

Written evidence submitted by Nesta
August 2019

Executive summary

- **The future of work is going to be very different from today.** New technologies, global economics, and shifting demographics, means that 20% of the workforce are in jobs that are likely to shrink over the next ten years.¹
- To help prepare people for the future, we need a better understanding of the skills, abilities and knowledge that are going to be valued and important in the future.
- Today most adult skills training is provided by employers, which excludes many of the people who could benefit from retraining the most.
- **Nesta's research shows that there are possible effective alternative models for adults skills retraining.**
- The government should explore the potential of an online skills map for employers, individuals and policy makers. Nesta has produced a [prototype skills map](#) that can be used as a basis for further exploration, especially at regional level. **To identify the skills that are in demand in the labour market, the government should take steps to open up new sources of labour market data, such as job advertisements.**
- **The government should strengthen the evidence base for what works in adult learning**, including provision of career information, advice and guidance, online learning, as well as tackling barriers to individuals' motivation to learn.
- A consistent barrier to accessing training is lack of motivation, time and money. **The government should commission more research to find out how to motivate more people to retrain, and reduce barriers to accessing retraining.**
- Attempts at building an effective adult skills sector will be hampered without government taking a consistent, joined up, cross departmental approach. Nesta welcomes the new government's appointment of Jo Johnson as Science Minister in the Department for Business, Energy and Industrial Strategy, and the Department for Education. **The Government should appoint a similar cross-departmental minister for apprenticeships and skills.**

¹ Bakhshi, H., Downing, J., Osborne, M. and Schneider, P. (2017). The Future of Skills: Employment in 2030. London: Pearson and Nesta.

Introduction

1. Nesta is an innovation foundation. For us, innovation means turning bold ideas into reality. It also means changing lives for the better.
2. We tackle challenges through our unique combination of expertise, skills and funding. Our approach is practical and collaborative, driven by a rigorous use of evidence and data, emerging technology and the power of people.
3. We work in areas where there are big challenges facing society, from the frontiers of personalised healthcare to stretched public services and a fast-changing job market.
4. Nesta is based in the UK and supported by a financial endowment. We work with partners around the globe to bring bold ideas to life to change the world for good.

Question 1: What are the benefits of adult skills and lifelong learning (ASALL) for productivity and upskilling the workforce?

5. **Developing the bundles of skills, abilities, and knowledge that are most likely to be important in the future can reduce skills mismatches, boosting productivity and improving earnings mobility for workers. Nesta is developing more accurate and timely measures of regional skills mismatch using big data. These estimates can help policymakers spot skills mismatches earlier and address them through funding for adult skills provision.**
6. A skill mismatch is a discrepancy between skills that job seekers have and the skills that employers need. Evidence suggests that in recent years the UK has faced persistent skill mismatches (Department for Education, 2018). In 2017, UK employers struggled to fill 23% of vacancies (referred to as skills-shortage vacancies) due to a lack of skills, qualifications or experience among applicants.
7. Skill mismatches can hamper productivity, and ultimately are costly to the UK economy. According to OECD research, by reducing skill mismatches to OECD best practice levels, the UK economy could boost its productivity by 5% (McGowan and Andrews, 2015). The [Open University](#) estimated that skill shortages, which are one kind of skill mismatch, cost the UK £2bn a year in higher salaries, recruitment costs and temporary staffing bills (Open University, 2017).
8. As well as being costly to businesses, skill mismatches adversely affect earnings mobility for workers. The oversupply of low-skilled workers in many

regions of the UK has led to a proliferation of low-skill, high-turnover business models (Lee, Green and Sissons 2018). As a result of which, low skilled workers get 'stuck' in insecure, low paid jobs helping to explain the observed rise of in-work poverty. Medium-skilled workers also have limited opportunities for progression as the weak vocational system has failed to upskill them to meet the demands of local higher growth sectors ([Inclusive Growth Commission 2017](#)).

9. Despite the importance of this issue, there is a lack of timely and detailed information on skill mismatches in the UK. The best available estimates come from the Employer Skills Survey (Department for Education, 2018). While the survey is able to shed light on the causes of skill mismatches, and skill shortages in particular, it is only conducted once every two years and focuses on broad groups of skills.
10. Big data has the potential to provide more frequent and granular insights on skills. One such data source is online job adverts, which can offer a near real-time picture on skill demands. Job adverts may more accurately capture the skill needs of employers as the free text fields in adverts allow employers to exactly describe their needs, while skill surveys may force employers to select from a predefined list of skills.

