as well as the development of some higher-level skills such as engineering and digital, **universities will play a leading role** in developing people's readiness for the workforce. The growth of **degree apprenticeships** is also strengthening links between employers and higher

education to meet skills needs of industry ([Universities UK, 2020](#)). Enhancing the quality not only of university curricula but also of technical and vocational education and training (TVET) programmes is also vital.

IRENA (2020) additionally emphasise that, in order to support the skills of the workforce, we need to incorporate information technologies for remote learning (of even greater significance in the wake of the Covid-19 crisis); ensure continuity of education and training for current students through improved use of information technology; and integrate energy and climate education in primary, secondary and tertiary education. For example, exposing young people to renewable energy-related topics and careers early in their schooling is a good way to build their interest and understanding.



UK Consumer Digital Index 2020

Lloyds Bank

The Lloyds Bank UK Consumer Digital Index is now in its fifth year. Using the behavioural and transactional data of one million consumers to build a view of digital engagement in Britain, it is the UK's largest study of transactional, behavioural and attitudinal research.

The study includes the UK Essential Digital Skills for Life and Work measure. For this specific element of the study, Lloyds Banking Group (LBG) commissioned Ipsos MORI to research the 'essential digital skills' of the UK population, aged 15+. The Ipsos MORI research forms part of the 'UK Consumer Digital Index 2020'.

Key findings from the Lloyds Bank UK Consumer Digital Index report include:

- Ipsos MORI found that around **11.7 million¹ people aged 15+ across the UK lack the 'essential digital skills' needed for day-to-day life online**

Other elements of the report showed that:

- **One in three (33%) have boosted digital skills during lockdown**
- **Around half (54%) of 18-24 year-olds and 25-34 year-olds (46%) have assisted others with digital skills**



1. Extrapolations used, with their associated margins of error, are: Those who lack the Essential Digital Skills for life - 22% of participants, an estimated 11.7 million [11.1m - 12.4m] 15+ year olds across the UK. Those who do not have Foundation level skills - 16% of participants, an estimated 9 million [8.4m - 9.6m] 15+ year olds across the UK. Those who are unable to turn on a device by themselves - 11% of participants, an estimated 5.9 million [5.4m - 6.4m] 15+ year olds across the UK. Those who are unable to connect a device to a Wi-Fi network by themselves - 12% of participants, an estimated 6.7 million [6.2m - 7.3m] 15+ year olds across the UK. Those who are unable to use video calling apps like FaceTime and Skype - 25% of participants, an estimated 13.5 million [12.8m - 14.2m] 15+ year olds across the UK. Extrapolations used, with their associated margins of error, are: Total employed without EDS for Work - 52% of employed participants, an estimated 17.2 million [16.4m - 17.8m] 15+ year olds across the UK. Those employed and have the Foundation Skill but not EDS for Life - 5% of employed participants, an estimated 1.8 million [1.5m - 2.1m] 15+ year olds across the UK.

The Essential Digital Skills Framework

The Essential Digital Skills Framework defines the 'essential digital skills' needed to safely benefit from, participate in and contribute to the digital world of today and the future. The measure brings to life the very basic foundation tasks needed for an individual to get online by themselves, the digital skills needed to make the most of day-to-day life, and the digital work skills required to thrive in the workplace and to be more productive.

There are five categories of Essential Digital Skills for life and work:

- **Communicating**
- **Handling information and content**
- **Transacting**
- **Problem solving**
- **Being safe and legal online**

For example, for 'Communicating', essential digital skills for **Life** include "I can set up an email account" building up to the skills for **Work** such as "I can use digital collaboration tools to meet with, share and collaborate with colleagues". You can explore the essential digital skills data [here](#).

The Essential Digital Skills Measure





Methodology

The Lloyds Bank UK Consumer Digital Index is a report that draws on four datasets and this briefing includes findings from these sources. The largest dataset holds the behavioural and transactional data for one million UK consumers. Using this dataset alone, the Digital Index Score and Segmentation are created to measure the extent to which people are capable and engaged with the digital world. Secondly, a subset of the one million sample is taken and 2,700 consumers are surveyed. Finally, this report uses a separate standalone survey, conducted by Ipsos MORI on behalf of Lloyds Bank. Ipsos MORI interviewed a quota sample of 4,233 participants aged 15+ years in the UK (Great Britain and Northern Ireland) via their face-to-face Omnibus between 10th - 27th January 2020. Quotas were set by age, gender, working status, property tenure and region and data are weighted to represent the known population of this audience. Ipsos MORI population estimates from the survey data are based on ONS 2018 mid-year stats for the UK included.

