

Opportunities and challenges for improving labour market information on skills

Skills and Productivity Board

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Executive summary

Better alignment between the skills employers demand and those people have can improve productivity, leading to better outcomes for individuals and businesses.

Quality Labour Market Information (LMI) can help identify where and how to achieve better skills alignment. The Board supports DfE's plans for the new Unit for Future Skills (UFS), which has the aim of improving the quality, quantity, and accessibility of LMI for all its users across the skills system.

The purpose of this report is to support the development of the UFS by highlighting key LMI gaps and opportunities, and illustrating the potential for making improvements. We also highlight the limits to the productivity gains that can come from LMI alone.

Summary box of skills alignment and data gaps

Understanding whether people have the skills employers need means we need to quantify which skills are needed and which skills people possess, to understand whether demand and supply align or whether there are skills mismatches. (By 'skill' we mean the capability to carry out the tasks that comprise a particular job.)

However, we cannot measure skills matching directly because of limited data on the skills supplied and demanded across the workforce. Instead, we rely on indirect measures:

Demand for skills is derived from:

- Demand for jobs, which comprise specific tasks that require skills to do them – with demand driven by economic trends and shocks, such as digitalisation or the shift to net zero.

Supply of skills comes from:

- Education and training – either through qualifications or non-certified training; and
- Experience (any skills developed outside of gaining a qualification, such as on-the-job).

Skills demand – what we know

Direct measures

- The Employer Skills Survey (ESS)¹ asks employers about their skills challenges, both in terms of their existing workforce and when recruiting. However, it has insufficient coverage to analyse sub-nationally and does not cover the skills

¹ [Employer skills survey 2019: England results - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/employer-skills-survey-2019-england-results)

employees may possess that they do not use (but could be productively employed in another job).

- Local Skills Reports² produced by Skills Advisory Panels capture some information on local demand, and upcoming Local Skills Improvement Plans (LSIPs) should continue this – but not consistently across all areas.
- It may be possible to capture skills directly from job vacancies in future for some occupations.
- A limitation is a lack of common language relating to skills across these and related data sources.

Indirect measures: occupations

- Employers demand skills for workers to perform specific jobs, it is therefore possible to indirectly infer demand for skills from demand for occupations.

Indirect measures: trends (economic, demographic, policy-driven)

- Future demand depends on changes in occupational structure (which in turn depends on future trends, whether economic, demographic, or policy-driven), as well as changes in skills used *within* occupations.
- DfE-commissioned Working Futures³ data projects employment by occupation but does not provide projections of changing skills *within* occupations.
- Qualitative measures (such as interviews) can provide some insight on changing skills needs *within* occupations but can only be focused on a small number of areas due to their relative high cost.

Ability to use indirect measures (measuring the skills within occupations)

- We can use existing skills taxonomies – classifications of skills within jobs (such as O*NET or ESCO, explained on p. 13) – to identify the most important skills *within* occupations in UK labour market. However, there is no UK-specific taxonomy.

Skills supply - What we know

Direct measures

- The Skills and Employment Survey (SES)⁴ asks employees about the skills used at work but has insufficient coverage to analyse sub-nationally or for individual

² [List of Skills Advisory Panels and local skills reports - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

³ [IER - Working Futures \(warwick.ac.uk\)](http://warwick.ac.uk)

⁴ [Skills and Employment Survey \(SES\) - Economic and Social Research Council \(nationalarchives.gov.uk\)](http://nationalarchives.gov.uk)

occupations. It also does not cover the skills individuals may possess that they do not use (but could be productively employed in another job).

Indirect measures: qualifications

- Full coverage of qualifications people have completed linked to their employment status (but not yet occupation) through the Longitudinal Education Outcomes dataset (LEO)⁵ – although this only includes qualifications data for people born after 1989 (age 31 and under), with limited information on those born before then.
- No consistent data on the skills developed when acquiring a qualification but some information on the skills that courses and programmes *intend* to develop.

Indirect measures: experience

- Minimal systematic evidence of the skills people develop outside of certified training, such as on-the-job, but we know this is a key means of acquiring some of the most in-demand transferable skills, such as communication skills.
- This represents one of the main gaps in our understanding of skills in supply.

Key:

- *Green – acceptable level of understanding (not a priority for improvement)*
- *Orange – some improvements possible and worth exploring*
- *Red – immediate improvements are a priority (covered key messages below)*

Summary of key messages

Priorities for improvements to LMI on skills:

Supply-side improvements are the main priority because we have relatively better measures of skills in demand than those in supply – and we need both sides to assess matching problems.

- Within supply, the priority is linking existing data sets (on occupations, qualifications, and employment), and testing the feasibility of adding occupation data to the LEO database, to track people from education into work and between jobs.