These big data insights can help policymakers to:

11. **Standardise labour market frameworks and build data-driven frameworks that links skills, education and jobs.** We have been commissioned by the Office for National Statistics (ONS) to lead the labour market research arm of the Economic Statistics Centre of Excellence ([ESCoE](#)). As a part of our ESCoE work, we developed the first publicly available [data-driven taxonomy of skills](#) for the UK (Djumaliev and Sleeman, 2018). This taxonomy is now being used to power Google's [Profile Builder](#) tool which helps people make decisions around skills and training.
12. **Forecast tomorrow's labour markets and improve our understanding of how structural changes, such as automation, are affecting labour markets.** We have previously collaborated with Pearson and Oxford Martin School of Business on [Future of Skills: Employment in 2030](#) (Bakhshi, Downing, Osborne and Schneider, 2017), which combined expert judgment and machine learning to predict the outlook for each occupation in the UK and the US.
13. **Understand today's labour markets by providing new measures of labour market concepts, such as value of skills.** Through our work on skills taxonomy, we have also delivered the first ever estimates for the value of skills by analysing 40 million job adverts to find the fastest and slowest growing skill clusters.

Question 2: What are the benefits of ASALL for social justice, health and well-being?

- 14. We need to spread the innovation-led economy beyond the ‘vanguards’ where it is currently concentrated. This will require more workers to develop capability to innovate, and improving adult skills and promoting lifelong learning are fundamental to this shift. Broadening participation in the innovation-led economy is not only a way to improve productivity and wellbeing, but also to promote self-realisation through work that emphasises human capabilities.**
15. [Nesta argues](#) that to tackle declining productivity and growing inequality, we need to spread the innovation-led economy beyond the ‘vanguards’ where it is currently concentrated. We should see this as a challenge of spreading advanced production practices from leading-edge firms to other parts of the economy - similar to the way that the practices of Fordist manufacturing spread throughout the economy in the last century.
16. This shift will require more workers to develop a different order of skills: not only technical knowledge, but the capability to innovate - to imagine possibilities that do not yet exist. It will also require a different way of working, one that is characterised by a high degree of autonomy, relying on higher levels of trust and cooperation. This form of work is a way of realising human potential, since it gives a way to express capabilities that are uniquely human and cannot be replaced by machines.
17. In the UK, as in other advanced economies, we look to high-tech, innovation-led firms to drive economic growth and productivity growth. However, the most innovative, productive firms are concentrated in specific places, and the gaps between the most innovative regions and the rest are growing. In the UK, for example, investment in R&D per capita in London and the South East is over three times that of Wales. Meanwhile, the innovation workforce is dominated by particular demographic and social groups. Only 8% of people filing patents in the UK in 2015 were women (and the proportion has barely changed in the last 15 years). Just 15% of UK scientists are from working-class backgrounds, and less than [14% of AI researchers are female](#).
18. By excluding all but a narrow segment of the population from innovation jobs, we are denying the majority a chance to realise their full potential. In this way, broadening participation in the innovation-led economy is not only a way to improve productivity and wellbeing, but also to promote self-realisation through work that emphasises human skills.
19. Improving adult skills and promoting lifelong learning are fundamental if we are to spread the innovation-led economy and enable more people to

participate. [Recent research](#) has shown that in regions with high levels of routinised jobs - the 'left-behind' areas - investments in R&D tend to lead to a loss of manufacturing jobs and an increase in low-skilled, 'non-tradeable' jobs (such as in retail and hospitality). To mitigate the risk of widening inequalities, a proactive approach is needed so that people can benefit from structural changes to the economy. An example of such an approach is the [BioWork programme in North Carolina](#), which trains displaced workers to find jobs in the state's growing biotechnology sector. Importantly, this programme is based around strong partnerships between lifelong learning providers, employers, and economic policymakers. The BioWork course provides an institutionalised route to jobs in a new sector, and has successfully helped mid-career and displaced workers from a variety of educational and skills backgrounds to retrain.

20. This example also helps to demonstrate why it is important that funding for learning is not only attached to jobs. Currently, employers pay for the majority of adult learning. But when learning is tied to jobs, people in temporary or precarious work, and those who're unemployed, miss out. For an inclusive future of work people need to be able to access learning whatever their job situation.
21. Several proposals have recently been made for new forms of individual learning accounts (ILAs). Our recent rapid evidence review (to be published on 21st August) found that there isn't yet much strong evidence that they work - although a forthcoming OECD report is expected to conclude that ILAs can be an important, emerging approach to training interventions which help structure learning over a career. We think this model has a lot of potential, while more investment in research and evaluation is needed to understand how best to implement such accounts in order to reach those who will benefit most from such support. There is an opportunity to learn from other European countries which have already implemented ILAs.

Question 3: What role can local authorities/combined authority areas play in ASALL provision?

22. **Local authorities should open and link up labour market data to provide better granular guidance on in-demand skills for learning providers.**
23. Data is not being used to better connect people to jobs and skills. Many people struggle to navigate their way through a life of work - finding out how to get the right job, and sometimes any job; how and when to gain new skills; and how to cope with a labour market where jobs are constantly being created, changed and destroyed.