The UK Consumer Digital Index 2020 data was collected prior to the COVID-19 outbreak. To provide a more recent snapshot and insight into changing consumer behaviours and attitudes, a short piece of tactical survey research was undertaken by YouGov Plc. This was undertaken between 5th - 6th May 2020. The survey was carried out online. The figures have been weighted and are representative of all GB adults (aged 18+). Total sample size was 2,137 adults.

Findings

The latest **Lloyds Bank Consumer Digital Index** has revealed that around nine million people aged 15+ in the UK were unable to use the internet by themselves prior to lockdown, lacking the basic skills required to communicate, shop or bank online. Research carried out before the introduction of lockdown restrictions – showed that 16% (c.9m) of the UK population cannot get online without assistance. In total 22% (c.11.7m) of the UK lack the skills needed for everyday life².

Technology is now a necessity for keeping connected, working remotely and accessing vital information, however just before COVID-19 restrictions began in the UK, **11%, (c.5.9m) of the population were unable to turn on a device and 12% (c.6.7m) unable to connect a device to a Wi-Fi network by themselves**. Also, 25% (c.13.5 million) people were unable to use video calling apps, like FaceTime and Skype.

Age remains the biggest indicator of whether an individual is online

At a crucial time when digital can turn isolation into inclusion, the behavioural data shows that only 7% of over 70s are likely to have the capability to shop and manage their money online. In fact, 77% of this age group have Very Low digital engagement. It is not just the elderly who are under-equipped though; **52% of those offline are between 60 and 70**

2. The skills needed for everyday life are Communicating, Transacting, Problem Solving, Handling Information and Content and Being Safe, Legal and Confident Online

years old, and 44% of those offline are under the age of 60. Often, it is the **most vulnerable and disadvantaged who are the most likely to be digitally excluded:**

- People with an impairment are 25% less likely to have the skills to access devices and get online by themselves.
- People with an annual household income of £50,000 or more are 40% more likely to have Foundation digital skills, than those earning less than £17,499.
- Whilst elsewhere the report shows that 4-in-10 benefit claimants have Very Low digital engagement.

The cost of low digital skills

The least digitally engaged are at a real disadvantage. They are more likely to be paying higher household bills irrespective of income, household or age; for utilities alone, they are spending an average of over £348 more per year. They are also less likely to earn as much – the Index transactional and job role data indicates that, for example, **digitally enabled workers are earning an average of £2,160 extra per annum.**

As well as contributing to healthy bank balances, in light of COVID-19, **digital interaction also plays a growing role in the ability to manage physical and mental health.** With citizens of the UK staying at home to stay safe, technology has become a necessity for keeping connected, working remotely and accessing vital information. This is a challenge for the digitally disengaged isolating at home. Even for those online, two-thirds (66%) had not used the Internet or digital apps and tools to manage their health pre-COVID-19 (e.g. participating in online support groups etc.). Even before lockdown, people with high levels of digital engagement recognise the benefits of these skills, with 87% saying it helps them stay connected to friends and family, 61% say it improved their ability to get a job, and 44% reporting it helps manage and improve their physical and mental health.



STEPHEN NOAKES, Retail Transformation Director, Lloyds Banking Group, said:

“The impact of lockdown has brought into sharp focus just how important digital skills are, when all of a sudden it may be the only way for some people to stay connected to loved ones, buy food or get hold of other essential items such as medicine.

While this unprecedented situation may have a greater impact on those who remain digitally excluded than those who are online, it is encouraging that this has focused people’s attention on digital capability as a vital life skill. We and many others have responded to this with extra support, including free training through our Academy, but more needs to be done to close the digital divide.”



