Scaling digital lifelong learning innovations in the UK

Mark Hall and Veronica Mrvcic

SEPTEMBER 2022

Acknowledgments

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Foreword by Andy Haldane, chief executive, the RSA

There is no greater challenge to growth in the UK economy than in the areas of skills. There are more unfilled vacancies at present in the UK – over one million - than ever previously. Every sector, industry and region of the UK cites staff and skill challenges as among the largest impediments to doing business and generating growth. Until this skills constraint is lifted, it is difficult to see how the UK can grow significantly and sustainably. The economic arithmetic really is that simple – and stark.

At one level, these skill challenges are not new. They have been accumulating over a number of decades, as rapidly changing skills needs in the labour market have confronted a sub-scale and often splintered skills eco-system in the UK. That is why, today, there are perhaps as many as 15 million people in the workforce whose skills are ill-suited to their jobs. The lion's share of these people are under-skilled, though there is a sizable fraction who are over-skilled for their roles. In the UK, we have both sizable skills shortages and mismatches.

Recent events, notably Brexit and Covid, have added materially to these skills problems. Brexit has curtailed the number of workers coming to the UK from within the EU, from right across the skills spectrum. This has led to a particularly acute shortage in sectors such as agriculture, health and hospitality. Increased flows of people from outside of the EU have failed to offset these trends. Meanwhile, Covid has shrunk levels of workforce participation, in particular among those aged over 50. This is a cohort rich in experience and expertise, amplifying skills pressures.

If that is the situation today, the situation tomorrow is likely worsen, probably materially, without remedial policy action. As the Fourth Industrial Revolution gains traction, most estimates suggest massive skills shifts have already taken place over the past decade, with these shifts likely to continue, if not accelerate, over the next decade. Without action, that could dramatically widen already-seismic skills fault-lines and threaten obsolescence among large swathes of skills, jobs and workers.

To be clear, there has been no lack of policy initiatives, nationally or globally, to tackle these skills fault-lines. Many Skills Revolutions have been heralded by government of all hues. By and large, these initiatives have been directionally sensible – for example, most recently in the UK, the emergence of apprenticeship programmes and Skills Bootcamps. The problem is rather the scale of these initiatives, and the speed at which they are being developed is simply insufficient for the task at hand, given long-lived, wide and rapidly widening skills deficits.

As well as setting out clearly this skills diagnosis, this timely report provides a set of clear recommendations for how we might begin to close the UK's skills deficits. To do so will require us to tackle, at source and at scale, the barriers to progress, whether financial, cultural or infrastructural. The report focuses in particular on the area of digital skills, where existing deficits are larger and are set to widen fastest in future, given trends in automation and technology.

Among those solutions promoted in the report, those focused on developing a new and improved national skills infrastructure are likely to have the largest and longest-lived impact. That includes a national programme for managing job and skills transition on a lifelong basis, an expanded and augmented National Careers Service, and the development of lifelong Personal Learning Accounts to support lifelong learning, academic and vocational.

This is the skills infrastructure needed to support 21st century economies and will require an effort every bit as great as the development of our educational infrastructures of the 19th and 20th centuries. Through its new Design for Life programme, the RSA is looking to develop both interventions and some of the supporting infrastructure necessary to redress the UK's yawning skills deficits, and to meet 21st century skills needs, in line with the recommendations in this report. In that way, the RSA's programme will contribute to regenerating people, place and planet in a way that grows jobs, skills and wellbeing at a time of profound societal and technological change.

EXECUTIVE SUMMARY

Chapter 1

1 Executive summary

The workers who have been impacted the most by the forces of automation and the pandemic are often those furthest away from accessing lifelong learning opportunities. In a rapid-changing landscape, where an accelerated shift in the pattern of occupations is coupled with a shift in the skill sets required for jobs, **this report argues that scaling existing and emerging digital lifelong learning innovations, and enabling an inclusive system, is key to promoting economic security, social equity, and individual wellbeing.**

As part of a multi-year partnership between the RSA, Mastercard Center for Inclusive Growth, and Bayes Impact – the winners of the Nesta 2021 Tech Challenge Prize[1] – we set out to understand the barriers that are preventing many adults from accessing lifelong learning opportunities in the UK and the potential drivers that could enable digital innovations in this space to have impact at scale.

We conducted a mapping exercise of the current lifelong learning ecosystem in the UK and identified nine key actors. We interviewed nine stakeholders from across the ecosystem to gather qualitative insights on the systemic lifelong learning challenges. We then brought together 16 stakeholders in a design-led blueprinting workshop to explore these challenges further and discuss ideas that can enable a lifelong learning system that works for all.

We found three **systemic challenges to lifelong learning**:

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1 High barriers to engagement with lifelong learning for those that would benefit the most from upskilling or reskilling.

- Many people don't think adult learning is for them.

- Poor access to finance and non-inclusive funding models.

- Courses tend to lack the flexibility in how to learn required by many adults.

- Those in work have limited information and awareness of which jobs are at risk and what training opportunities are available to them.

- Poor digital access, engagement, or skills.

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1 For more information see: www.nesta.org.uk/project/careertech-challenge/#:~:text=In%20March%202021%20a%20winner,120%2C000%20and%20%C2%A380%2C000%20respectively

2 Ineffective skills system and lifelong learning infrastructure makes it challenging for people to identify and enrol in upskilling and reskilling pathways.

- Poor quality of courses for adult learners.

- Key stakeholders across the system have different responses to in-demand skills.

- Limited and restricted investment from employers.

- Limited quality and openness of labour market data for careers advice and information.

- Ineffective services to help people transition through different careers.

3 Barriers to digital innovation and ineffective procurement practices mean public services do not harness digital innovation from outside of government.

- Siloed commissioning practices create barriers for innovators.

- Procurement policies and services' standards and frameworks can be hard to navigate and increase barriers to commissioning.

- Innovators face major barriers to scaling services.

- Limited quality and openness of labour market data for innovators to work with.

- Challenges competing with the major platforms.

To address these challenges, we identify three key **policy areas where interventions are required** to unleash the power of digital innovations in lifelong learning.

Recommendations
for lifelong learning
policy and provision

1 A universal service for job transitions and lifelong learning should be developed to match people to new job opportunities, and source high quality training opportunities in areas of future demand in the local labour market.

2 The Department for Education (DfE) should **review the funding and delivery of the National Careers Service (NCS) platform**. Funding should be extended to include support for all adults rather than limiting to key target groups.

3 BEIS, DfE and other partners, including digital platforms, should work together to pilot Personal Learning Accounts (PLAs) in a specific sector.

4 Reform of Apprenticeship Levy into a more flexible Skills and Training Levy.

Recommendations
to support digital innovation and delivery

1 The government should seek to **reduce procurement barriers and create an enabling environment for innovators.**

2 Department for Education and Department for Work and Pensions (DWP) should continuously engage with a wide range of stakeholders in the lifelong learning ecosystem to better understand the data needs and seek to ensure relevant data is available to software developers.

3 The government should **build experimental spaces for lifelong learning innovation.** This could include the **development of sandboxes.**

4 Challenge prizes to support lifelong learning should **be designed in a way that allows for agile iteration** and followed by clear scale-up mechanisms for the winner.

5 The government should **develop operational playbooks outlining how to successfully collaborate with a tech social innovation.**

Recommendations
to ensure inclusive and accessible learning support

1 The government must **increase the speed of its national broadband roll out.**

2 DfE and BEIS should **conduct an updated segmentation on adult learners in the UK** to understand the inclusion and accessibility challenges faced by learners in an increasingly digital society.

3 Raise awareness of **digital tools that support lifelong learning,** these should be **actively promoted by local authorities and community organisations.**

4 The government should incentivise digital platforms to **co-design solutions with people with lived experience,** design thinkers, digital inclusion and industry innovators **that ensure lifelong learning innovations are designed with digital inclusion at their core.**

5 Every **local authority should have a digital inclusion strategy** that ensures **all residents can access a public space to get online and get support with improving their digital skills and accessing lifelong learning opportunities.**

INTRODUCTION

Chapter 2

Introduction

Prior to the Covid-19 pandemic, technological advancements including automation were predicted to re-shape the labour market over the next decade, with some estimates suggesting that 90 percent of the current workforce in the UK, over 30 million people, will need to upskill or reskill by 2030.[2] With about five million workers having to re-train,[3] we now see 25 percent more workers having to transition to new occupations compared to pre-pandemic levels.[4]

The concurrent accelerated digitisation of services and the long-term impact of Covid-19 have led to a significant change in the world of work, compounding existing labour market inequalities with, for example, a growth in high-paid sectors and low-paid workers having been displaced often to declining sectors.[5] Occupations, especially in tech and STEM, as well as healthcare sectors are expected to significantly increase in the UK by 2030, while occupations, often of low wage, such as office support, may see a decline in the share of total employment,[6] putting the economic security of many workers at risk.[7] Additionally, recent research by LinkedIn has shown that the skill sets for jobs around the globe have also changed by approximately 25 percent since 2015 and is now predicted to double by 2027[8]. For example, it is now estimated that 90 percent of all jobs in the UK will require digital skills to some degree, within 20 years.[9] An accelerated shift in the pattern of occupations, coupled with a shift in the skill sets required for jobs, poses a risk to many workers in securing a good standard of work, to businesses in harnessing the supply of labour and governments to enable a system that enhances the economic security of all.

While technological advances, the Covid-19 pandemic, demographic changes, growing labour market inequalities and environmental changes have and will continue to reshape labour markets,[10] the pandemic has emphasised the level of uncertainty and the possibility of sudden disruptions to our future economy and life. The ability of workers, thus, to be adaptable to changing patterns in the world of work is essential to maintain a good job or build a meaningful career. But it is also crucial to our society in building a thriving and resilient economy. While significant recognition of lifelong learning has been given in the private and public spheres, with welcomed interventions by the government such as the Skills for Jobs being launched,[11] this report argues that scaling existing and emerging digital lifelong learning innovations, and enabling a system that is accessible to all, are key to developing an ecosystem that promotes economic security, social equity, and individual wellbeing in a rapid-changing landscape of the world of work.

2   Confederation of British Industry (CBI) (2020) Learning for life – funding a world-class adult education system. [PDF] London: CBI. Available at: www.cbi.org.uk/media/5723/learning-for-life-report.pdf [Accessed 01 July 2021].

3   Ibid.

4   McKinsey (2021) The future of work after COVID-19 [online] Available at: www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19 [Accessed 05 May 2021].

5   Taylor, A, Nelson, J, O'Donnell, S, Davies, E and Hillary, J. (2022) The Skills Imperative 2035: what does the literature tell us about essential skills most needed for work? [PDF] Berkshire: National Foundation for Educational Research. Available at: www.learningandwork.org.uk/resources/research-and-reports/skills-imperative-2035-literature-review/ [Accessed 05 May 2022].

6   McKinsey (2021) The future of work after COVID-19. Op cit.

7   RSA definition of 'economic security': "the degree of confidence that a person can have maintaining a decent quality of life now and in the future, given their economic, financial, and social capital" – Jooshandeh, J. (2021) Key workers in the pandemic: security traps among Britain's essential workers. [PDF] London: RSA. Available at: www.thersa.org/globalassets/_foundation/new-site-blocks-and-images/reports/2021/09/keyworkers-in-the-pandemic.pdf [Accessed 05 May 2021].

8   World Economic Forum (WEF) (2022) Here's why the world of work urgently needs to put skills first. [online] Available at: www.weforum.org/agenda/2022/03/work-skills-first/ [Accessed 05 May 2021].

9   Science and Technology Select Committee, HC (2016) Digital Skills Crisis. Available at: www.publications.parliament.uk/pa/cm201617/cmselect/cmsctech/270/27003.htm [Accessed 11 May 2022].