⁵ For example see [Graduate outcomes \(LEO\): postgraduate outcomes, Tax Year 2018-19 – Explore education statistics – GOV.UK \(explore-education-statistics.service.gov.uk\)](https://www.gov.uk/explore-education-statistics)

- This can enable a better understanding of the skills (or bundles of skills⁶) people have and where they developed them – whether in education and training, or a particular job.

On the demand-side:

- Analysing current and past data is important in understanding demand for skills (or bundles of skills). Many of these are transferable skills, which will be generally useful in the face of an uncertain future.
- Looking to the future, we should use the following methods:
 - Analysing known economic, demographic, and policy-driven trends that can change demand (whether increase or decrease) for certain occupations and skills demand across occupations. This analysis should be considered alongside information on transferable skills.
 - Investigating the changing skills required *within* priority occupations over time – likely based on expert predictions.

Understanding matching more clearly can help support productivity improvements but it should also enable better monitoring of equity considerations. This is an important development to support levelling up aims.

The following 19 key messages are also found throughout the report at the end of the relevant section in blue boxes.

Demand-side

Current demand

Local data

1. Good information at a local level will be essential to levelling up and supporting effective LSIPs (and Local Enterprise Partnerships, LEPs) but this is currently lacking. There are significant challenges to improving this and the UFS needs to explore and develop ways of capturing local level data, potentially through research or capturing and comparing information generated by LSIPs and other local actors within the system.
2. Data collected and/or held at a local level must be made available in an accessible format to Employer Representative Bodies (ERBs) producing LSIPs to give them the best starting point.

⁶ ‘Bundles’ of skills are groups of complementary skills that may be more in demand (and useful to employers) in combination.

Emerging data sources

3. The UFS should continually look to use new and emerging data sources, but it is essential to validate the data first. Validation provides confidence about how and where to use data and what robust conclusions can be drawn from them.
4. Web scraping of online vacancies is an emerging area of development, and the UFS should contribute to, and encourage, validation of these data. This includes advocating for wider access to enable others, such as academics, to help with this task.

Future demand

Changing demand for skills by occupation or across occupations

5. In partnership with Other Government Departments (OGDs) (in particular BEIS and HMT in their roles influencing demand and economic development), the UFS should develop a clear framework to identify the structural trends where further analysis is worthwhile, and over what timeframe. This should focus on where there are known changes taking place, potentially driven by significant public investment or policy change (e.g. the labour market transition to net zero).
6. This work should be considered alongside analysis on transferable skills currently in demand to develop a picture of skills likely to be useful for the future.
7. The UFS and the wider DfE will need to identify and clearly set out how the findings from analysis on future skill needs will translate into impact on the skill and training offer – either from the state, employers, or other bodies.

Changing demand for skills within occupations

8. The UFS should make full use of qualitative research into changing demand for skills within occupations. It should carefully design and communicate its role in producing, supporting, gathering, sharing and quality assessing this research.
9. The UFS should evaluate - and encourage others to evaluate - past predictions of skills changes within occupations to test the reliability of that information and learn how to make best use of it in future.

Supply-side

10. Improving the tracking of individuals from education to occupations is a top priority to better understanding skills in supply and skills matching. This could be achieved in two main ways:
 - a. The UFS should support efforts to link Annual Survey of Hours and Earnings (ASHE) with the Census and LEO database – whether through complementary analysis or in support of securing access to data.
 - b. DfE and HMRC should explore the feasibility and cost effectiveness of HMRC capturing occupational data and link it to the LEO database.

Strengthening the link between qualifications and the skills they develop

11. UFS should help to develop a common language and taxonomy of skills that can be used consistently throughout the skills system to strengthen the link between qualifications and skills produced for the labour market.
12. Qualifications and standards should continue to consider how they will develop transferable skills (alongside knowledge or technical skills). Regular and targeted evaluations of specific education programmes could support a better understanding of the skills developed – particularly, where there is greatest interest in identifying how best to develop certain skills, such as transferable skills.

Labour Market Information system

Policy and government

13. The UFS should lead coordination of LMI on skills and drive stronger performance overall of the LMI system, to ensure there is a clearer, more consistent view of skills, supply needs and mismatch.
14. The UFS should make LMI on skills publicly available where possible, bearing in mind legal data sharing issues, so that all policy and analytical audiences can make best use of it in their research.

Employers and LSIPs

15. DfE should help build capability and capacity of ERBs (and other relevant labour market intermediaries) representing employers – with consideration of ways to ensure fair representation. Providing time for LSIPs to embed will support this aim.
16. DfE should actively encourage university engagement (along with further education providers) in future stages of the LSIPs rollout to ensure greater coordination and capacity among all main actors locally.