Digital capability can also unlock people's potential in their professional lives

61% of highly digital citizens have used the Internet to successfully apply for a job and 71% say it has helped them to improve their future work prospects. With over two-thirds of roles now requiring digital capability of some kind, it is the digitally savvy who will beat others to the post.³

The UK workforce is still digitally underpowered – support with confidence and capability could unlock productivity for UK Industry

An estimated 17.2 million (52%) people in the workforce lack digital skills in the workplace; both they and their companies are missing out as a result. In the past twelve months, 100,000 more people have improved their digital skills at work, but c. 1.8 million people (5%) are still at the starting blocks with just the foundations of getting online, and not yet progressing to the wider digital skills for life.

Employers could do more, and may need more support, in order to effectively motivate and upskill their employees

23% of the population have received digital skills training and support from their employer and only 10% of employees who have improved their skills, have been motivated to do so by their careers and workplaces.

Up-skilling in lockdown

According to YouGov's poll of people during May 2020 of the lockdown, three quarters (78%) of the population now believe that the situation has escalated the need to be online and eight out of 10 people (80%) have felt that technology has been a vital support during the outbreak. **One in three (35%) have taken action and boosted their digital skills, with almost a third (31%) reporting they have up-skilled for work reasons, while 37% are using technology more than usual to help with health and wellbeing.**

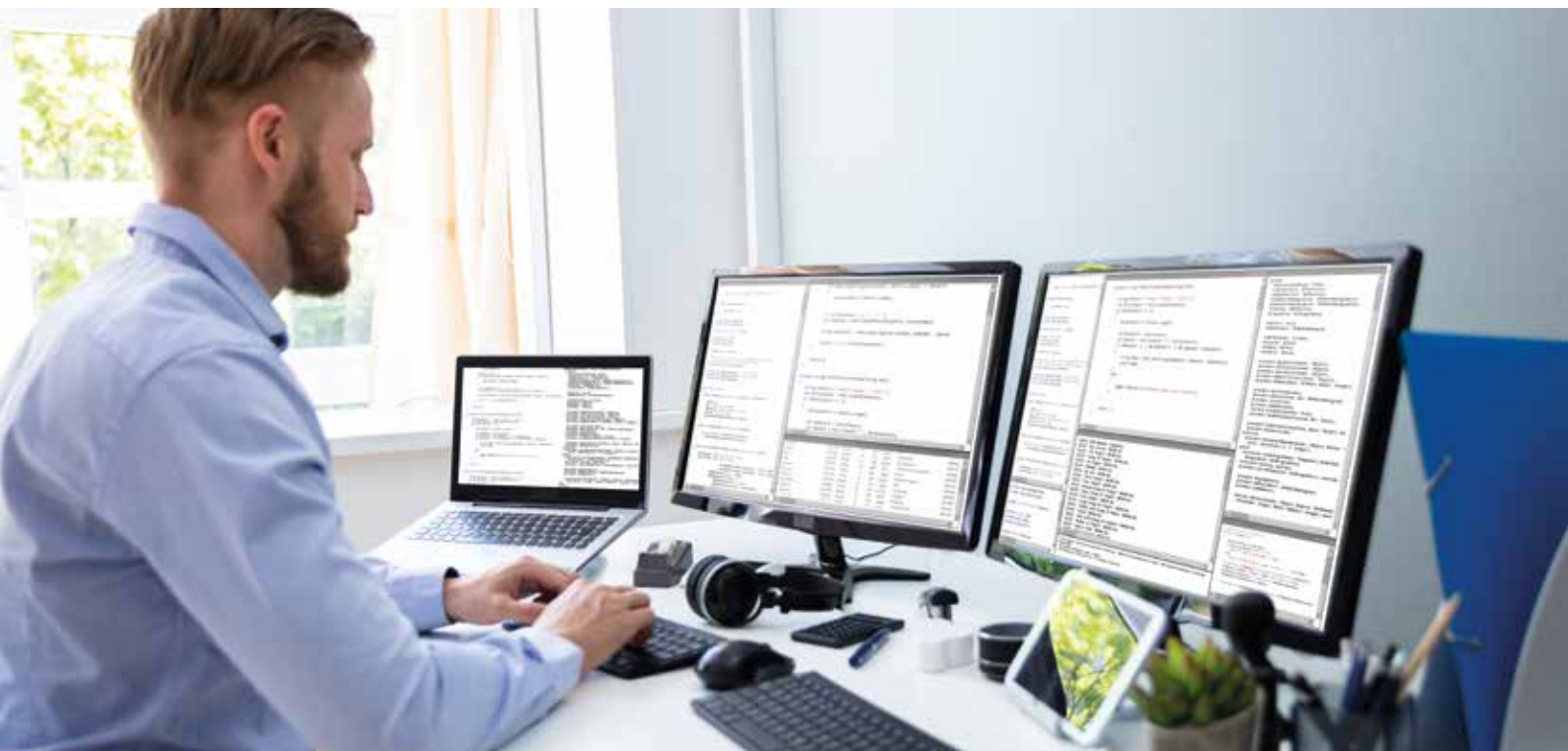
3. No longer optional: Employer demand for digital skills (June 2019): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/807830/No_Longer_Optional_Employer_Demand_for_Digital_Skills.pdf