10   Taylor, A, Nelson, J, O'Donnell, S, Davies, E and Hillary, J. (2022) Op cit.

11   Hall, S (2021) Adult participation in learning survey – five key takeaways from our 25th year. [online] Available at: www.learningandwork.org.uk/news-and-policy/adult-participation-in-learning-survey-five-key-takeaways-from-our-25th-year/ [Accessed 10 May 2022].

Box 1: Piloting a new approach to lifelong learning – Bayes Impact accelerator, Jobflix

The project, funded by the Mastercard Center for Inclusive Growth, is a partnership between the RSA and Bayes Impact, a French non-profit organisation that leverages technology to improve lifelong learning outcomes. The journey with Bayes Impact began during the RSA's Economic Security Impact Accelerator[12] with their platform Bob Emploi, a free online platform that utilises AI to help over 300,000 jobseekers assess and improve their employability with data-driven advice.

Launched in 2020, the project is testing an innovative and scalable new approach to lifelong learning that will deliver careers and employability coaching to underserved workers via a digital platform called Jobflix in France and the UK. The platform enables users to explore different career options and access personalised recommendations based on their skills and interests. By leveraging labour market data, the platform guides users to training pathways leading to good attainable jobs. The aim is to support users shift to a long-term career development mindset and link pathways to concrete employment opportunities.

As of June 2022, the Jobflix pilot in France has now reached its target of 100,000 users. The pilot in the UK, in partnership with the Department for Work and Pensions, has been launched in February 2022, aiming to reach 1,000 users in six months.

The lifelong learning challenge

It's not only the UK that has one of the highest shares of under-qualified workers among OECD countries.[13] The workers most impacted by the forces of automation and the pandemic are often those furthest away from accessing lifelong learning opportunities. For instance, recent research from the RSA has found that a large share of working social renters are in high automation risk jobs (61 percent), have lower qualifications, and less likely to take part in training.[14] According to the Learning and Work Institute, unemployed adults (seeking work) are approximately 30 percent less likely to participate in learning compared to full-time workers.[15] In addition to these findings, research shows that most people will only consider training if there is a clear route to a new job;[16] existing vocational training pathways overwhelmingly benefit already highly educated individuals;[17] and the most disadvantaged learners are those who are more likely to encounter multiple barriers to learning.[18]

Over much of the past 20 years, addressing these challenges within the UK's lifelong learning system has not been prioritised and interventions that have made headway

12 For more information see: www.thersa.org/projects/archive/economy/rsa-economic-security-impact-accelerator

13 OECD (2021) United Kingdom. Economic Policy Reforms 2021: Going for Growth. Available at: www.oecd.org/economy/growth/United-Kingdom-country-note-going-for-growth-2021.pdf [Accessed 05 May 2022].

14 Jooshandeh, J (2021) Key workers in the pandemic: security traps among Britain's essential workers. Op cit.

15 Hall, S (2021) Adult participation in learning survey – five key takeaways from our 25th year. [online] Available at: www.learningandwork.uk/news-and-policy/adult-participation-in-learning-survey-five-key-takeaways-from-our-25th-year/ [Accessed 10 May 2022].

16 For example, see the UK government's National Retraining Scheme user research.

17 Wallace-Stephens, F (2018) Sizing up the good work gap. [online] London: RSA. Available at: www.thersa.org/blog/2018/07/sizing-up-the-good-work-gap [Accessed 05 May 2021].

18 Pennacchia, J (2018) Barriers to learning for disadvantaged groups: Report of qualitative findings. Social Science in Government. Available at: www.assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/735453/Barriers_to_learning_-_Qualitative_report.pdf [Accessed 11 May 2022]

have often been difficult to implement. For example, policy initiatives such as Individual Learning Accounts and the National Retraining Scheme have failed,[19] and the impact on employability of public investments into adult learning such as the Skills Bootcamps is still unclear.[20] As a result of this, the UK adult skills system is struggling at a time when it is in such high demand. Given the declining public and employer spending on adult learning in real terms, low participation in lifelong learning,[21] and responsibilities spanning various government departments, reforming the lifelong learning ecosystem in the UK is an even more challenging task.

Digitalisation of public services

The UK government has been expanding its digitalisation of public services since the launch of GOV.UK in 2012.[22] This includes the development of the National Careers Service, which is the main online portal in England to guide people with decisions about careers, courses and work. The NCS offers free advice via an online chat or phone call and provides online tools including skills assessments, links to courses on topics including personal development, computer essentials, business and finance, and coding. With similar tools available for careers advice in Northern Ireland, Scotland and Wales;[23] since its inception, more than 650,000 people have benefitted every year from the NCS to make decisions about their careers, training,

and jobs.[24] While some prime contractors such as Futures have seen an uptake in the engagement with the service during the Covid-19 pandemic,[25] others have seen a decline in customer demand due to a lack of awareness of the service – contrary to expectations.[26]

Research conducted by Policy Connect shone light on some of the additional reasons for the decrease in demand which included lower numbers of NCS advisers' referrals due to Jobcentres closures; fewer opportunities to assess people's needs assessments due to an increased number of Universal Credit applications and/or not falling under 'priority' categories; lower referrals due to a lack of knowledge or awareness of the NCS by newly hired work coaches by the Department for Work and Pensions; users being directed to other schemes such as Plan for Jobs due internal targets.[27]

Additionally, the research stressed digital poverty as a theme which came across significantly in their qualitative evidence on careers information, advice, and guidance (CIAG). Many people in the UK continue to lack sufficient access to broadband, appropriate technology, and/or digital skills to engage with digital services.[28]

This shows that creating the digital tools only solves part of the problem. Those with digital skills and access, or those who have access to support will benefit but others, often those most in need of these services, are increasingly excluded and vulnerable to changes in the labour market.

19 Education Select Committee, HC (2020) A plan for an adult skills and lifelong learning revolution. Available at: www.committees.parliament.uk/publications/4090/documents/40532/default/ [Accessed 05 May 2022].12

20 Williams, J et al. (2021) Skills Bootcamps process evaluation. Department for Education. Available at: www.assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1027163/Bootcamps_wave_1_final_evaluation_report.pdf [Accessed 05 May 2022].

21 OECD (2021) United Kingdom. Economic Policy Reforms 2021: Going for Growth. Op cit.

22 Government Digital Service (2021) Government Digital Service: Our strategy for 2021-2024. Gov.UK. Available at: www.gds.blog.gov.uk/2021/05/20/government-digital-service-our-strategy-for-2021-2024/ [Accessed 11 May 2022].

23 See: NIdirect for Northern Ireland; Careers Wales for Wales; My World of Work for Scotland.

24 Education Development Trust (nd) National Careers Service. [online] Available at: www.educationdevelopmenttrust.com/our-research-and-insights/case-studies/national-careers-service#:~:text=Nationally%2C%20the%20National%20Careers%20Service,their%20career%2C%20training%20and%20jobs [Accessed 10 May 2021].

25 From education to employment (fe) news (2021) Transforming the National Careers Service: What does the Skills for Jobs White Paper really mean? [online] Available at: www.fenews.co.uk/fe-voices/what-does-the-skills-for-jobs-white-paper-really-mean/ [Accessed 22 February 2022].

26 Policy Connect (nd) Transition to Ambition: Navigating the careers maze. [online] Available at: www.policyconnect.org.uk/transition-ambition-navigating-careers-maze [Accessed 10 March 2021].

27 Ibid.

28 Ibid.

Introduction

Social innovators are also playing a key role to plug gaps in the system and address different lifelong learning challenges. From augmented learning to digital coaching there is no shortage of micro innovations – as outlined in the RSA's Innovations in Good Work directory.[29] The challenge is often scaling promising innovations and embedding them within the system to reach citizens at scale.
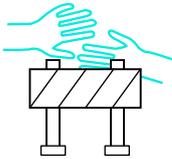
This report will explore three themes:
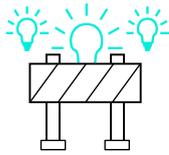
1 **High barriers to engagement with lifelong learning** for those that would benefit the most from upskilling or reskilling.

2 **Ineffective skills system and lifelong learning infrastructure** makes it challenging for people to identify and enrol in upskilling and reskilling pathways.

3 **Barriers to digital innovation and ineffective procurement practices** mean public services do not harness digital innovation from outside of government.

It sets out a series of recommendations for policy and practice that address these challenges.

Box 2: Micro innovations in the UK

The micro innovations identified through our research aim to equip people with the skills they need to weather oncoming technological trends or help them transition into the jobs of the future.

The majority of platforms identified here (see full list in Appendix 1) are drawn from the RSA's Innovations in Good Work directory in Europe.[30] The judging criteria for this innovation mapping exercise was based upon four criteria – significance of challenge; evidence of impact; extent of innovation; and potential to scale – a methodology that was adapted from the RSA's 2018 Future Work Awards.[31] We also explored other digital lifelong learning innovations that were suggested by participants in our workshop.

29 RSA (nd) Innovations in Good Work directory. [online] Available at: www.thersa.org/future-of-work/global-innovations-good-work/directory [Accessed 2021]. See also, Appendix 1.

30 Morgante, E and Wallace-Stephens, F (2021) Good work innovations in Europe: Reimagining the social contract. [PDF] London: RSA. Available at: www.thersa.org/reports/good-work-innovations-in-europe-reimagining-the-social-contract [Accessed 2021].

31 RSA (2019) Future Work Awards Winners 2018/19. [online] Available at: www.thersa.org/projects/archive/economy/future-work-awards/winners [Accessed 2021].

Introduction

We identify six common areas where these micro innovators are operating.

1. **Massive Open Online Courses** (MOOCs) and other **online learning tools** offer learners a flexible and modular approach to upskilling and reskilling, eg CuppaCare and Kinderly both exploit the modular nature of online courses, which allows workers to fit learning around their busy work schedules. The CuppaCare app provides care workers with training guides and quizzes on care topics to be used in downtime as training refreshers. Kinderly provides Continuing Professional Development accredited bite-sized learning for early years childcare practitioners, which is made more engaging through animations, videos and interactive activities.

2. **Augmented and virtual reality** systems enhance the provision of both technical and soft skills in the workplace, eg Bodyswaps leverages VR and AI to empower learners to practise and develop their soft skills through empathy and self-reflection – developing communication, teamwork, leadership and job interview skills. GI-CAST demystifies cybersecurity, giving learners confidence to engage with the digital world and gain further skills to enhance their career options in the changing economy.

3. **Digital career coaching** platforms are using new technology and labour market data to offer workers personalised coaching and support navigating career and training options, eg Yuno helps users to explore different careers by assessing their personality and interest, and further supports them by introducing them to employers accordingly; FutureFit AI uses an AI-powered tool that acts as a GPS to help workers to understand their skills and navigate career transitions. Currently, Bayes Impact are piloting in the UK their successful AI-driven career coach Bob[32], by leveraging labour market data and career resources. Bob empowers job seekers in their job search and supports job coaches in their daily work.

4. **New approaches** to recognise and validate skills, including those through on the job and informal learning are emerging through a range of **digital credentials and skills profiles**, eg Tendo is a flexible platform that captures the skills and hours of frontline workers and stores them on a portable skills account. The RSA's Cities of Learning[33] digital badges track learning and give students a valuable, trusted way to demonstrate their skills and knowledge.

5. **Other innovations** blend human interactions with digital tools and innovation, eg CodeYourFuture and Jolt both run programmes that teach people digital skills in an accelerated format, through **technology bootcamps**, and connect them with employment opportunities.

6. **Peer learning networks** enable people to connect and support each other to stay motivated through mentoring and peer support, eg ViewVo helps professionals explore short job shadowing opportunities. Enrol Yourself supports workers to make learning a lifelong habit by mobilising self-directed peer group learning opportunities.

The innovations outlined above, demonstrate the potential for social innovators to develop nimble and agile solutions that can address key challenges, in lifelong learning and for the future of workers.