Individuals and the careers services

17. UFS should work closely with the National Careers Service to understand its LMI needs and provide it (and others giving careers advice) with quality, timely, local-level data.
18. UFS should work closely with the development of the Single Source to ensure the future development of its common information architecture draws on relevant LMI and is linked to the work of skills taxonomies.
19. Improvements to the National Careers Service should ensure careers information and advice services reach all citizens. This requires identifying, and responding to, the specific needs of different learner types – including adults already in the workforce (critical gap currently).

1. The SPB and scope of this report

1.1 The SPB

The Skills and Productivity Board (SPB) is an expert committee set up to provide independent, actionable insights⁷ to help shape skills policy, focusing on strategic issues and identifying opportunities for skills to drive stronger productivity growth. The committee consists of six leading labour market experts, supported by an independent Chair and a small secretariat of civil servants⁸. The previous Secretary of State (SoS), Gavin Williamson, set the SPB three questions:

1. Which areas of the economy face the most significant skills mismatches or present growing areas of skills need?
2. Can the Board identify the changing skills needs of several priority areas within the economy over the next 5-10 years?
3. What is the role of skills and the skills system in promoting productivity growth in areas of the country that are poorer performing economically?

Analysis and insights from the Board covering all three of these questions will be reported to the SoS and published in the Spring.

1.2 Scope of this report

This report draws on the analysis the SPB has carried out over 2021 and builds on previous research and the Board's extensive expertise and experience in labour market economics. The Board's independence combined with access to policy and analysis teams within DfE enables it to provide robust advice, framed within a strong understanding of DfE's priorities and challenges.

This report sets out:

- Why quality LMI matters;
- Current measures of LMI and opportunities for improvement in relation to both the demand for and supply of skills; and
- How to improve information flows between key actors in the LMI system, focusing on DfE, employers, and individuals.

⁷ Note the committee does not make recommendations but provides advice and insights to the SoS.

⁸ Chair: Angela Noon, Siemens UK. Board members: Arun Advani, Claire Crawford, Andy Dickerson, Ewart Keep, Grace Lordan and Ken Mayhew.

2. Why LMI Matters

To deliver their policy ambitions around improving outcomes for individuals, businesses and raising productivity, DfE and other actors in the skills system need high quality labour market information (LMI) to help drive better skills matching – supplying the right skills to the right people at the right time in the right place. The Board supports DfE’s plans for the Unit for Future Skills to improve the quality, quantity, and accessibility of LMI for users across the skills system.

The Skills for Jobs White Paper⁹ clearly set the focus of education and training reforms to support people to get the skills the economy needs throughout their lives, wherever they live in the country. However, securing investment in the right skills in the right places across the diverse and fragmented education and training sector is not a straightforward task. High quality labour market information will be essential to achieving this goal and measuring the effectiveness of interventions designed around this aim.

The feedback loop between skills demand from employers into education and training provision is not perfect. While there is some responsiveness in the system, which DfE aims to boost with reforms including LSIPs, we cannot assume that skills supply will fully adjust to the changing labour market. This is especially true with rapid changes to our economy impacted by COVID-19, EU-exit, migration changes, levelling up, Net Zero and rapid technological change particularly around digitalisation. Consequently, DfE and other actors in the skills system must implement well-designed interventions to enhance the closer alignment of skills supply and demand, built on quality LMI and assessed through regular evaluation.

Better alignment should have a positive impact on productivity. Misalignment can come in different forms: skills shortage (where demand for skills exceeds supply); skills surplus, (where supply exceeds demand); or a low skills equilibrium (alignment but associated with a low level of productivity). Skills shortages are of immediate concern to employers, but surplus supply also has negative consequences. Skills surplus can be the result of education and training directed towards areas of low demand, from businesses under-utilising (and not paying for) potentially valuable skills at their disposal, or from changes in demand rendering some current skills obsolete – all implying frustratingly low reward for the individuals concerned. Where the result of low demand, skill surplus represents poor use of individual and Government investment in education and skills – and identifying such skills will be critical for a resource-constrained Government facing trade-offs.

⁹ [Skills for jobs: lifelong learning for opportunity and growth - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/white-papers/skills-for-jobs)

Employers are critical in ensuring better skills utilisation. No matter how effectively the education and training system prepares people with skills in demand, employers must adapt to make best use of the skills at their disposal across their workforce. This could be especially relevant in areas of existing skills-underutilisation or low-skill equilibrium. Part of the solution to this relates back to skills – through better equipping managers at all levels with the skills they require.

Of course, ‘skills’ is only one driver or enabler of improved productivity, and many other elements are also needed to achieve improved economic performance. This will be especially important in the context of the Government’s levelling up agenda, where the DfE’s efforts to improve the supply of skills must be accompanied by measures to address the myriad other factors causing low productivity at a local level.

DfE plans to establish a Unit for Future Skills (UFS) to act as a central point to capture LMI from a range of disparate sources, promoting useful analysis and improving the way information reaches different audiences and users. This report provides several key messages for the UFS (and DfE more widely) to help them meet these aims.