Of those who have improved their skills, over half (57%) are self-taught, with a quarter (25%) calling upon family members for support and one in five (21%) relying on friends. More than one in three (35%) have also helped other people improve their digital skills during this period, with young people leading the way. Around half (54%) of 18-24 year-olds and 25-34 year-olds (46%) have assisted others with getting online. Staying in touch with others is the most popular reason to ask for help, with almost two thirds (62%) of people helping their family members to use apps such as Zoom or Whatsapp. This is followed by banking and shopping (30%).

Encouragingly, over half (57%) want to continue to boost their skills beyond the current climate, with one in five (20%) having used the time at home to do online learning to improve digital skills.

Helping to address the digital divide

The latest Consumer Digital Index also shows that without any intervention, by 2030, a quarter of the UK will still have a very low level of digital engagement. **The Lloyds Bank Academy was set up to help tackle the digital divide, providing free face-to-face and online digital skills training** to everyone at locations across Manchester, Stockport, Oldham and Salford. Set up by LBG in 2018 and supported by partners including Serco, Upskill Digital, Google, Job Centre Plus, the Academy scheme helped over 65 000 people, charities and businesses in 2019. Its curriculum is focused on skills designed to help in everyday life and at work, with practical exercises to help people turn knowledge into action. Having paused the face-to-face programme, the Lloyds Bank Academy has pivoted to place all focus onto building new training and creating a series of online classes for small businesses. These provide dedicated online training, the ability to hear from experts and virtual networking for small businesses and charities.





March 2020 and
September 2020

Tech Nation Report 2020 and Job & Skills Report 2020

Tech Nation

The annual Tech Nation and Jobs & Skills Reports chart and champion the UK's digital economy. Emerging and maturing technologies continue to disrupt and transform incumbent industries and tackle some of the world's biggest challenges. As we live through the fastest pace of change in recent history, UK tech is both at the forefront of some of the biggest questions and providing the answers.

Key statistics

- **£10.1bn:** Investment into UK tech companies in 2019 - a record
- The UK is **third** in the world for tech investment for another year running, behind only the US and China, and raising more than France and Germany combined.
- **5/20 cities:** Manchester, London, Bristol, Oxford and Cambridge are among Europe's top 20 cities for tech investment - London being number 1 in Europe
- **81.2%** of UK tech investment was made into high-growth, high-productivity potential scaleup firms - those with at least 10 employees and growing by at least 20% year on year.
- **277%:** Manchester is Europe's fastest-growing major tech cluster, with investment growing from £48m in 2018 to £181m in 2019.
- **2.93m:** UK tech employment grew by 40% in the last 2 years, now accounting for 9 per cent of the national workforce with 2.93m jobs created.



Emerging sub-sectors of applied technology

- **Agri-tech**, the sector disrupting farming and agriculture, garnered £1.84bn of investment in 2019 compared with £1.06bn in 2016. With such resources behind it, and the size of the industry it is addressing, Agri-tech is one of the most important technology sectors worldwide.
- **Healthtech companies** – such as UK-based Voscuris which uses Blockchain technology to share client data safely between clinical professionals, or ClinSpecDx which uses AI to diagnose blood cancer – are highlighting how emerging technologies are solving some of the most complex health problems, and enhancing our way of life. In 2019, worldwide investment in Healthtech reached a staggering £8.7bn.
- **Cleantech** – acting to reduce negative human environmental impact - will be a key component of any sustainable future and is at the forefront of achieving the United Nations (UN) Sustainable Development Goals. It gathered £17.93bn of investment in 2019.