24. Nesta's work in using [online job adverts to map skills mismatches](#) is particularly relevant at regional level, as it also captures the locations of jobs, which allows the demand for skills to be mapped by granular geographic regions. (Djumalieva and Sleeman, August 2018) The ability to map regional skill needs is important as there is evidence of substantial differences between local economies (Haldane, 2019). The Centre for Progressive Policy found that among Local Enterprise Partnerships (LEPs) in England, the skill shortage rates for skilled trade roles varied from 26% in Cheshire and Warrington to 73% in the Black Country (Alldritt and Normal, 2018). It is likely therefore that the national picture of skill mismatches will be a poor proxy for any given region.
25. In light of the unique advantages of online job adverts, in our upcoming research for [Productivity Insights Network](#), we examine how adverts can be used to enhance the timeliness and granularity of existing statistics on skill mismatches. This research paper develops an alternative methodology for measuring skill mismatches. The methodology involves combining official labour market statistics with data on skill demands extracted from online job adverts. The aim is to provide a comprehensive analysis of skill mismatches across Great Britain.
26. Local authorities should support a labour market data commons for the public good that includes representation from government, industry, education and data managers. The commons will ensure that data sharing arrangements incentivise private data owners to share (some of) their data; funding is committed to the development and uptake of standardised taxonomies to use by national and local services.
27. Regional data analysis can also support understanding of specific vulnerable groups, and direct learning provision depending on their skill needs.

Question 4: To what extent is the range, balance and quality of formal and informal ASALL education adequate?

N/A

Question 5: Who currently participates in and benefits from lifelong learning?

28. **Too little ASALL education is designed to be appropriate and attractive for the people who could benefit most from it. Training should be designed around their needs.**
29. Learning new skills can help workers to adapt to changes in their jobs and smooth their transition into new roles, but those that need training the most are not getting it. The OECD ([Skills for a Digital World, 2016](#)) finds that "low-

and medium-skilled workers are the least likely to receive training, even though they may be facing the greatest risk of job loss". Research from the Social Mobility Commission found that about only 1 in 4 adults in the UK undertook job related training in the last three months in 2017. Almost half of people (49 per cent) from the lowest social grades had not undertaken any learning since they left school.²

30. SME employees, who are at a greater threat of job losses through firm closure, receive less training than workers in large firms. In 2017, 31 per cent of people in organisations employing 500 or more employees received job related training compared to 22 per cent of those with fewer than 50 employees.³ The OECD Employment Outlook 2019 finds that workers in non-standard contracts (self-employed, temporary and own-account workers) receive significantly less training than those in permanent contracts. This is particularly true for own-account workers - only 35% of own-account workers participate in training yearly compared with 57% of full-time permanent employees across OECD countries.⁴
31. To meet the evolving needs of the job market, workers, business and governments need to adapt to a culture of lifelong learning. Governments must provide citizens with high quality training opportunities. However, a well-designed skills policy or training service doesn't always translate into uptake. [Workers also need to feel motivated to learn new skills](#) and those who are most vulnerable to labour market changes are not always receptive or willing to re-skill. Uncovering what drives motivation to learn is a priority.
32. Nesta commissioned a rapid review of evidence (REA) from [CFE](#), a leading UK research and evaluation consultancy, to identify what motivates working adults to take part in and complete training in digital and digital-complementary skills. The REA is extensive, synthesising 65 core documents from a longlist of 285 relevant sources.
33. This review finds a number of situational and psychological barriers that are preventing vulnerable groups (and communities) from gaining the skills they need to be or stay employed. Those already in low paid work don't have time, motivation and money to train and those in temporary or precarious employment or who are unemployed miss out because training is usually provided by employers.

² [Social Mobility Commission, The adult skills gap: is falling investment in UK adults stalling social mobility?, 2019](#)

³ [Social Mobility Commission, The adult skills gap: is falling investment in UK adults stalling social mobility?, 2019](#) (using the Labour Force Survey (LFS) 2010 and 2017 July-September quarters)

⁴ [OECD Employment Outlook, 2019](#)

34. Skills provision and design of training needs to target the needs and motivations of the groups at-risk of job loss but less likely to participate in learning. Nesta is working with Department for Education to encourage the development of new technologies and methods that improve the accuracy, effectiveness and reach of careers guidance and enhance the impact of training. We are making an investment in evaluation to gather robust evidence for 'what works'.
35. Meanwhile, through our [FutureFit](#) programme, Nesta is designing, implementing and evaluating training programmes for workers at risk of job displacement due to automation in the Nordics and Benelux regions. As part of this work we will test approaches to improve the motivation of workers to learn new skills for the future of work, while training 2,500 at-risk workers in partnership with trade unions, training providers, researchers, and policymakers.
36. Little of the current evidence on what works in adult learning is of high quality. The UK Government needs to fund significantly more action-based and experimental research that stimulates the creation of innovative products which for example, use AI to improve information, advice and guidance for learners.