3. Measuring skills mismatches and capturing LMI

The perfect LMI picture will never be available as some elements cannot be reliably measured. It is not feasible to capture every skill held by every person in the labour force, and their willingness to use them for every job with a shortage. However, there are potential improvements that could help to fill some of the existing information gaps. Better information can support the actors across the system (including DfE) to make more informed decisions, leading to more effective targeting of training and education resources, and improving productivity.

We need consistent and comparable terms and the ability to convert between them to minimise confusion. Currently, different actors use a range of terms for similar concepts – employers may think in terms of jobs or occupations, and others in terms of qualifications and/or skills, each with different definitions. A newly formed Office for National Statistics (ONS) Taxonomy Oversight Group (TOG) is considering these issues, bringing together a range of people with the interest and expertise in taxonomies to identify improvements. The Board supports this work and awaits its conclusions with interest.

In a perfect LMI system, there would be comprehensive and comparable information about:

Demand for skills

- The skills required by all employers for jobs now.
- Future demand for skills, which depends on evolving economic trends, new technologies, and the evolving preferences of those who hire.

Supply of skills

- Stock – all the skills across all people in the labour force at a given point in time. Crucial as 80% of the workforce of ten years' time are already in it now, with the remaining 20% being new entrants¹⁰.
- Flows – the changes in the stock of skills over time, considering inflows and outflows. These can be either inflows from people joining the workforce, or acquiring new skills, or outflows as skills erode or people leave the labour force. Note the lags in the skills supply system because of the time it takes to train – even if we begin training more graduate engineers today, they will not enter the workforce for three or four years.

Matching (or alignment) of skills supply and demand

- Data on supply and demand at a detailed *geographic* level to understand the

¹⁰ This assumes average working lives are 50 years long, and a constant labour force.

dispersal of skills and people's willingness (and the necessity) to travel to work within an area.

The next section explores the quality of information available on both the demand (current and future) and supply sides, and key opportunities for improvement.

3.1 Demand for skills

3.1.1 Current demand – what we know

Available data provides a reasonable understanding of current (and past) demand. Analysis of this data can identify which skills are most transferable between jobs – critical when considering the skills likely to be useful in the future and where the education system should invest to ensure a workforce that can flex to changing demands.

Demand for skills can be measured either: *directly*, considering specific skills employers require, for example 'critical thinking' and 'data analysis skills'; or *indirectly*, considering the occupations (or jobs) employers demand and inferring the associated skills needed within those occupations. For example, increased employer demand for IT management occupations could be indirectly linked to increased demand for data analysis and critical thinking skills.

Information using the **direct approach** is limited, but possible through two main sources:

- The Employer Skills Survey (ESS), which asks a representative sample of UK employers what skills they will require over the next 12 months (excludes Scotland; roughly 81,000 respondents). This is an expensive survey and the main limitations from this data are that it is infrequent (usually collected every two years), does not cover sufficient granularity of skill, and does not have a large enough sample to show a clear picture at the local level.
- Analysis of the skills employers ask for in online job vacancies gathered using web-scraping. This differs from the ONS series on job vacancies¹¹ because it captures more detail on information within job postings. The main limitations of this are that many jobs are not listed and those listed may not be representative of all jobs in the labour market (discussed further from p. 14).

The Board's own analysis around its questions on skills mismatches (Q1 and Q2) has used an **indirect, two-staged approach**:

¹¹ [Vacancies and jobs in the UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk)

1. Measuring demand for occupations through a combination of indicators, following a similar approach to the Migration Advisory Committee (MAC). For example, sustained increases in job vacancies, and wage or hours data showing faster than usual increases provides an indication that labour to work in these occupations is in high demand (and potential shortage).
2. Identifying the most important skills used in occupations for which labour is in high demand, enabling the Board to infer skills in relatively high demand.

The Board relied on an existing O*NET taxonomy of skills to carry out this analysis – showing skills most important for each occupation. O*NET was designed for the United States' labour market and mapped to the UK Standard Occupational Classification (SOC). Consistent and comparable terminology is critical, and ideally the UK would have its own taxonomy that related to its own labour market. However, developing a UK-specific skills taxonomy would require significant time and resource and the Board considers it appropriate to first test the suitability of O*NET (and other available taxonomies) for the UK before considering developing a UK-specific equivalent¹². The TOG's work (discussed above on p. 11) is considering such questions currently.

The indirect approach provides a good view on the skills most in demand and disaggregating skills from occupations enables consideration of:

- Skills that appear common or transferable across a range of occupations and therefore are among the most appropriate skills to prioritise developing or incorporating into core curricula. Better information on these skills and the role they play in productivity could help prepare people for a rapidly changing labour market.
- How best to develop those skills (or bundles of skills) in demand – including whether smaller taught units or courses may be most appropriate (and efficient) at providing only the additional skills a person requires to move into a new occupation in high-demand.