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32 See: www.bayesimpact.org/en/bob for more information

33 For more information see: www.thersa.org/cities-of-learning

RESEARCH APPROACH AND METHODS

Chapter 3

Research approach and methods

The question guiding our research was:

> How can we leverage the power of digital innovation to maximise learning opportunities in the UK in order to promote economic security, social equity, and individual wellbeing?

In making the arguments within this research and our recommendations, we draw upon the ideas, augmented with further research, that emerged from a qualitative and design-led methodology, which follows the RSA's Living Change Approach applied to the delivery of our project.[34]

Gain knowledge

To develop a strong understanding of the lifelong learning ecosystem from multiple perspectives, alongside the challenges and barriers to drive change at service, behavioural, structural and mindset levels, we:

- Conducted a mapping exercise of the lifelong learning ecosystem of the UK, which included a mapping of micro innovations.

- Spoke to nine leaders and experts (March-April 2021) from across the lifelong learning system in the UK in 45 minute-long semi-structured interviews

– academics, national/local government officials, policymakers, experts in the private sector and digital innovation.

- Discussed ideas with 16 stakeholders in a two hours and 45 minute-long design-led workshop (May 2021). Participants in the workshop included experts from thinktanks, universities, digital platforms, regional government and partners.

- Conducted additional desk-based research.

34 For more information see: www.thersa.org/approach/living-change

Research approach and methods

Build movements

Through our research we have engaged with more than 20 organisations including universities, colleges, local authorities, government departments, charities, commissions, social innovators and digital platforms. We have built important relationships and developed partnerships that will contribute to our ongoing work in this field and support us in driving change. We also asked the stakeholders at our workshop to suggest other organisations we should be engaging with through this work.

This report is published and shared with policymakers, innovators, academics and across social media platforms to continue to build movements that support digital innovations in lifelong learning. We realise that this requires a constellation of stakeholders and organisations at all levels of the system to take a collective effort and investment in this area.

Spot opportunities

One of the key elements of our workshop was a design-led methodology to identify potential drivers (or opportunities) for change, as well as potential levers that could remove or reduce barriers to change. This was facilitated by asking participants to review an evidence-led systems map (Appendix 2) to spot energy for change, and then develop 'How might we?' questions, which were then voted on using a prioritisation matrix. The top six questions were then used to generate ideas to address these questions. The design-led methodology applied encourages participants to generate ideas without thinking about the detail or constraints that might exist to develop a picture of what the ideal solutions to some of the system challenges might look like.

Develop ideas

Building on the opportunity spotting exercise, our participants were then split into groups and asked to respond to two 'How might we?' questions from the perspective of a particular stakeholder group.

Test interventions

We hope that policymakers and key system actors will engage with the recommendations of this report and explore testing some of the ideas presented. Currently, our partners, Bayes Impact, are testing their digital coaching intervention as part of a pilot with DWP.

Track learning

We have, and will continue to, engage with policymakers and stakeholders throughout the life cycle of the project and present the learnings from this project in this and future reports.

'How might we?'
Workshop questions

Prioritisation matrix key:

(F) **Feasibility:**
Which opportunities do you feel
are the most feasible practically?

(D) **Desirability:**
Which opportunities do you
feel are the most desirable?

(V) **Viability:**
Which opportunities do you feel
are the most viable for impact?

Voted most popular ————→ Least

Figure 1: **Linking skills to jobs**

How might we...

move organisational learning from siloed learning and development functions into organisational operations?
(F) **(V)**

get employers not to fear helping their workers learn new skills?
(D)

improve the links between educators and employers to produce work-ready learners rather than just people with skills?
(V)

incentivise employers to invest in lifelong learning?
(F) **(D)** **(V)**

balance employers' needs that stem from flexibility and firm-centricity with social equity objectives?
(V)

prepare citizens to learn alongside Artificial Intelligence (AI) rather than fear it?
(D)

Figure 2: **Removing barriers for digital innovation**

How might we...

work out what government sees as its key opportunity areas and innovation needs?

F

enable innovators to work with governments to scale effective solutions?

D V

remove barriers to procurement?

F D
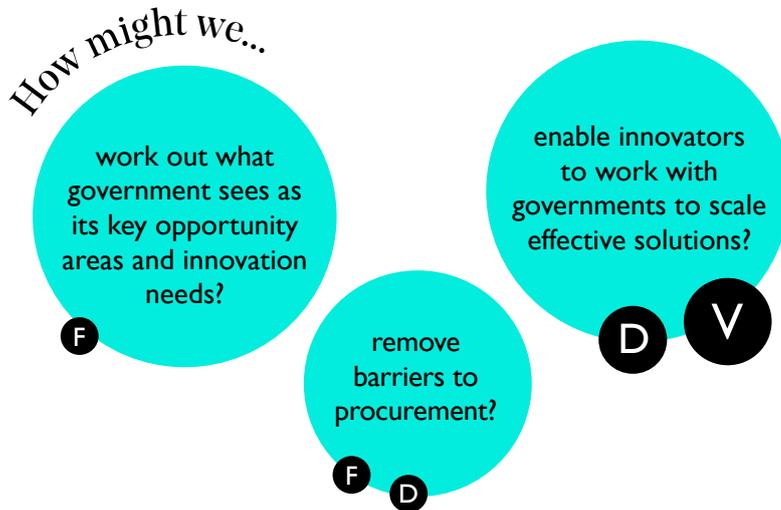
Figure 3: **Improving access for learners**

How might we...

remove barriers to confidence and trust when helping individuals with digital skills and digital inclusion?

D

ensure people have the maintenance support for lifelong learning, especially for those retraining?

D

improve digital and data accessibility through infrastructure, ubiquity, and affordability?

D V

integrate new digital learning services with interventions on digital skills?

F D V

put workers in the driving seat when it comes to engaging with learning pathways?

D

signpost people who aren't online to digital skills so they can engage with online opportunities?

D

KEY FINDINGS
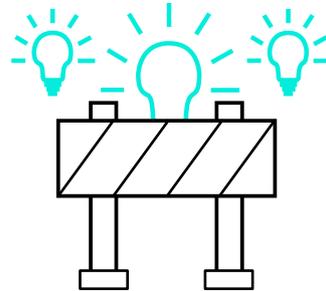
Chapter 4

Key findings: three systemic lifelong learning challenges

Our research highlighted three systemic challenges.

High barriers to engagement with lifelong learning for those that would benefit the most from upskilling or reskilling.

Ineffective skills system and lifelong learning infrastructure makes it challenging for people to identify and enrol in upskilling and reskilling pathways.

Barriers to digital innovation and ineffective procurement practices mean public services do not harness digital innovation from outside of government.
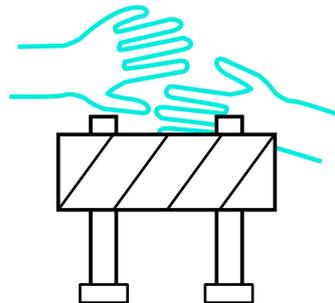
High barriers to engagement

There is considerable evidence that people's perception of, and participation in, learning and education is shaped in some way by their previous experience.[35] Those that have had a poor experience of formal education or have missed opportunities of learning and career progression as adults can become more reluctant to re-engage with learning later in their lives. Our research identified the following barriers to engagement with lifelong learning that have played a key role in declining levels of participation.

1 People don't think adult learning is for them or will help them improve their job prospects.

One of the most significant barriers to engagement with lifelong learning that emerged from our interviews is having a previous negative experience of education. This negative experience can lead to deep rooted issues around trust, confidence, self-efficacy, motivation and resilience, often leaving people with a sense that developing new skills and finding better work are beyond them.[36] This exacerbates the challenges faced by those that leave the education system with limited qualifications and develop few transferable skills in work. This reluctance to re-engage with learning creates a barrier for people to boost their skills through adult learning and progress in their careers. It further emerged from the workshop that many adults also have a low level of perceived value of training and learning, especially those with caring responsibilities or limited income. Adult learning can be considered a high risk activity if it's not clear that it will lead directly to improved job prospects.

> The more learning looks and feels like school, the less likely disaffected learners will be to engage. *Blueprinting workshop participant*

2 Poor access to finance and non-inclusive funding models make it harder for those on lower incomes to re-engage with learning and enhance their skills.

The upfront financial commitment to enrol on many courses is beyond the reach of many adults and there is limited flexibility to explore whether a course is a good fit before committing. For adults that do not go into higher education, access to finance has traditionally been much harder, with many being cut adrift from most government funding provision, other than apprenticeships. Cost has been a widely evidenced barrier to adult learning, especially for more vulnerable social groups,[37] and the most recent survey on adult participation in learning indicated that 'financial support towards costs of learning/training' was second of those listed for adults to change a job or career.[38]

> The funding for students over 24 is problematic. Funding can impact people's benefits – it could affect child and housing costs. This barrier is amplified by inadequate information, advice and guidance about how to access financial support. *Interviewee*

35 See, for example, Pennacchia, J (2018) Op cit.

36 Mathers, A, Chambers, J and Richardson, J (2020) Shocks, knocks and skill building blocks. [PDF] Good Things Foundation. Available at: www.goodthingsfoundation.org/insights/shocks-knocks-and-skill-building-blocks/

37 Pennacchia, J (2018) Op cit.

38 Hall, S (2021) Adult participation in learning survey – five key takeaways from our 25th year. Op cit.

Key findings

Courses tend to lack the flexibility in how to learn required by many adults.

Interviewees explained that policy barriers limit learning providers' ability to increase the modularity and flexibility of courses – a crucial factor to overcome adults' barriers to learning.[39] Forthcoming research conducted by the RSA shows that friction remains a high barrier to participation in learning with people dropping out due to inflexible courses.[40] The rigidity of the system in terms of the flexibility to design courses that are attractive to people to complete at their own pace and around other commitments restrict the pool of potential learners that can enrol in courses. Particularly for adults with childcare or caring responsibilities alongside work, many courses for adults are too rigid and do not fit with the reality of how adults want to learn.

> There is an inflexibility about how long qualifications take – adult learners need that flexibility to succeed. *Interviewee*

3 Those in work have limited information and awareness of which jobs are at risk and what training opportunities are available to them.

The scale of upskilling and reskilling required in the UK is overwhelming. The CBI estimates that 90 percent of the current workforce will either need to upskill or reskill over the next decade.[41] Many workers in sectors and roles at risk from automation underestimate the threat to their current job situation and therefore fail to plan their journey to upskill or reskill. Research from the CBI shows that 68 percent 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.[42] Once people do take the next

step and explore their options, they face poor and fragmented information flows on training opportunities, career pathways and funding. This has been further evidenced by research which shows that it's more and more difficult for people to identify the roles, sectors and training they should be looking to for sustainable employment due to non-detailed labour market information, especially at a local level.[43]

> Most people don't think they need learning to get their next job, they either feel they already have the skills or are not clear how training will help them progress. *Blueprinting workshop participant*

4 Poor digital access, engagement, or skills.

Interviewees explained that digital exclusion is still a major problem in the UK. While the pandemic has further increased the need for digital skills and access to lifelong learning across much of society (Table 1), around 15 million people in the UK have low digital engagement and face increased barriers to engaging with digital lifelong learning opportunities.[44] The UK government's Digital Inclusion Strategy identifies four types of challenges people face to going online – access, skills, motivation and trust – all of which are extremely relevant to lifelong learning.[45] Access to broadband and to personal digital devices are significantly necessary to learn, as shown by a recent survey of 2,071 UK adults conducted by the RSA with over 50 percent of respondents identified (forthcoming RSA publication)[46]. Those with limited digital access or skills are less able to benefit from online tools and services to help them plan their learning journey and register for training, thus, facing barriers to participating in aspects of learning that is delivered digitally.