Work and the Tech Sector

Employment in the digital tech economy increased by 40% between 2017 and 2019, to 2.93m people.

Employment in the digital tech economy has rocketed over the last two years. This includes all roles associated with digital tech companies, or digital tech skills:

- **Digital tech jobs** – includes all people working in digital tech occupations, irrespective of the industry. For example, a software developer working in a retail company.¹
- **Digital tech jobs in digital tech** – includes only people working in digital tech occupations in the digital tech industries. For example, a software developer working in a web development firm.²
- **Jobs in digital tech** – includes all people working in digital tech industries, including non-digital jobs. For example, an accountant working in a web development firm.³

What is driving this increase?

There has been a **150% increase in demand for roles within the digital technology sector over the past 4 years (2015-2018)**. This is almost three times as fast as the financial services industry.

1. ONS Annual Population Survey, Sept-Sept 2018-2019
 2. ONS Annual Population Survey, Sept-Sept 2018-2019
 3. ONS Business Structure Database, Sept-Sept 2018-2019

The demand for a Full-stack Developer has more than tripled between 2015 and 2018 (4,910 to 16,753). There were over 130,000 software developer vacancies in 2018, which means that the role is still the most in-demand tech position across all clusters in the UK. There were also over 230,000 non-tech jobs in the tech sector, like accountants, HR, and legal professionals.

Covid-19's effect on the digital sector

From June to August 2020, digital tech has seen a 36% increase in vacancies, second only to healthcare for the number of jobs advertised.

We cannot ignore the impact global issues have on society and the economy. Covid-19 has profoundly affected demand for roles across the labour market. We can see that digital tech roles remain in high demand compared to other sectors. During these uncertain times, technology has been an enabler for many companies and communities.

- Advertised roles in the digital tech sector have grown 36% since June
- The sector advertised over 90,000 jobs per week in August 2020
- Software Developer is seen as a key role within society, amongst the top five sought after roles within the UK alongside Social Care workers and Nurses
- Digital tech now accounts for 9 per cent of UK workforce
- Tech employs more than a fifth of workforce in UK's biggest cities

Regional demand for tech roles

Of all roles advertised, Cambridge and Belfast had the highest proportion of digital tech roles at 26%.

Within some regional clusters such as London, Glasgow, Edinburgh, Belfast and Cambridge, Software Developer was the most advertised role of 2019 out of any role advertised. Unsurprisingly, then, the most advertised digital tech role across the UK cities was a Software Developer (6 per cent of all advertised digital tech roles).

The skills employers are demanding within the Software Developer role include:

Engineering	net	Javascript	Java	C++
Data	SQL	Python	Amazon Web Service	Client

These top skills sought show the dynamic range of skills in demand; the programming skills are important but across multiple languages - showing Java and C++ are still very much the popular programming languages used for building software. Working with data, cloud and understanding clients' requests are key skills required by employers.



Cloud based computing is on the rise, this capability allows the creation, hosting, and executing of applications that can scale up much faster, due to the environment's capacity to handle large volumes. Between 2017 and 2018, employer demand for cloud skills only grew by 3.4%, compared to a staggering 22% between 2018 and 2019.

With an increasing demand for digital tech roles, there will inevitably be a surge for the relevant skills to undertake a role. As employer demand for cloud-based roles and cyber security roles increase, Table 1 looks at the number of roles overall that require such skills regardless of job title.

Over the past 3 years, we see that the demand for roles containing AI, cyber and cloud skills have all increased. We observe the larger increase from 2018-2019, particularly with the likes of AI. AI and cyber grew by 44% and 22% respectively year on year.

Table 1: Number of jobs mentioning specific skills

Skill	2017	2018	2019	% change 2017 -2019
AI	22,417	32,785	47,214	110.62%
Cyber Security	27,822	41,065	49,992	79.69%
Cloud	44,896	46,424	56,640	26.16%

Note: Absolute figures above refer to the number of job advertisements mentioning skills associated with AI, Cyber security and Cloud.

As these skills become more important and grow in demand, so does their relationship with each other and with data skills. This includes: training data to feed machine learning tasks to aid AI, managing data held in cloud storage, and with cyber security, protecting confidential data. Data roles are increasingly important, the need for diverse 'data people' is growing as more businesses want actual insight from data and need this to be communicated to them in a non-technical way.