Note that with this approach we can only say that skills identified are in high demand not necessarily in shortage. If there is a shortage, this may indicate either: the skills system is not developing these skills sufficiently; or, there are enough people with those skills across the workforce but there is a problem of matching people to jobs in shortage. This may be a result of people lacking information on their options, or terms and conditions in the job (including pay) being insufficient to induce people to fill those jobs (taking account

¹² Further detail is available in the Board's commissioned research on available taxonomies and their relevance to the UK.

of individual preferences) – in either case, training more people would not solve the underlying problem. Better data on skills supply could help answer this question.

3.1.2 Current demand – opportunities for improvement

Local-level data

Local level data on demand is currently poor but should be a priority for improvement to support the aims of the Skills for Jobs White Paper and the levelling up agenda.

Data on demand for skills - either directly captured or inferred through occupational data - is often not captured with a large enough sample to provide a regional breakdown, which is critical for establishing matching problems.

There is wide agreement that local data are vital but currently there is no single definition of locality implied by government policy. The first round of Local Skills Reports¹³ produced by LEPs illustrated the diversity of local labour markets and of the skill needs contained within them. However, the areas covered by LEPs, LSIPs, and the combined authorities may not always be coterminous, meaning they can have different data requirements. In assembling local data, it is also important to bear in mind that residents of any given locality are not necessarily confined to its boundaries. Some commute to other areas for work, and others leave to take up jobs elsewhere. Therefore, information on such travel and mobility patterns is essential to understanding skills supply and demand pressures.

LSIPs could be a vehicle for greater information flows between actors at the local level and DfE or OGDs – LSIPs are both a vehicle for capturing local LMI (likely qualitative), and a user of local LMI. ERBs charged with producing LSIPs will have their own demands for quality information at the local level in order to produce credible plans. As LSIPs are rolled out, DfE will need to support these new networks to build capacity and capability in accessing and understanding data to ensure ERBs base LSIPs on the most robust information available (discussed further from p. 25 under section 4 on the LMI system).

¹³ [List of Skills Advisory Panels and local skills reports - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

- 1. Good information at a local level will be essential to levelling up and supporting effective LSIPs (and LEPs) but this is currently lacking. There are significant challenges to improving this and the UFS needs to explore and develop ways of capturing local level data, potentially through research or capturing and comparing information generated by LSIPs and other local actors within the system.*
- 2. Data collected and/or held at a local level must be made available in an accessible format to ERBs producing LSIPs to give them the best starting point.*

Web-scraping of vacancy data

The availability and quality of vacancy data collected via web-scraping is increasing and could provide a direct indication of skills in demand, rather than relying on indicators of demand at the occupation level. However, the data must first be validated to identify where and how it can be used.

Real-time web-scraping data (whether online advertised vacancies or company hierarchy data with internally advertised vacancies) have several key advantages. The data can be accessed and updated frequently, they include a large volume of data with coverage across the country and have a wide range of information besides occupation (or job title), including desired skills, location, and salary information.

However, there are significant challenges with using data from web-scraping, and it must be treated with awareness of the caveats:

- **We do not know which areas of the workforce it represents (well or poorly).** Not all jobs are posted - many are advertised internally or via non-web means, such as word-of-mouth - and we do not know exactly how representative postings are by occupation.
- **Inconsistency.** Presentation and content of information listed is inconsistent and often hard to compare – some employers provide an extensive wish-list of skills for a role, while others list only those essential to performing in the role.
- **Fragmented sources of data.** There are a range of different sources (including EMSI, Adzuna, and Indeed) and challenges with access. Much of the information is held privately and is accessed via paid licence, creating barriers to making this information publicly available, although the ONS now publishes data drawn from Adzuna. Easier access to this data and triangulating the various sources would improve data quality.

That said, there is a significant amount of activity underway to process the information, increase confidence in the insights it provides, and improve access. For example, DfE has contributed to the Open Jobs Observatory, a pilot by NESTA, developing an open-

source jobs observatory which aims to provide free and up-to-date information on the skills requested in UK job adverts¹⁴. This makes available some findings from vacancy data and their code used for web-scraping and is a useful addition but will require further development to maximise its potential.

3. *The UFS should continually look to use new and emerging data sources, but it is essential to validate the data first. Validation provides confidence about how and where to use data and what robust conclusions can be drawn from them.*
4. *Web scraping of online vacancies is an emerging area of development, and the UFS should contribute to, and encourage, validation of these data. This includes advocating for wider access to enable others, such as academics, to help with this task.*

3.1.3 Future demand – what we know

We can think about estimating future skills in two parts:

1. **Changes in employment shares of occupations**, including entirely new occupations emerging and others receding. For example, significant technological developments have led to fewer agricultural workers required, but the emergence of demand for heat pump technicians. The DfE-commissioned Working Futures¹⁵ produced projections of sectoral, regional, and occupational employment. These are projections, rather than forecasts, of future skills needs.
2. **Changing skills needs within occupations**. For example, new tools or technologies requiring people adapt to new ways of working.