39 Pennacchia, J (2018) Op cit.12
40 Kenyon, T, Breeze, H, O'Doherty, A (2022) Forthcoming publication. London: RSA
41 Confederation of British Industry (CBI) (2020) Learning for life – funding a world-class adult education system. Op cit.
42 Ibid.
43 Policy Connect (nd) Transition to Ambition: Navigating the careers maze. Op cit.
44 Lloyds Bank (2021) UK Consumer Digital Index 2021. [PDF] Lloyds Bank. Available at: www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/210513-lloyds-consumer-digital-index-2021-report.pdf [Accessed 2021].
45 GOV.UK (2014) Government digital inclusion strategy. [online] GOV.UK. Available at: www.gov.uk/government/publications/government-digital-inclusion-strategy/government-digital-inclusion-strategy [Accessed 2021].
46 Kenyon, T, Breeze, H, O'Doherty, A (2022) Op cit.

Figure 4: Digital inclusion challenges. Digital divide in the UK [47]

Digital inclusion challenges	Digital divide in the UK
Access	• 1.5 million households have no internet access [48] • 2 million UK households struggle to afford internet access [49] • 37 percent of non-internet users don't have the right equipment to go online [50]
Skills	• 10 million lack the most basic digital skills [51] • 8.7 million employed people have essential digital skills for life but not for work [52] • 67 percent would improve digital skills if they knew support was available [53]
Motivation	• 42 percent of non-internet users see no need to go online [54] • 46 percent of non-internet users feel it is too complicated [55]
Trust	• 1.3 million non-internet users worry about privacy and security [56]

Box 3: Emerging practice:
re-engaging disengaged learners

What emerged from our interviews is that increasing engagement with digital platforms, which has been turbocharged by the pandemic, has amplified informal learning on platforms such as YouTube and TikTok. While these platforms should be taken with caution, in-platform exposure to misleading information and harmful content has been widely evidenced,[57] and concerns for addiction have been raised.[58] They can present opportunities to remove barriers that are stopping people from perusing informal or formal learning opportunities as an adult. By providing a 'hook', video learning can offer attractive and accessible routes to engaging with digital learning in a way that feels less like formal learning.

Covid-19 has increased awareness of the need to improve digital access and capabilities. Local authorities and charities such as Good Things Foundation have been leading initiatives to connect people who are digitally disengaged during the pandemic enabling them to access online services such as the NCS and online courses.[59]

Initiatives by the government, such as Skills Bootcamps, accompanied by the Lifetime Skills Guarantee and the recent proposal of a lifelong loan entitlement, presented in the Skills for Jobs White Paper, aim to redesign the learning experience by increasing the modularity and flexibility of courses through online and blended learning.[60]

47 For more information see: www.goodthingsfoundation.org/insights/building-a-digital-nation/
48 Ofcom (2021) Adults' Media Use and Attitudes report. [PDF] Ofcom. Available at: www.ofcom.org.uk/__data/assets/pdf_file/0025/217834/adults-media-use-and-attitudes-report-2020-21.pdf [Accessed 2021].
49 Ofcom (2020) Affordability of communications services. [PDF] Ofcom. Available at: www.ofcom.org.uk/__data/assets/pdf_file/0021/209613/affordability-of-communications-services-initial-findings.pdf [Accessed 2021].
50 Ofcom (2021) Adults' Media Use and Attitudes report. Op cit.
51 Ibid.
52 Ibid.
53 Ibid.
54 AgeUK (2021) Digital inclusion and older people – how have things changed in a Covid-19 world? [PDF] AgeUK. Available at: www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/digital-inclusion-in-the-pandemic-final-march-2021.pdf [Accessed 2021].
55 Ofcom (2021) Adults' Media Use and Attitudes report. Op cit.
56 Lloyds Bank (2021) UK Consumer Digital Index 2021. Op cit.
57 See, for example: EY (2021) Understanding how platforms with video-sharing capabilities protect users from harmful content online. Available at www.assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1008128/EYUK-000140696_EY_Report_-_Web_Accessible_Publication_2.pdf [Accessed 12 May 2022].
58 See, for example: Zhang, X, Wu, Y and Liu, S (2019) Exploring short-form video application addiction: Socio-technical and attachment perspectives. Telematics and Informatics. Vol 42. Available at: www.doi.org/10.1016/j.tele.2019.101243 [Accessed 12 May 2022].
59 Good Things Foundation (nd) Fix the digital divide. [online] Available at: www.goodthingsfoundation.org/fix-the-digital-divide/ [Accessed 2021].
60 Department for Education (2021) Skills for jobs: lifelong learning for opportunity and growth. Op cit.

Ineffective skills infrastructure and lifelong learning system

Re-engaging adults with learning only solves part of the problem. Once learners have overcome the perceptions about themselves that have held them back from learning, come to the realisation that they need to develop their skills to progress or change career, identified finance options, and overcome the digital divide, they then face many challenges in finding a pathway and a course that works for them to take the next steps.

1 Poor quality of courses for adult learners.

Our interviewees referred to the major disparities in funding that providers of vocational training and further education face compared with higher education, which has also been pointed out by the Social Mobility Select Committee[61] and most recently in the Augar Review.[62] They explain that this is a divide that has grown over the past 20 years and led to less value being placed on qualifications attained outside of a university setting – whereby higher education is often associated with ambition and aspiration.[63] As a result, high levels of competition from learning providers to increase their market penetration create disincentives for collaboration. Rather than different providers playing to their strengths and offering high quality courses in a specific area, the quality of many courses suffers as providers look to maximise reach.

2 Key stakeholders across the system have fundamentally different responses to the skills that are in demand.

What emerged from our interviews is that individuals, the government (local and national) and employers are almost never in equilibrium, which leads to poor coordination of supply and demand of skills. Many places in the UK therefore become trapped in a 'low skilled equilibrium', defined as a situation where both the demand and supply of skills are low.[64] This in turn leads to low productivity and wages. The system fails to deliver basic skills at scale, including core employability skills needed to thrive at work. The scale of this problem is perhaps best shown through the lack of core digital skills across the UK.[65]

> Individuals, the state (local and national) and employers all have fundamentally different answers, grounded in different motivations, to the question 'what skills do we need?' These stakeholders are rarely in equilibrium. *Interviewee*

3 Limited and restricted investment from employers.

Interviewees stressed the limited and restricted investment from employers in lifelong learning. Where in-work training is provided, it's often unequal between and within businesses, with low paid, low qualified workers less likely to have

61 Social Mobility Select Committee (2016) Overlooked and left behind: improving the transition from school to work for the majority of young people. HL Paper 120. Available at: www.publications.parliament.uk/pa/ld201516/ldselect/ldsocmob/120/12002.htm [Accessed 12 May 2022]. For more recent research see, for example, Britton et al. (2020) 2020 annual report on education spending in England. Institute for Fiscal Studies. Available at: www.ifs.org.uk/publications/15150 [Accessed 12 May 2022]

62 Augar, P (2019) Independent panel report: post-18 review of education and funding. Department for Education. Available at: www.gov.uk/government/publications/post-18-review-of-education-and-funding-independent-panel-report [Accessed 12 May 2022].

63 Cox, P (2021) Further and higher education; better together. [online] Available at: www.fenews.co.uk/exclusive/further-and-higher-education-better-together/ [Accessed 2021].

64 OECD (2014) Job creation and local economic development. [PDF] OECD. Available at: www.read.oecd-ilibrary.org/industry-and-services/job-creation-and-local-economic-development/escaping-the-low-skills-equilibrium-trap_9789264215009-8-en#page2 [Accessed 2021].

65 See, for example, Industrial Strategy Council (2019) UK Skills Mismatch in 2030. Available at: industrialstrategycouncil.org/sites/default/files/UK%20Skills%20Mismatch%202030%20-%20Research%20Paper.pdf [Accessed 12 May 2022].

opportunities to develop their skills. SMEs in particular face barriers which prevent many of them from increasing investment in training. Those in self-employment are also less likely to participate in adult learning compared with employees, as they don't receive any employer contributions. While a survey carried out by the CBI in 2021 has found that over half (53 percent) of the 252 businesses surveyed are considering increasing their investment in training and development over the course of this year,[66] latest research by the Learning and Work Institute shows training spending per employee in the UK has declined in real terms by 28 percent since 2005, and the share of employees receiving training at work has also fallen by 14 percent during this period.[67] Additionally, there is a lack of flexibility in how companies can use the funding available to them to support upskilling through the Apprenticeship Levy,[68] for example, pre-apprenticeship training or some wage costs of apprenticeships may not be covered by the Levy.[69]

4 **Limited quality and openness of labour market data for careers advice and information.**

What emerged from interviews is that data on courses available to adults in the UK is very limited. This creates major challenges for different actors within the lifelong learning ecosystem: learners looking to reskill are making decisions with limited information and guidance, and learning providers often struggle to reach the users that would most benefit from their training. Limited LMI is a theme that came across significantly in recent research carried out by Policy Connect which shows that some stakeholders in the CIAG system in England consider LMI data often lacking details.[70] This particularly applies at the local level, making it difficult to offer accurate information and advice about careers and training. While real-time labour market information for all (LMI for All) is being piloted to improve its accuracy, job trends are relying on historical data, which can become particularly dated when the labour market changes at a rapid pace.[71]

5 **Ineffective services to help people transition through different careers.**

Lifelong learning is a complex issue, with responsibilities split across different parts of government. Interviewees emphasised that responsibilities for lifelong learning are distributed across several government departments. People out of work connect to the Jobcentre, part of the DWP, CIAG can be accessed through the National Careers Service, ministered by the DfE, responsibilities for improving digital skills is held by the Department for Digital, Culture, Media & Sport (DCMS). This has often led to a frequently changing policy environment with competing departmental priorities leading to poor implementation of public service interventions that are aimed at supporting lifelong learning. In the early 2000s, the Labour government's attempt to introduce Individual Learning Accounts failed as the system was poorly planned and open to fraud by a few unscrupulous registered learning providers that were abusing the system.[72] More recently the failure of the National Retraining Scheme, which was launched in 2017 but disbanded after initial pilots and the low take-up of the Kickstart Scheme, show that public service interventions are often failing to deliver maximum value to learners. This is exacerbated by limited funding for services and short-term prioritisation of getting people into jobs over long-term careers.

> Disconnected system between welfare support through DWP and education provision through DfE.
> *Blueprinting workshop participant*

66 Confederation of British Industry (CBI) and Birkbeck (2021) Skills for an inclusive economy. [PDF] CBI and Birkbeck. Available at: www.cbi.org.uk/media/7020/12684_tess_-survey_2021.pdf [Accessed 2021]

67 Evans, S. (2022) Raising the bar: increasing employer investment in skills. [PDF] Leicester: Learning and Work Institute. Available at: www.learningandwork.org.uk/resources/research-and-reports/raising-the-bar-increasing-employer-investment-in-skills/ [Accessed 5 May 2022]

68 Confederation of British Industry (CBI) and Birkbeck (2021) Skills for an inclusive economy. Op cit. And Evans, S. (2022) Raising the bar: increasing employer investment in skills. Op cit.

69 Ibid.

70 Policy Connect (nd) Transition to Ambition: Navigating the careers maze. Op cit.

71 Ibid.

72 National Audit Office (NAO) (2002) Individual learning accounts. [PDF] London: NAO. Available at: www.nao.org.uk/report/individual-learning-accounts/ [Accessed 2021].

Box 6: Emerging practice: improving the skills infrastructure and lifelong learning system

The introduction of the Apprenticeship Levy in 2017 was intended to create long-term sustainable funding for apprenticeships and to give employers more control to provide their staff with a range of training opportunities. However, the lack of flexibility in the levy is creating barriers to businesses investing in other forms of training such as modular courses and on the job learning that might be better placed to reskill or upskill employees. Many employers and actors within the system are calling for a more flexible approach to the levy, which gives employers more choice around how they invest in upskilling[73]

Given the declining employer spending on adult learning in real terms,[74] further lack of incentives for employers to invest in skills can directly and indirectly discourage employees from taking up learning opportunities and enhancing their skills. Increasing funding alone is not enough and some leading employers recognise this and are already accompanying increased spending on training to a cohesive approach to reskilling.[75] Initiatives that increasingly link economic development with skills are needed, eg the Skills for Jobs White Paper but greater cross-sectoral, cross-institutional, and cross-departmental collaboration is critical to maximise impact and equity.