Question 6: What lessons can the UK learn from abroad?

37. **Nesta's evidence from Northern Europe shows how governments can take a "whole-person approach", establish a joined-up national skills strategy, and encourage collaboration between employers, unions, training providers to deliver it.**
38. Certain European countries are leading the way when it comes to preparing for the transformation of the labour market, particularly in the Nordic and Benelux regions. [There is a lot that the UK can learn from these countries](#) to develop an effective skills strategy quickly.
39. Different welfare regimes have an impact on the extent to which adults take part in training. Nordic and Benelux governments recognise that many situational and psychological barriers are preventing people from participating in training. As a result, they take a 'whole person' approach to skills policy, helping to address barriers to training through inclusive welfare policy to ensure everyone can access training. For example, subsidised childcare enhances the ability of women to participate in training and the labour market.⁵

⁵ Massing, N. & Gauly, B. (2017) 'Training participation and gender: analyzing individual barriers across different welfare state regimes.' *Adult education quarterly*, 2017, Vol. 67(4)

40. Crucially, these countries have prioritised a joined-up skills strategy, with clear governmental leadership and collaboration between stakeholders. It's not easy to find a home in government for adult learning and skills - historically it spanned ministerial portfolios getting little political attention compared with education, with responsibilities moving frequently between education and business departments over the last 20 years. At a local level, 20 employment and skills funding streams are managed by 8 government departments agencies.
41. In these countries, strong dialogue between policymakers, employers, unions and training providers is used to address work and skills issues effectively.⁶ In the 'Nordic model', unions have a strong mandate to bargain for workers rights and dialogue between unions and employers has proved an effective way to support workers and firms through changes in the labour market. This model is highlighted by the OECD (2018) as 'well-equipped to facilitate a smooth transition for workers affected by the digital transformation.'⁷ Government backed partnerships, such as the [Dutch Technology Pact](#) and [Danish Disruption Council](#), bring together policymakers, employers, unions and training providers to address work and skills issues. For example, the Disruption Council made recommendations which led to an agreement on retraining, and Denmark is the first country in which a collective agreement has been made between a union and an online employment platform.
42. In addition, these countries have effective policies to support workers through transition. A successful tool for "re-skilling" in [Sweden](#) is the [job security councils](#) (JSC), which are financed by employers as a result of collective bargaining. Employers pay into job-security councils, and if they make employees redundant, those workers receive financial support and job counseling from the JSC to help them get back into work as soon as possible. The results from these job security councils are positive; most of the workers who take part in these programmes improve their career prospects. Importantly, JSCs aim to reduce the demoralisation felt by displaced workers, and support them to see a job-change as an opportunity.
43. As part of the programme we have published a [framework](#) outlining the elements needed for a learning system which creates a digitally skilled workforce.⁸ Governments or organisations do not need to deliver all of these elements alone but there is a need for better coordination of employers, training providers and government.

⁶ [Designing Inclusive Skills Policy for the Digital Age, Digital Frontrunners, November 2018](#)

⁷ OECD (2018), 'OECD Reviews of Digital Transformation: Going Digital in Sweden' OECD Publishing, Paris.

⁸ [Delivering digital skills, Nesta, April 2018](#)

44. The Nordic countries also recognise the value of working together across the region. The declaration of the Nordic Council of Ministers for Digitalisation 2017-2020 states that 'The Nordic and Baltic countries already have close transnational digital collaboration in the public and private sector expressed through policy dialogue and common initiatives on digital innovation', and commits the participating countries to cross-border sharing of best practice and resources for digitalisation. The D9+ group, formed by the Swedish Minister for EU Affairs and Trade, Ann Linde, has twice brought together the digital leaders from the Nordic, Baltic and Benelux regions to chart the future of digital policy for the region. This new network of policymakers and other stakeholders creates opportunities for these countries to share practical knowledge about what works to foster an inclusive and adaptable workforce.
45. Nesta continues to lead the [Digital Frontrunners network](#), working with senior policymakers, experts and practitioners across Northern Europe and the Benelux to create a more inclusive future of work. This year we will be collecting further learnings from Sweden, Denmark, Finland, Copenhagen and the Netherlands, and providing examples and recommendations of best practice.

For further information about our work, or to follow up on the methods or tools mentioned here, please contact:

Billy.Beckett@nesta.org.uk - Stakeholder Relations Officer

About Nesta

Nesta is an innovation foundation. We use our expertise, skills and funding in areas where there are big challenges facing society. We've spent over 20 years working out the best ways to make change happen through research and experimenting, and we've applied that to our work in innovation policy, health, education, government innovation and the creative economy and arts.