To understand changing employment shares between occupations, the Working Futures data is likely to be sufficient for most occupations, with limited potential to improve projections and decrease uncertainty. However, there is potential to develop more specific forecasts around new and/or declining occupations and the consequent implication for skills needs. This potential is greatest in areas where there are known structural changes, such as the transition to Net Zero (discussed further in the section below).

¹⁴ [The Open Jobs Observatory | Nesta](#)

¹⁵ [IER - Working Futures \(warwick.ac.uk\)](#)

Research into changing skills needs within occupations should focus on high-value cases rather than a blanket approach because it is difficult and resource intensive. This research is likely to be qualitative, interviewing those with specialist knowledge on certain occupations. The SPB commissioned research for several priority occupational groupings (such as skilled trades and managers) which will be available early 2022 (discussed further on p. 18).

3.1.4 Future demand – opportunities for improvement

Changing demand for skills across occupations – considering economic trends

When identifying skills needed for the future, it is a top priority to improve our understanding of transferable skills because these they are relevant across a range of jobs and prepare people for uncertainty. However, we should also look to the future, with analysis of known economic, demographic, and policy-driven trends that can change demand for certain occupations and skills demand across occupations.

When considering skills needed for the future across occupations it is a priority to:

- First – understand the transferable skills required across the workforce now. We have better quality data on current demand (rather than relying on estimation); and, transferable skills are useful across a range of occupations, preparing people for change and an uncertain future.
- Second – analyse known, structural trends that could change demand for certain occupations and/or have widespread implications for skills needs. It is useful to consider trends analysis alongside information on transferable skills and/or use it to produce detailed estimation of changing employment by occupation – expanding on Working Futures projections.

Considering analysis on transferable skills and known trends together is particularly useful when the structural trend in question has implications for changing skills needs across a range of occupations. The Board's own analysis of transferable skills identified high demand for data and digital skills and coupling this with analysis showing a trend towards greater digitalisation can strengthen the case for a supply response.

Estimation in new and/or declining occupations and assessing their implications for skills needs is highly uncertain but it may be possible to improve understanding in selected areas. Working Futures gives a good understanding of potential occupations in demand going forward and is likely to be adequate for most occupations because of the significant uncertainty involved. However, it is possible to improve upon these projections through analysis of *known structural changes*. For example, the Government's target to be Net Zero by 2050 has seen the publication of the Net Zero Strategy as well as the Green

Jobs Taskforce report¹⁶ which sets out the skills impacts associated with the transition, and the various training programmes that help support people into green jobs.

There are risks from looking only at specific occupations (or groups of occupations) because it is a partial equilibrium approach. This means it analyses areas of the economy in isolation and does not capture the various (and complex) interactions between all parts of the economy. For example, it fails to capture the wider labour market impact of workers moving from one area to another (either spatial or sectoral). This raises the potential for inconsistency between what is expected to occur in one area and in the economy as a whole. This risk does not apply to the Working Futures approach, where the sum of all parts is equal to the expected growth in overall employment.

DfE, in partnership with OGDs, employers and training providers, needs to determine which structural trends warrant further analysis and how far that analysis should influence decisions on skills provision (when considered alongside other information). Structural trends may include technological (automation and digitalisation); demographic (ageing population); or those influenced by public policy (transition to Net Zero).

DfE will need to ensure there are clear and effective mechanisms to scale up and scale down education and training provision according to changing needs. This will require strong and long-term coordination between relevant government departments, particularly between BEIS and HMT (economic development and regeneration policy agenda) and DfE (with leadership role on skills supply).

- 5. In partnership with OGDs (in particular BEIS and HMT in their roles influencing demand and economic development), the UFS should develop a clear framework to identify the structural trends where further analysis is worthwhile, and over what timeframe. This should focus on where there are known changes taking place, potentially driven by significant public investment or policy change (e.g. the labour market transition to Net Zero).*
- 6. This analysis should be considered alongside analysis on transferable skills currently in demand to develop a picture of skills likely to be useful for the future.*
- 7. The UFS and the wider DfE will need to identify and clearly set out how the findings from analysis on future skill needs will translate into impact on the skill and training offer – either from the state, employers, or other bodies.*

¹⁶ [Green Jobs Taskforce report - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/672227/green-jobs-taskforce-report.pdf)

Changing demand for skills within occupations – considering expert views

There is value in better understanding how the skills demand within occupations is likely to change. However, this is resource intensive and should be used in a targeted way, with clear feedback loops into the delivery and outputs of the skills system.