Box 6: International case studies – effective skills infrastructure

Finland. Finland is at the forefront of lifelong learning and digital skills promotions in Europe. Skills creation is accelerated through effective institutional partnerships, enabled by high levels of digital skills and digital public services,[76] with people being able to reskill and/or upskill through the widespread use of Mass Open Online Courses across sectors and levels free of charge.[77] While a great part of the success in Finland's skills infrastructure is the coordination and collaboration among stakeholders, forming the National Lifelong Guidance Working Group,[78] a key aspect to job creation, welfare and growth is the widespread digital transformation of industries. Additionally, career information, advice and guidance are recognised as a citizen's right in national legislation.[79]

Denmark (on reskilling). Denmark's 'flexicurity' employment system is a great example of a shared model for upskilling and reskilling. The model comprises high mobility between jobs with a comprehensive income safety net for the unemployed and an active

labour market policy. Since its launch in the 1990s, the unemployed receive up to 90 percent of their previous salary (paid up to a daily cap) for a two-year period on the condition that the person engages with retraining activities and/or explores entrepreneurial options or jobs in other cities. While the process of hiring and firing employees is quite easy for employers, many workers (20-30 percent) have been found to take advantage of the system and actively leave their jobs to look for reskilling opportunities.[80] A key enabler to the model is the 'centralised decentralisation' of labour market policies, whereby labour market agreements are negotiated between employers and trade unions on an industry-by-industry basis providing great adaptability to rapid-changes in the market.[81] Additionally, the national skills anticipation systems use a wide range of diverse data to develop detailed information on job and skills trends. This includes skills forecasting, skills assessments, skills foresights, and employer surveys.[82]

73 Department for Education, Milton, A (2019) Key facts you should know about the apprenticeship levy. [online] Available at: www.gov.uk/government/news/key-facts-you-should-know-about-the-apprenticeship-levy [Accessed 2021]. See also, Evans, S. (2022) Raising the bar: increasing employer investment in skills. Op cit.

74 Evans, S. (2022) Raising the bar: increasing employer investment in skills. [PDF] Leicester: Learning and Work Institute. Available at: www.learningandwork.org.uk/resources/research-and-reports/raising-the-bar-increasing-employer-investment-in-skills/ [Accessed 5 May 2022]

75 Confederation of British Industry (CBI) (2020) Learning for life – funding a world-class adult education system. Op cit.

76 Business Finland (nd) Digital Finland framework. [PDF] Business Finland. Available at: www.businessfinland.fi/globalassets/julkaisut/digital-finland-framework.pdf [Accessed 2021].

77 Ibid.

78 Vuorinen, R (2021) Inventory of lifelong guidance systems and practices – Finland. [PDF] European Centre for the Development of Vocational Training (Cedefop) Available at: www.cedefop.europa.eu/en/country-reports/inventory-lifelong-guidance-systems-and-practices-finland-1 [Accessed 2021].

79 Ibid.

80 World Economic Forum (WEF) (2021) Upskilling for shared prosperity. [PDF] WEF. Available at: www.pwc.com/gx/en/issues/upskilling/shared-prosperity/upskilling_for_shared_prosperity_final.pdf [Accessed 2021].

81 BNP Paribas (2017) Ins-and-outs of the Danish flexicurity model. [PDF] BNP Paribas. Available at: www.economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=30102 [Accessed 2021].

82 Gratton, L (2017) Who's building the infrastructure for lifelong learning? [PDF] MITSloan. Available at: www.sloanreview.mit.edu/article/whos-building-the-infrastructure-for-lifelong-learning/ [Accessed 2021].

Barriers to digital innovation and ineffective procurement practices

Digital innovations, to have a major impact, need to be scaled and integrated within a wider system that enables everyone to have these opportunities. What emerged from our interviews with digital innovators is that there are significant barriers for them to develop and scale products when working in partnership with the government. These barriers pose a challenge to public services in harnessing digital innovation.

1 Siloed commissioning practices create barriers for innovators to develop effective solutions.

What emerged from our interviews is that the commissioning of digital platforms often comes from a single government department when the needs, opportunities and requirements for cross-sector and cross-agency collaboration are essential for lifelong learning services. There isn't a single problem owner in this space, so traditional procurement and commissioning processes are often ineffective, leading to sub-optimal solutions. As pointed out by the OECD in research conducted on innovation in the public sector, a requisite for managing innovative practices is collaboration within and across organisations and sectors.[83]

> We've been through tendering processes with DWP, DCMS, DfE, [and] there is a real problem of ownership. We need to rationalise the number of bodies involved and provide a clear mandate. *Interviewee*

2 Procurement policies, services' standards and frameworks can be hard to navigate and increase barriers to commissioning.

Interviewees and workshop participants stressed the high levels of resources that are committed to procurement bids often have low success rates. Partners explained that this can be unsustainable for small innovative organisations who are often forced to partner with larger organisations that have access to public services. The government also holds the key to distribution, with public services such as the National Careers Service or Jobcentre Plus being the first touch point for citizens. Current practices are not optimal for either the innovator or quality of public services.

> Frameworks aimed to facilitate commissioning innovations, like the Dynamic Purchasing System (DPS), specifically the one on artificial intelligence, can be hard to navigate to young organisations. Social Innovators might be missing a lot of opportunities coming from the public sector or be discouraged to explore them. *Blueprinting workshop participant*

83 OECD (2014) Innovating the public sector: from ideas to impact. [PDF] OECD. Available at: www.oecd.org/innovating-the-public-sector/Background-report.pdf [Accessed 2021].

3 **Even in instances where a proof of concept has been demonstrated, innovators face major barriers to scaling services.**

One of the design flaws identified from our interviews and conversations with partners is that the scaling process is not identified from the onset and it's hard to bolt this on at the end of a project - for example it can be challenging to find the budget required and find champions within government. This can create very long cycles to take a product from ideation to scale, and can be unsustainable for small innovative organisations to maintain. They are often forced to partner with larger organisations which have access to public services. This is not optimal for the development of the innovating organisation or in delivering positive outcomes for the delivery of the public service.

4 **Limited quality and openness of labour market data for innovators to work with.**

Partners, alongside other interviewees, emphasised the limited access to labour market data that software developers face, which could be used to create informative and engaging platforms or digital content. As previously pointed out, job trends can become particularly dated in a rapid-changing labour market as they rely on historical data.[84] This can create significant barriers to innovators for developing context-dependant solutions.

5 **Challenges competing with the major platforms.**

Digital platforms create a way to reach learners at an unprecedented scale, opening up opportunities for digital innovation to transform how learning is delivered and consumed. However, what emerged from interviewees and agreed by many workshop participants, the digital model of learning delivery is monopolised by the major platforms who have enormous direct reach. This blocks innovation from content creators, and it can be challenging for smaller learning providers to achieve sustainable business models as revenues flow to the major platforms. There are also limited options for financing the development of innovative organisations to build, test, grow and scale up impactful platforms.

> The major digital platforms such as YouTube and TikTok monopolise the market and Google capture most of the income. It's extremely challenging for content creators who can't achieve sustainable business models on these. *Interviewee*

84 Policy Connect (nd) Transition to Ambition: Navigating the careers maze. Op cit.

Box 4: Emerging practice: enhancing services by supporting digital innovation

LMI for All is an online data portal funded by the Department for Education. It brings together existing national sources of high-quality labour market information that can inform people's choices about their careers.[85] This online portal pulls together information from key data sets including Office for National Statistics (ONS), the Department for Education and Higher Education Statistics Agency (HESA) and makes them publicly available for free through a single access point. Data is made available under an open government licence, meaning that individuals and organisations can use the data for any purpose, including commercial use.

The purpose here is not to provide data that is useful directly for the end user, it is to enable talented software developers to extract the labour market data and use it to create informative and engaging platforms or digital content. Since its creation in 2013, LMI for All has been used by a wide range of careers and education providers in their websites and programmes. For example, Pathways uses its data sets to highlight progression routes for specific careers which can then be embedded on course landing pages to help the learner understand how the course can help them progress in their career.[86]

One key intervention to improve processes and create a more fertile environment for innovation was the launch of **Spark** in 2019, a new marketplace for technology innovation, which provides government with an open and more agile approach to deal with emerging technologies and their suppliers.[87]

The government also has ambitions to increase the challenge-based procurement methods and expand on the impact that has been achieved through the **GovTech Catalyst**.[88] This is a positive development, but challenge-based procurements often involve very detailed specifications that constrain innovation which often leads to solutions that do not meet the problem. The process needs to allow for agile iteration that enable innovators to adapt as their understanding of the problem develops and the solutions are tested. Challenge-based procurement also needs to be followed by clear scale-up mechanisms for the winner.

A good example of public-private collaboration to develop public services by supporting digital innovation is the DWP's collaboration with Connectr through the Get into Work initiative, which connects industry experts to young people, supporting them into employment through an innovative mentoring platform. By identifying impactful solutions in the private sector to test and scale alongside existing services such as the Jobcentre Plus, in particular those like Connectr that operate as social enterprises, can lead to improved services for lifelong learners and increased efficiency for government resources and funding.

85 LMI For All (nd) About LMI For All. [online] Available at: www.lmiforall.org.uk/about-lmi-for-all [Accessed 2021].

86 Career Pathways (nd) Promote your college courses by linking them to careers. [online] Available at: www.career-pathways.co.uk [Accessed 2021].

87 Crown Commercial Service (2019) Spark DPS. [online] Available at: www.crowncommercial.gov.uk/agreements/RM6094 [Accessed 01 July 2021].

88 GOV.UK (2018) GovTech catalyst. [online] Available at: www.gov.uk/government/collections/govtech-catalyst-information [Accessed 2021].
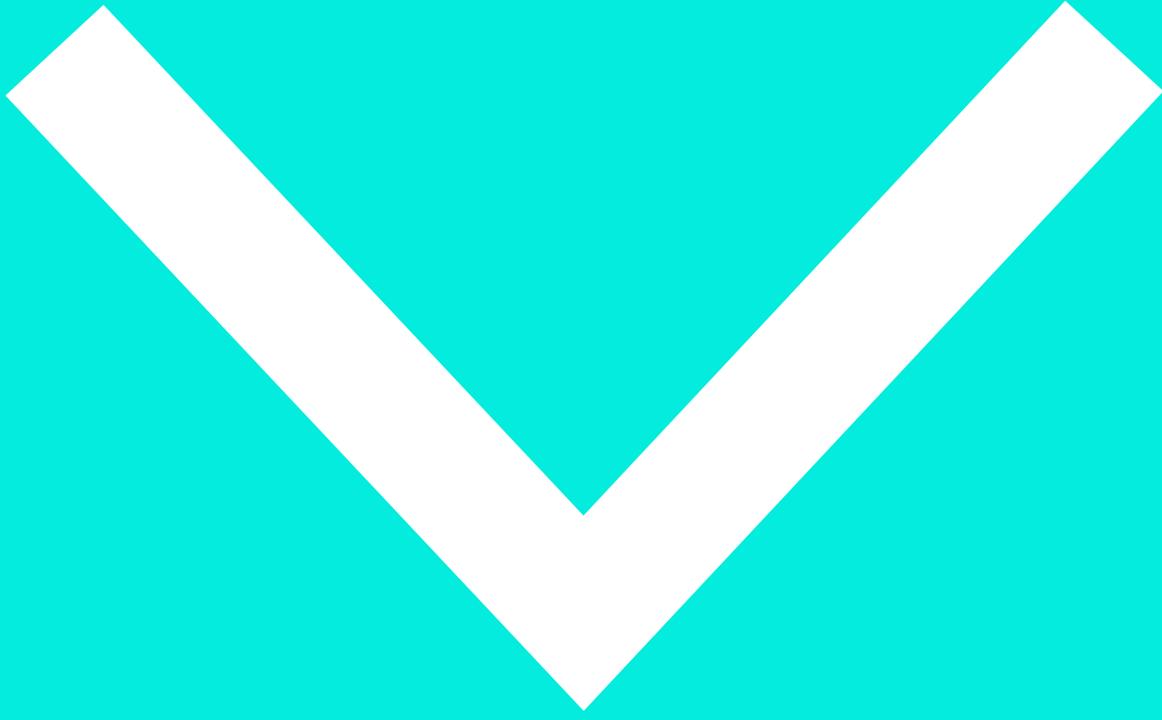
RECOMMENDATIONS FOR POLICYMAKERS

Chapter 5

Recommendations

We identify three key policy areas where interventions are required to unleash the power of digital innovations in lifelong learning to promote economic security, social equity and individual wellbeing.