Non tech roles in tech

As the demand for digital tech roles increases, demand for non-technical roles within these companies is growing as well.

Although there is emphasis on the lack of digital tech skills within the UK and a great push into getting the workforce and future generations equipped for an ever-growing digital world, there are important roles that sit within tech teams and companies. These are pivotal to the success of delivery and growth of products and companies.

For example, client management and onboarding are some of the key skills for a Customer Success Manager, whilst assurance, testing and creating automations are key skills for a Product Quality Inspector. Project management, kanban, jira and scrumming skills are also important for Delivery Managers and Scrum Masters.





Case study: ADA

National College for Digital Skills

Ada's mission is to educate and empower the next generation of diverse digital talent. It has a unique and innovative further and higher education offering that combines a focus on academic excellence, the context of the evolving world of technology, and the practicalities of real-life industry. Offering a Sixth Form and higher level (level 4) and degree (level 6) apprenticeships for those who are passionate about tech, Ada provides a pipeline of talent straight to the UK's tech industry, with a key focus on improving diversity and equality within the sector.





Sixth Form

Ada is the only Sixth Form college of its kind in the country. It opened its doors in 2016. Serving the local community of Tottenham Hale, and the wider London and Eastern area, Ada provides digital skills education to many students whose schools or sixth forms have either a poor digital offering or none at all. Ada has adapted the standard Further Education curriculum to focus on subjects that align with digital, offering three distinct pathways: creative, technical, and entrepreneurial. All students are required to take Computer Science BTEC (an academically rigorous but practically focused alternative to A-Level), alongside related A-Levels, and take part in termly 'industry projects' where their industry partners such as King Games, Deloitte, and Salesforce, simulate real-life digital tasks and work with students to complete them.

Higher Level and Degree Apprenticeships

Ada began offering apprenticeships in 2017, allowing tech-savvy students a practical and career-focused alternative to university. Ada's qualifications have been created with their industry partners to reflect the constantly evolving digital world. Apprentices leave Ada with a full degree, experience working in the tech sector at a London Living Wage and, because fees are paid through the government levy scheme, no student debt. The practical success of Ada's apprenticeship scheme has allowed them to scale up their offering with the recent launch of Ada Manchester in October 2020.

Throughout all their provision, the focus at Ada is, as Mark Smith their Chief Executive makes clear, ***“about solving industry problems in the classroom”***.



Students at ADA are supported by teachers to work on real life projects that bring the industry and curriculum to life.

Skills shortages in the UK economy

Team working and problem solving are key skills identified as in demand across all sectors of the economy.



Spotlight on Abby, Ada Sixth Form Graduate and Ada Apprentice

From the age of 13, Abby knew that she wanted a career in the digital sector, but the education offering in her area was not what she needed to succeed. As soon as Abby attended Ada's Sixth Form open evening, she knew she had found the college for her. For Abby, it was Ada's links with industry that made her sure Ada was the right fit: ***"The push on industry was probably the main thing that attracted me to Ada" she explains. "The fact that Ada worked with all these massive companies and did projects with them that gave you the skills to do real-life projects, was one of the main reasons I chose to go."***

Despite not having a GCSE in Computer Science, Abby thrived at Ada. She learned how to code, networked with Ada's industry partners, and took advantage of all the projects on offer. Abby excelled within their unique, industry-led teaching model, achieving excellent grades, and going on to become one of Deloitte's Bright Starts through an Ada-taught degree apprenticeship.

Abby's desire to learn in a hands-on way, was just one of the many reasons she chose an apprenticeship over university. As she puts it, ***"I'm getting a degree, for free, getting paid while I do it, getting on-the-job experience, and getting contacts in the area that I'm going to be working in. I feel like I've got a head start."***



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About Edge

The world is changing fast and education needs to keep up. Edge is an independent, politically impartial education foundation. We want education to be relevant to the twenty-first century. We gather evidence through research and real world projects and partnerships and use this to lead the debate and influence policy and practice.

Edge believes all young people need to be equipped with the skills that today's global, digital economy demands, through a broad and balanced curriculum, high quality training, engaging real world learning and rich relationships between education and employers.

The Edge Foundation
44 Whitfield Street,
London, W1T 2RH

T +44 (0)20 7960 1540
E enquiry@edge.co.uk

www.edge.co.uk