Qualitative methods can be used to understand the changing skills required within occupations, both for mapping past changes and predicting likely future demand. A common method is through stakeholder interviews with industry or occupational experts who are well placed to comment on recent changes and how quickly occupations may be changing. A key advantage with this approach is the potential to make incremental improvements to the skills offer and to adjust prioritisation within certain regions, sectors, or occupational groupings of interest.

Two key drawbacks from the qualitative approach are that it is resource intensive, and we do not know how accurate expert predictions are. Initial indications from the SPB's research are that research participants can only answer questions on a small number of occupations, so this approach cannot be scaled to cover the entire workforce (or even large portions of it)¹⁷. It would be useful to revisit past predictions for skills needs to measure how accurate they were over different time periods. This evaluation should consider relative accuracy between decline in demand and growth in demand – with information on areas of decline useful when considering trade-offs between areas of investment in skills development.

Web scraping of online vacancies is another method with potential to shed light on changing skill requirements within occupations. This would be based on current and past information (as we do not know job listings from the future) but could help identify trends relevant to the future. It is possible that for a subsection of occupations these techniques will be informative and useful but may not be appropriate for analysis of all types of jobs and skills. As highlighted in key messages 3 and 4 on p. 15, web-scraping techniques are new, and first require validation to determine accuracy and representativeness so that the UFS and others can have confidence in the data and use it appropriately. Cross referencing with other methods – qualitative and quantitative - could support this validation exercise.

¹⁷ The Board's own research prioritised managers, skilled trades, health, and science and technology.

8. *The UFS should make full use of qualitative research into changing demand for skills within occupations. It should carefully design and communicate its role in producing, supporting, gathering, sharing and quality assessing this research.*
9. *The UFS should evaluate - and encourage others to evaluate - past predictions of skills changes within occupations to test the reliability of that information and learn how to make best use of it in future.*

3.2 Supply of skills

We can measure skills that appear to be in high demand relatively well through an indirect approach (occupations to skills) but applications for this information are limited without knowing more about supply.

3.2.1 Supply – what we know

Weak data on the stock of skills within the workforce is the main limitation to better understanding skills matching – and a barrier to identifying where to invest to raise productivity. There is no way of reliably measuring this directly – sample sizes in surveys are small and rely on the utilisation of self-reported skills. Indirect measures would use qualifications, but these are imperfect and require further development.

The **direct** measures of skills in the economy are poor. The main source is the Skills and Employment Survey (SES), which captures employees own views of the skills *they utilise in their work* (so not all skills they may have). Employees may not accurately report their skills and there is insufficient coverage to analyse sub-nationally or for individual occupations. The Board does not consider this to be a reliable measure of the skills employees have on its own.

We therefore rely on measuring skills **indirectly** through the qualifications people hold. However, there is no consistent way of identifying the skills individuals obtain from a particular qualification. We are much better at identifying the knowledge (a subset of skills) people get from qualifications than the skills because most qualifications focus on developing and testing the development of knowledge. For example, asking someone to answer factual topic questions is easier than verifying their ability to influence.

We also lack good measures of the additional skills gained from each qualification level relative to what someone may already have known or been able to do beforehand. This is critical when assessing the effectiveness of a particular qualification at equipping people with certain skills.

This relationship between qualifications and skills becomes increasingly difficult to understand the longer people are in the workforce. The further people are from their

education and training, the more their skills will change, with some skills eroding through non-use, or becoming obsolete, while new skills develop through experience and learning undertaken in work. Certain types of skills may also be more effectively developed while on-the-job.

3.2.2 Supply – Opportunities for improvement

It is unlikely that we can achieve material improvements in the data we collect on the stock of skills present in the workforce. Instead, we should focus on tracking individuals from education to occupations and throughout their careers. This enables a better understanding of the skills people develop in education and training, and in the workplace.

Improving direct measures of the stock of skills (limited potential)

It is not a priority to improve direct measures of the stock of skills. There are three main options, but they are unlikely to lead to significant increases in our understanding:

- Expanding the SES, which measures the skills used in the workplace by a representative sample of UK employees. New questions could be added to help identify skills employees have but do not use providing a wider picture of all skills in supply. However, the SES is infrequent, expensive, not sufficiently detailed, and relies on employee self-reporting, which can be inconsistent.
- The Organisation for Economic Cooperation and Development (OECD) produces the Survey of Adult Skills as part of its Programme for the International Assessment of Adult Competencies (PIAAC)¹⁸. England and Northern Ireland were in the first cycle (2011-12), and England will be included in the second cycle (scheduled to report in 2024). The data is infrequent but there could be value in investigating ways of making greater use of it provided the OECD continues to carry out the survey.
- It is theoretically possible to use online CV profiles (such as LinkedIn) to capture information on the skills people have but we do not know how reliable this is or in what occupations it may be most representative.