Recommendations for lifelong learning policy and provision

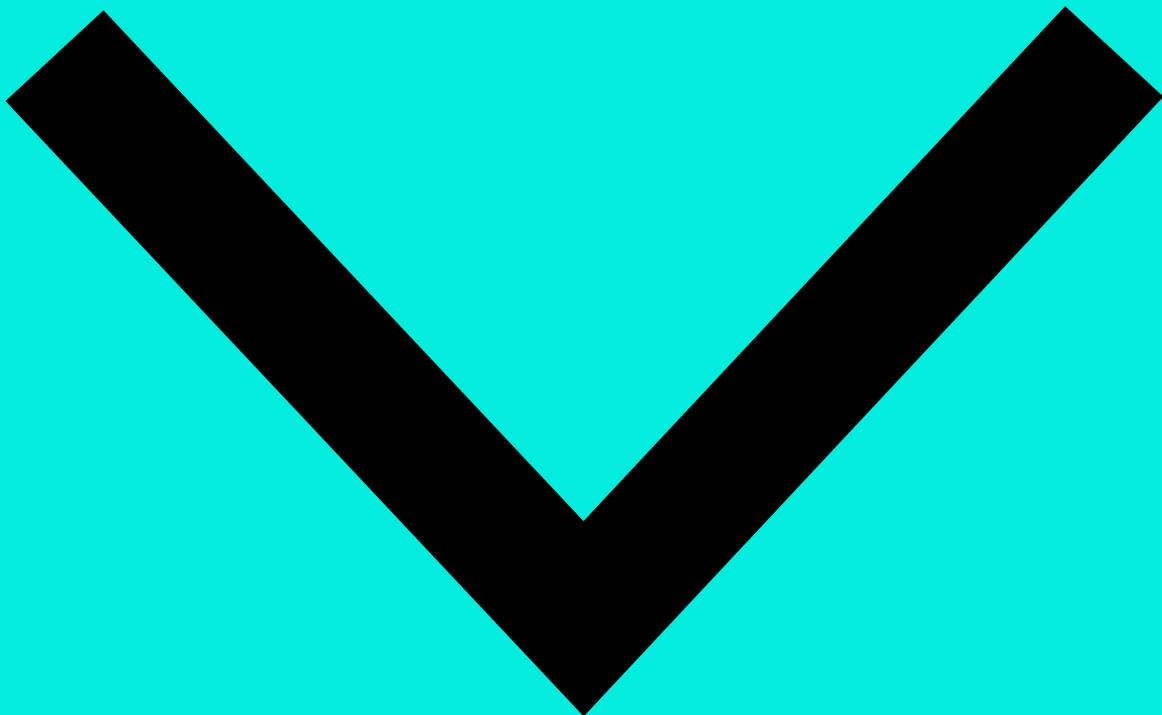**1** A universal service for job transitions and lifelong learning should be developed to match people to new job opportunities, and source high quality training opportunities in areas of future demand in the local labour market. **This should host an online portal that includes:**

— **A centralised training database** which provides a taxonomy of the skills and capabilities that learners can expect to develop when completing a training course.

— **Personal Learning Accounts** that accumulate training credits and rights over time and are portable from one employer or employment status to another, held in an online account that is managed by the individual.

— **A skills database** which makes data on local jobs and skills more available so that people can find information about the most in-demand careers in their areas or sectors of interest, as well as the skills they need to improve their employability.

— **Skills passports** that provide learners with a way to track the development of their skills over their working lives. This could include digital skills badges, credits, and micro-credentials. This would be beneficial for both individuals and employers to understand skills gaps and identify training needs.

2 The Department for Education should **review the funding and delivery of the National Careers Service platform.** Funding should be extended to include support for all adults rather than limiting to key target groups. As part of their innovation strategy, DfE should **identify which elements of the delivery would be better served by collaborating with social innovators.**

3 BEIS, DfE and other partners should **work together to pilot Personal Learning Accounts in a specific sector** to evaluate their impacts on participation in lifelong learning. Digital platforms should be involved in pilots to help individuals navigate career and training options. If successful **BEIS and DfE should look to scale Personal Learning Accounts through future industrial strategy sector deals that develop skills frameworks.**

4 Reform of the Apprenticeship Levy into a more flexible Skills and Training Levy that will support higher levels of investment in training and help fund Personal Learning Accounts.[89]

89 Confederation of British Industry (CBI) (2020) Learning for life
  – funding a world-class adult education system. Op cit.

Recommendations to support digital innovation and delivery

1 The government should seek to **reduce procurement barriers and avoid spending public funds duplicating innovations that already exist**, and instead focus on **creating an enabling environment for innovators** and prioritising support and investment for breakthrough innovations to scale their impact.

2 **DfE and DWP should continuously engage with a wide range of stakeholders in the lifelong learning ecosystem to better understand the data needs and seek to ensure that relevant data is available to software developers.** As the government expands and improves the UK's skills infrastructure, data should be made available as openly as possible using open government licences.

3 The government should **build experimental spaces for lifelong learning innovation**, for instance by creating user groups to test prototypes, or by encouraging experience sharing with industry experts. This could include the **development of sandboxes**, where lifelong learning innovations can be tested in a controlled environment, with financial backing, so that more information about the impact of social innovations, and the technology that underpins them, can be observed and tested before wider regulation is adopted.

4 **Challenge prizes to support lifelong learning, such as the CareerTech Challenge Prize and GovTech Catalyst should be designed in a way that allows for agile iteration.** Challenges should focus on the problem that needs to be solved rather than providing a detailed specification at the outset. The problem needs to allow for agile iteration that enables innovators to adapt as their understanding of the problem develops and the solutions are tested. Challenge based procurement also needs to be followed by **clear scale-up mechanisms** for the winner to ensure the value from developing a promising innovation can be realised.

5 The government should **develop operational playbooks outlining how to successfully collaborate with a tech social innovation** that all administrations - central and local authorities - could use to increase their collaboration with social innovators. This could include issues such as how to run and scale a successful proof of concept, legal issues, how to project manage a social innovation internally, as well as a standard-ised legal framework for data sharing.

Box 5: Case study – using artificial intelligence (AI) at DWP to help job seekers find a career

The data science team at DWP have innovated and collaborated to develop two new services to utilise available technology and data.

The first service, a Skills Recommendation Engine, helps users make decisions about which skills to develop. It allows users to view job titles relevant to their current skills, as well as the average salary, demand and growth statistics for that career. This has the potential to help in situations such as parents returning to work or people who are contemplating reskilling themselves later in their careers. This is being assessed with a view to incorporating it into several citizen-facing services. The idea originally came from a DataJam hack event.

The second service, Examine a Place, is

a collaboration across three government departments and is designed to support local partners (eg mayoral combined authorities) who have an influential role in local skills provision. The aim is to give these partners access to a snapshot of skills and roles, alongside a view of increasing or decreasing employer demand, for areas across England. This is to help them know where to target investment in skills

provision. Over time, it will also help see if that skills provision is working or not.

DWP's work demonstrates how the use of a new technology to process existing data can produce a tailored service for the user and quick cross-government collaboration. DWP is now working in partnership with DCMS and DfE to use

Recommendations to ensure inclusive and accessible learning support

1 Underpinning these recommendations, the government must **increase the speed of its national broadband roll out** ensuring no region is left behind. **The internet should be recognised as an essential utility** and clearer rules should be established to protect people from being disconnected.[90]

2 Building on the learner personas developed by the RSA (forthcoming publication), the DfE and BEIS should **conduct an updated segmentation on adult learners in the UK to** understand the inclusion and accessibility challenges faced by learners in an increasingly digital society.

3 **Raising awareness of digital tools that support lifelong learning** such as the National Careers Service and Digital Skill Entitlement. These should be **actively promoted by local authorities and community organisations,** through both digital and non-digital channels..

4 The government should incentivise digital platforms to **co-design solutions with people with lived experience,** design thinkers, digital inclusion and industry innovators **that ensure lifelong learning innovations are designed with digital inclusion at their core.**

5 Building on the successful initiatives implemented by local authorities during the pandemic to improve digital access and inclusion, **every local authority should have a digital inclusion strategy** that ensures **all residents can access a public space to get online and get support with improving their digital skills and accessing lifelong learning opportunities.** The impact of initiatives should be measured, and best practice shared across the UK.

"Digital transformation is not simply about hardware or software; it is about adopting a new mindset that fully embraces cognitive diversity, not as a siloed issue but as part of a larger digital ecosystem. Only by working together can we fully integrate radical inclusion and ensure that everyone has a voice in our collective digital future".[91]

International Training Centre of the ILO

90 Good Things Foundation (2020) Blueprint for a 100% digitally included UK. [PDF] Good Things Foundation. Available at: www.goodthingsfoundation.org/wp-content/uploads/2021/01/blueprint-for-a-100-digitally-included-uk-0.pdf [Accessed 2021].

91 International Training Centre of the ILO (ITCILO) (2021) Digital inclusion in adult learning – practices and recommendations. [PDF] Turin: ITCILO. Available at: www.itcilo.org/sites/default/files/2021-04/Digital%20Inclusion%20publication_Final_0.pdf [Accessed 2021].

Spot opportunities
- workshop ideas

Figure 5:

How might we...

incentivise employers to invest in lifelong learning?

if we were in **Central government** and we...

only had a day?
We might...

could see the future?
We might...

encourage employers to talk to one another about the benefits and return on investment (ROI) of lifelong learning.

procure contracts that can upskill and incentivise employers.

create career pathways that straddle multiple employers and deliver benefits across the board (field building).

cut corporation tax to zero for employers investing £x on lifelong learning.

refund the union model of learning in the workplace that was defunded in March 2021.

realise that the shift to digital needs to happen now (yesterday) – the future is not a long time away.

help people work with assisted tech and automation through legislation around ethics of practice and workers' rights.

seek to understand what others have done and how they have incentivised employers to adopt it.

Recommendations for policymakers

Figure 6:

How might we...

enable innovators to work with government to scale effective solutions?

if we were in

Central government and we...

had £1bn?

We might...

accept that failure is part of the innovation process.

encourage ideation, collaboration, and open innovation.

create clear pathways to scale promising solutions that don't require going through traditional procurement pathways.

start by defining the values and principles of the service being designed or commissioned and not be prescriptive about solutions.

Figure 7:

How might we...

improve digital and data accessibility through infrastructutre, ubiquity, and affordability?

if we were a

Public education or employment service and we...

could engage anyone you wanted?

We might...

teach people digital skills or find other ways to provide a solution (eg using text messages rather than online) and use the tools that can increase reach.

create a zero rating for educational content by removing data costs and developing accessible mobile content.

recognise that place is a barrier to getting online and make wifi a public utility.

engage with organisations that can help build a shared digital infrastructure across education institutions and communities.

do community outreach and go to people directly through existing services (eg foodbanks) to see what peoples needs are.
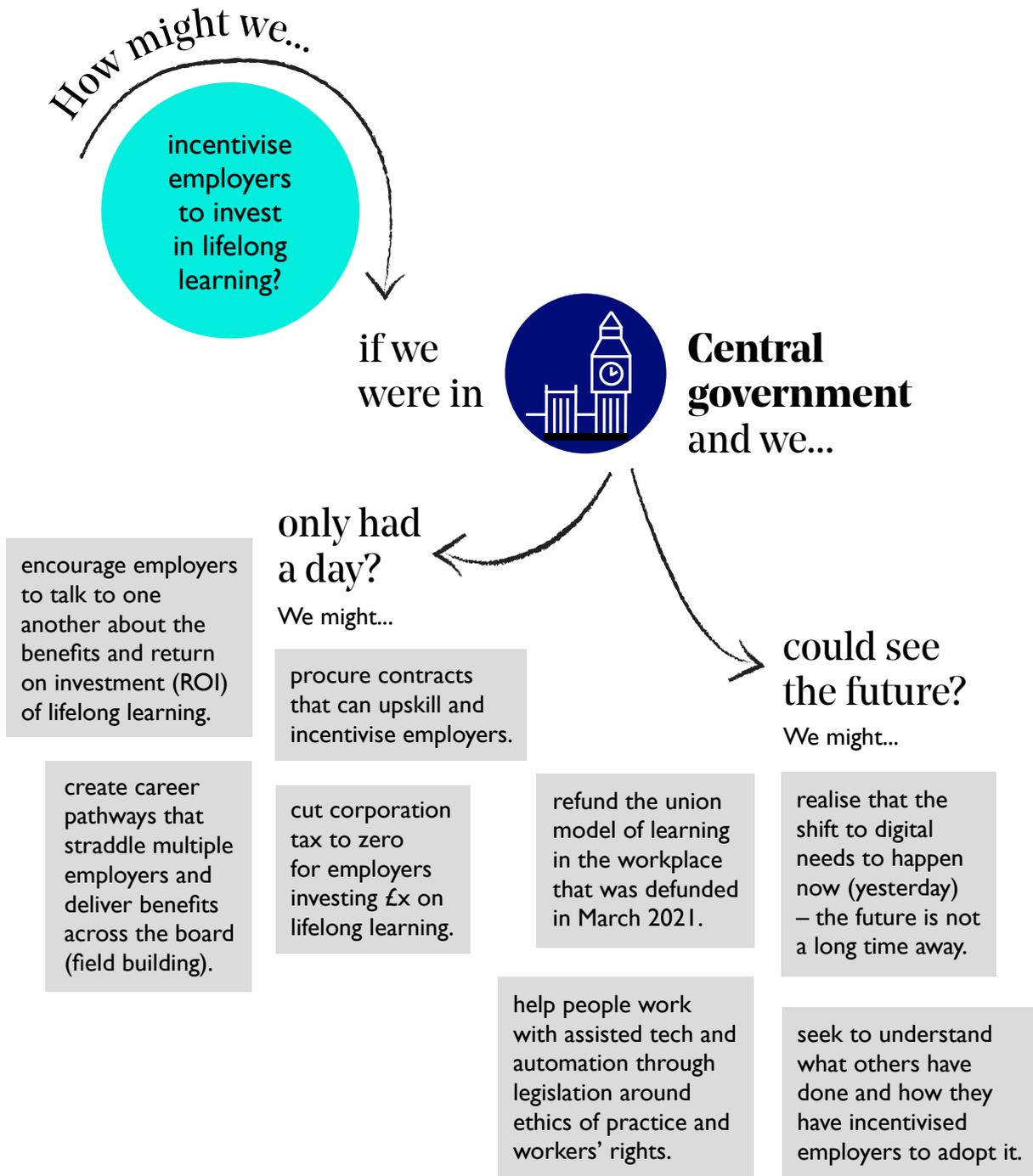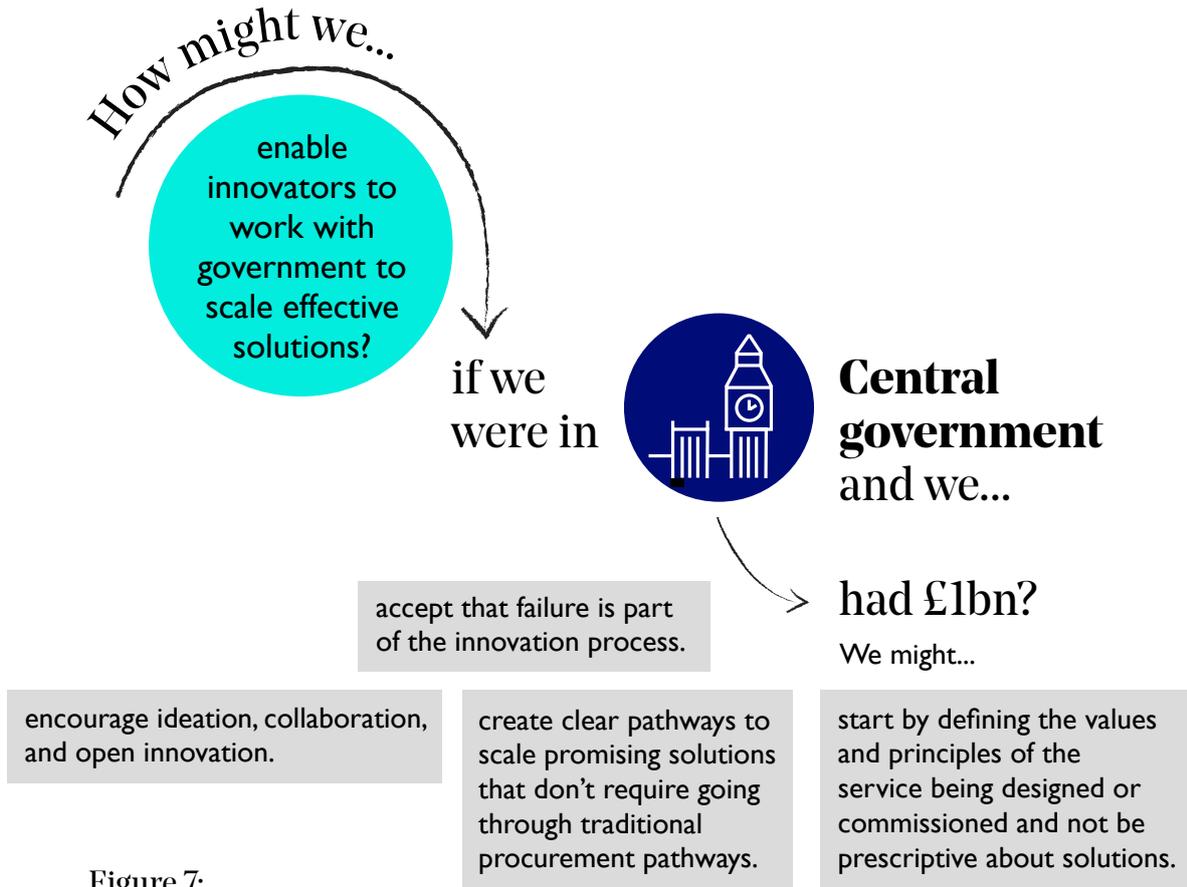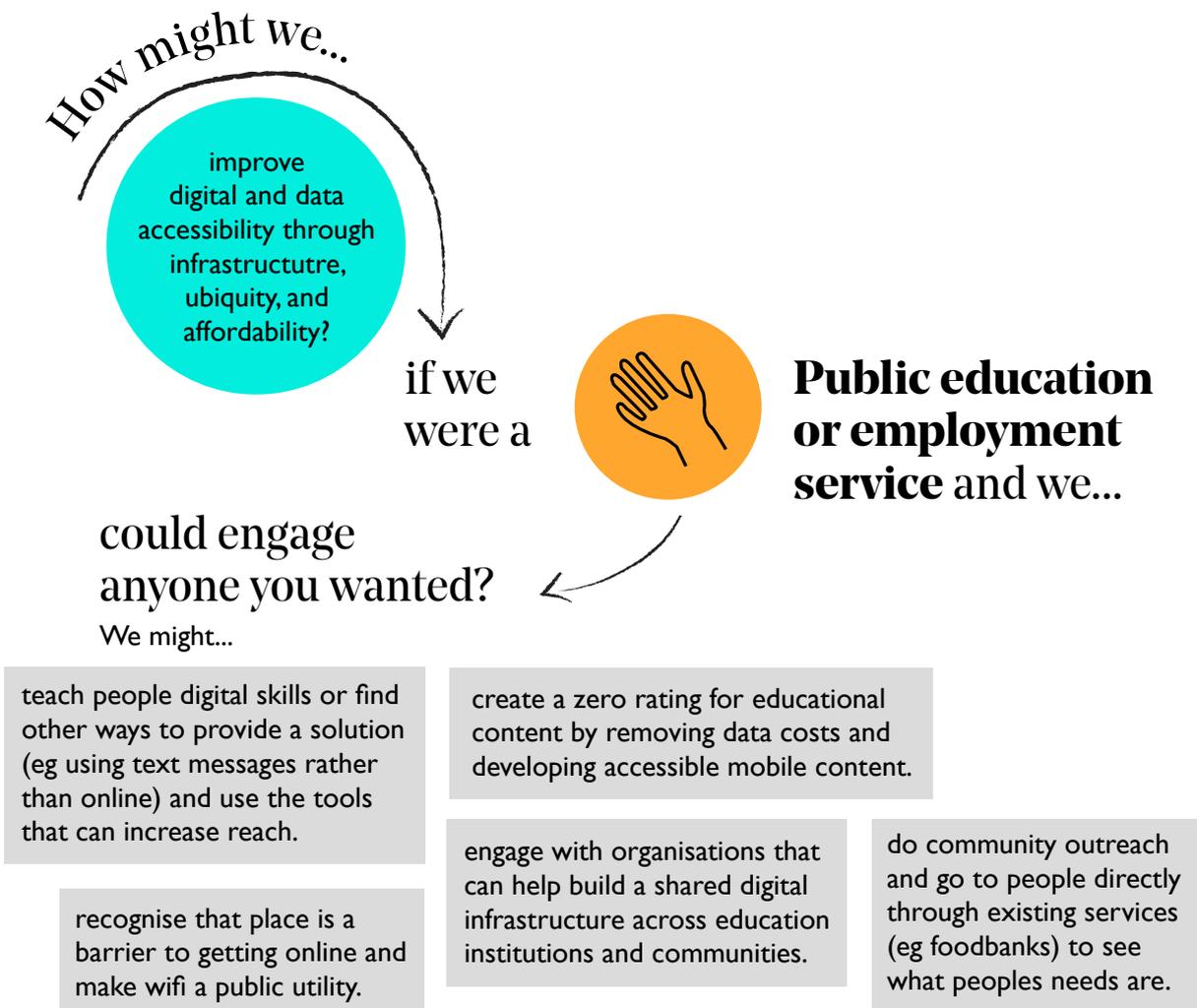
APPENDICES

Chapter 6

Appendix 1:
Micro innovations

Online learning

Massively Open Online Courses and other tools that offer learners a flexible, modular approach to upskilling and reskilling.

Innovation	Description	Website
Digital Mums	Online learning for flexible roles in social media for returning mothers.	https://digitalmums.com/
GI-CAST	Gamified approach to learning cyber security skills for precarious workers.	https://www.gmb.org.uk/lifelong-learning/gi-cast-cyber-security-course
Citizen Literacy	A mobile app that uses AI accent recognition to help individuals with low-literacy skills in building confidence in learning and encourage them to take up more formal, in-person learning opportunities.	https://citizenliteracy.com/
Learnerbly	Supports organisations to have progressive learning culture that empowers their people to own their development.	https://www.learnerbly.com/
Kinderly	Kinderly offers engaging bitesized learning courses for early years practitioners that are CPD accredited through interactive activities, animations, and videos.	https://kinderly.co.uk/
CuppaCare	The British mobile microlearning app CuppaCare offers care workers high-quality learning and guidance tools. Alongside self-assessment activities workers can learn through the programs at their own pace as training refreshers.	https://www.cuppacare.com/
The School of Life	Global learning platform with courses on a range of personal and professional skills to lead a more fulfilled life.	https://www.theschooloflife.com/
iDEA	iDEA helps users develop digital, enterprise and employability skills for free through a series of online challenges.	https://idea.org.uk/
Learning Labs	e-learning for education and the workplace covering mental wellbeing, assistive technology, accessibility, study skills, career skills and more.	https://www.learninglabs.co/

Peer learning networks

Programmes where people can connect
to support each other to stay motivated
through mentoring and peer support.

Innovation	Description	Website
Enrol Yourself, now Huddlecraft	A peer learning network platform that offers a blended approach to online learning to people who are mostly self-employed or part-time workers, who often have no access to learning and development budgets. The platform provides workers with a peer-to-peer exchange to build self-motivation in learning without the financial barriers related to formal educational paths.	https://www.enrolyourself.com/ https://www.huddlecraft.com/
elpha	A global online community of peers and mentors and job opportunities for women in tech.	https://elpha.com/
ViewVo	ViewVo helps professional explore short job shadowing opportunities.	https://viewvo.com/
CoachHub	A digital coaching provider, offering holistic people development at a global scale.	https://www.coachhub.com/en/

Technology bootcamps

Programmes that teach people digital skills
in an accelerated format and connect them
with employment opportunities.

Innovation	Description	Website
TechUP	An online retraining programme funded by the Institute of Coding for individuals who are under-represented in the technology sector.	https://techupwomen.org/
Jolt	An online only bootcamp with interactive group workshops led by industry experts.	https://www.jolt.io/
CodeYour-Future	Offering coding courses for refugees and disadvantaged groups.	https://codeyourfuture.io/
Teach the Nation to Code	A series of free, one-day interactive workshops designed to help people to develop core digital skills.	https://www.qa.com/about-qa/teach-the-nation-to-code/
General Assembly	Expert-led training in coding, data, design, digital marketing and more – offered to individuals and companies.	https://generalassemb.ly/
Makers Academy	Full-time courses to help people launch their career in the software engineering sector.	https://www.makers.tech/

Augmented learning

Augmented and virtual reality systems that
enhance the provision of both technical
and soft skills in the workplace.

Innovation	Description	Website
bodyswaps	Offering VR for soft skills.	https://bodyswaps.co/
Humanitarian Leadership Academy	Gamified learning opportunities and VR experiences for humanitarian employers.	https://www.humani-tarianleadershipacad-emy.org/
Game Academy	Leverages data from gaming profile; learning through gaming.	https://gameacademy.co/
myAccesshub	An e-learning and VR platform for workplace education on needs of employees with autism and other neurodiversities.	https://www.myac-cesshub.io/
How do I?	A platform that offers opportunities to individuals with learning disabilities to learn vocational skills on the job through accessible technologies. The organisation provides micro-learning experiences linked to people's work environment that are delivered via smart-phones, which utilise NFC-enabled stickers.	https://wearehowdoi.com/

Digital career coaching

Platforms that use new technologies to
offer workers personalised coaching and
labour market information.

Innovation	Description	Website
Yuno	Career matching testing and opportunities platform.	https://yuno.uk
FutureFit AI	FutureFit AI describes itself as 'the global positioning device' for career transitions. The AI technology developed is able to provide users with career path recommendations based on an assessment of their skills and real-time labour market data. The platform can highlight to workers gaps in their skills and suggest trainings. FutureFit AI also aims to help employers in reskilling workers at risk of redundancy for new roles inside or outside of the company.	https://www.futurefit.ai/
Bayes Impact	Developing a new platform to offer digital career coaching linking training to job opportunities.	https://www.bayesimpact.org/

PitchMe	By analysing a range of digital sources, PitchMe's algorithm identifies what skills a person has, what needs to be improved and what career opportunities are optimal for the existing skill-set.	https://pitchme.co/
GetMyFirstJob	GetMyFirstJob is an innovative web platform that improves the speed and quality of matching young people to the right apprenticeship. It works with employers and training providers to help them find apprentices in a time frame that works for them.	https://www.getmyfirstjob.co.uk/
CareerEar	CareerEar offers a community which connects career seekers with careers advice from experienced industry workers, employers and training providers.	https://www.careerear.co.uk/

Digital credentials and skills

New approaches to recognise and validate skills, including those developed through on-the-job and informal learning.

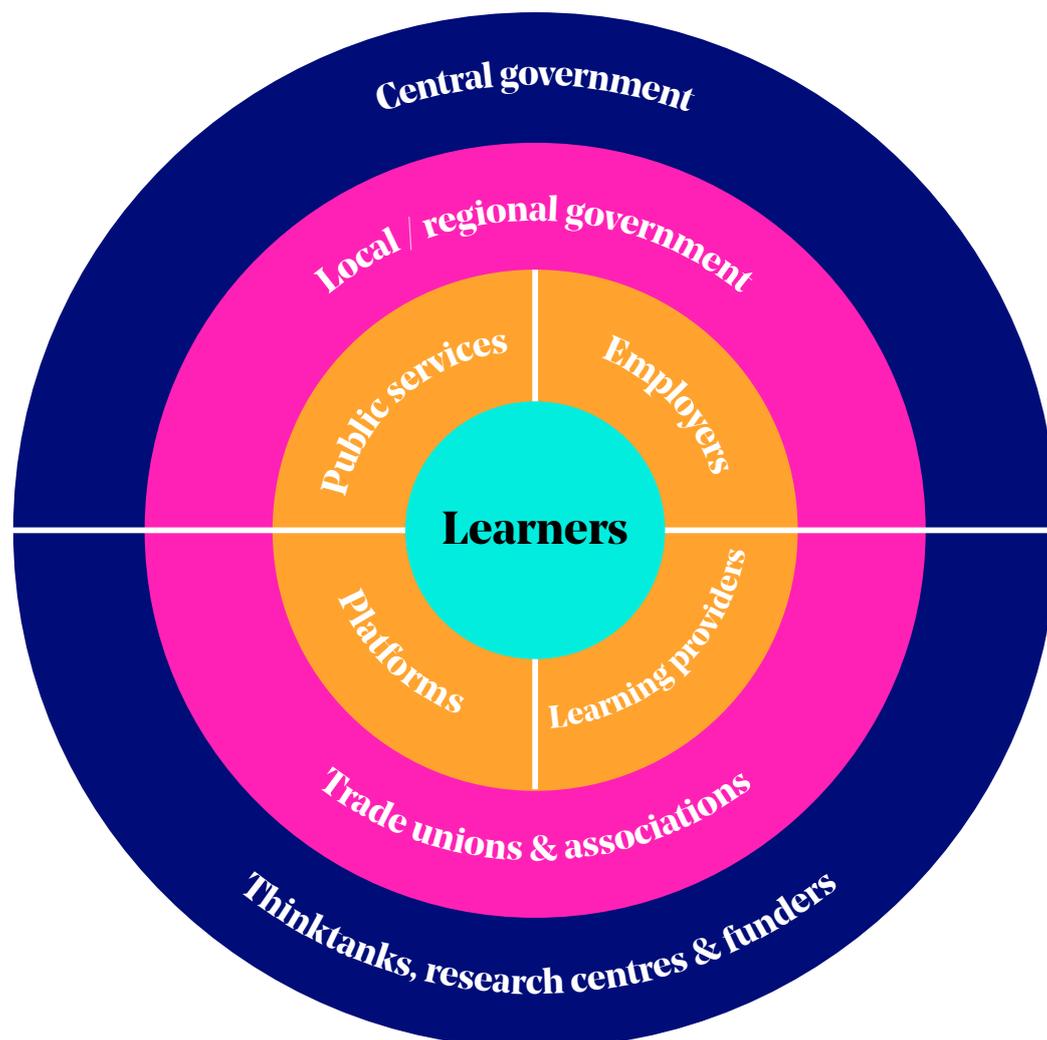| Innovation	Description	Website
Stay Nimble	Linking aptitudes, personal values and workplace preferences to occupations, skills and tasks.	https://staynimble.co.uk/
UpskillMe	A digital record of achievement.	https://upskillme.io/
Tendo	A technology company offering frontline workers in sectors such as retail and logistics a 'skills passport' to enable them to build and access a trusted, portable record of their skills and hours. The passport works on a two-way ledger, where data must be verified by both workers and managers. In so doing, it informs personalised training needs for employees and offers employers with a way to encourage learning and development.	https://tendo.com/
Cities of Learning	A digital platform to help people find new learning opportunities near them, letting learners transform what they've studied into new skills, qualifications and careers.	https://www.citiesoflearning.net/
FLOW	A specifically-designed framework to guide learners on a rewarding career pathway. Achievements are tracked in their FLOW skills passports.	https://www.flowlogisticsonline.co.uk/
Education and Training Foundation, EDS badges	Providing badges for online courses in essential digital skills.	https://enhance.etfoundation.co.uk/

Appendix 2:
Systems mapping

Our research identified three layers of system actors within the lifelong learning ecosystem for digital innovation that learners engage with in different ways and have different influence on the system.

Learning providers and pathways – engage most directly and frequently with the learner (eg learning providers and digital platforms – presented in the inner circle).

Individual influencers and support structures – influence the system and structures that learners engage with and have some direct engagement with learners (eg local government and trade unions – represented by the middle circle).

System influencers – don't engage directly with the learner. This group influences the system through research, funding or changes to the policy environment (eg central government and thinktanks – presented in the outer circle in blue).

Figure 8: Lifelong learning ecosystem for digital innovation

Central government
Local | regional government
Public services
Employers
Learners
Platforms
Learning providers
Trade unions & associations
Thinktanks, research centres & funders

	Learners	Everyone participates in some form of adult learning, from informal learning through digital platforms such as YouTube to accredited educational courses and apprenticeships. Learners encounter different challenges and opportunities, as explored throughout this report.
	Public services	Learners engage directly with public services supporting them to access career advice and training opportunities. These can be online, such as the National Careers Service, or in person touch points including the Jobcentre or more informally through housing associations and community spaces. Other services are delivered by local authorities.
	Platforms	Small nimble organisations offer services directly to learners to address a range of lifelong learning challenges. Examples include digital approaches to recognising skills and utilising labour market data to offer digital career coaching. Larger digital platforms such as YouTube and TikTok also have huge reach, mostly through informal learning.
	Employers	A key element of lifelong learning is training provided or funded by employers to enable their workforce to upskill or reskill. Employers therefore have a big impact on the lifelong learning ecosystem and the opportunities available to in-work learners.
	Learning providers	Learning providers deliver educational and vocational training courses. Understanding the options available to learners, the skills courses will help them develop, and practical issues such as cost and time commitment, is important to help learners navigate their lifelong learning journey.
	Local and regional government	In England 10 mayoral combined authorities have devolved responsibility for delivering the adult education budget, as do Scotland and Wales. All local authorities play a key role in shaping adult learning opportunities and creating access points in their localities.
	Trade unions and associations	Trade unions, sector bodies and associations play a key role in representing different parts of the ecosystem. The Association of School and College Leaders for example has a strong voice in the future of lifelong learning provision. All citizens can join a union to represent them on work related issues such as lifelong learning.
	Thinktanks, research centres and funders	Many thinktanks and research organisations have a focus on lifelong learning. The Universities Association for Lifelong Learning brings together specialist academic departments across the UK, while charities such as the RSA and the Learning and Work Institute have a focus on lifelong learning.
	Central government	National policies for lifelong learning are driven by different parts of government. For example, the Department for Education is responsible for adult education, the Department for Work and Pensions is responsible for in work progression and the Department for Digital, Culture, Media and Sport is responsible for digital skills and inclusion. Various APPG's and select committees across government also play an important role in influencing the agenda.

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