¹⁸ [Survey of Adult Skills \(PIAAC\), OECD](#)

Tracking individuals from education into occupations

It is a top priority to improve information that tracks individuals as they move from education into work, and between jobs throughout their lives. This can help us understand both the skills individuals have and where (and how) they were developed, whether in formal education and training (as part of a qualification) or on-the-job through experience. Understanding the skills developed on the job becomes increasingly important the longer people are in the workforce.

We know the skills each occupation demands (using O*NET or other skills taxonomies, as discussed on p. 13) and can pair this with the ability to track individuals from education and between jobs to understand the following:

- **Skills developed from qualifications.** As a person moves into a job after gaining a qualification, we can infer that the qualification helped develop the skills required for that job. Taking account of the fact that many employers will hire staff knowing they will not have all the skills required from the outset.
- **Understanding how skills develop after entering work.** Each time a person moves between jobs, we can compare the new skills that job requires to those of their previous job and infer that their previous job contributed towards developing those new skills.
- **Identification of transferable skills** in people who move most easily between jobs, or bundles of skills that are complimentary when used (or found) together. Particularly when paired with data on pay, this information can show the skills that are common in people who have greatest success moving between jobs and into better paid positions, which can signal skills of high value (with pay a proxy for higher productivity). A stronger understanding of transferable skills is crucial in preparing the workforce for the future.
- **Understanding the characteristics and demographics of workers** to shed light on the challenges in ensuring different jobs are open to all and of achieving a diverse workforce.

There are two main ways of tracking people from qualifications into occupations:

1. **Capturing more data.** HMRC could potentially start capturing occupational data and adding it to the Longitudinal Education Outcomes database (LEO), which already has information on qualifications, employment, and earnings.
2. **Linking together existing datasets.** The two main options focus on linking datasets on qualifications with the Annual Survey of Hours and Earnings (ASHE), which includes data on occupations and earnings for a representative sample.
 - a. Linking ASHE with Census (2011 and new Census when available).

Census covers more people but is infrequent.

- b. Linking ASHE with the LEO database. LEO only includes qualifications data people born after 1985 (age 35 and under).

Each option has advantages and could offer new insights. Option 1 would be most comprehensive (by covering all people in employment) and is ideal in the longer term, but it would be expensive and take time to build up a picture tracking individuals since we would not know past occupations held. Options 2a and 2b partly resolve this problem because ASHE has tracked the same representative sample since 2004, but it only covers 1% of employees with a National Insurance number.

Academics have already begun linking these datasets, illustrating the importance of their (and other analytical or policy groups) contributions to better understanding skills issues (data sharing discussed further on p. 24). There is an opportunity for the UFS to encourage and expand on the work of others to achieve greatest value for money with constrained resource.

10. Improving the tracking of individuals from education to occupations is a top priority to better understanding skills in supply and skills matching. This could be achieved in two main ways:

- a) The UFS should support efforts to link ASHE with the Census and LEO database – whether through complementary analysis or in support of securing access to data.*
- b) DfE and HMRC should explore the feasibility and cost effectiveness of HMRC capturing occupational data and link it to the LEO database.*

Measuring the skills qualifications produce

It is possible to complement the approach above to better understand the skills qualifications produce by:

1. Developing consistent, comparable frameworks where providers identify all the skills they intend to develop with each programme and qualification
2. Evaluating specific education programmes to test whether they delivered the intended skills as a means of verifying the accuracy of above framework. However, there are significant challenges measuring skills gained as opposed to knowledge.

Qualifications typically already list the skills they intend to develop but this is not always consistent or comparable and may prioritise certain types of skills over others. Occupational standards already list the skills, knowledge and behaviours a student will

develop but emphasise technical skills rather than transferable skills (although these can appear as ‘behaviours’). Transferable skills are of increasing interest in preparing for future changes in demand, which are highly uncertain.

There is already work underway to improve consistency and comparability in language and its applications.

- First – the TOG is considering skills taxonomies for the UK (discussed on p. 11 and p. 13), which includes identifying common language for skills. The TOG’s findings could be used to improve the way employer-led standards frame the skills they plan to develop.
- Second – The Institute for Apprenticeships and Technical Education (IfATE) and those developing technical qualifications - including T-Levels and higher technical qualifications - are working to meet the aim outlined in the Skills for Jobs white paper, to: *align the substantial majority of post-16 technical and higher technical education and training to employer-led standards set by the Institute for Apprenticeships and Technical Education*. It is appropriate to prioritise consistency for new qualifications and standards because of the large volume of qualifications already held by people in work.

11. UFS should help to develop a common language and taxonomy of skills that can be used consistently throughout the skills system to strengthen the link between qualifications and skills produced for the labour market.

12. Qualifications and standards should continue to consider how they will develop transferable skills (alongside knowledge or technical skills). Regular and targeted evaluations of specific education programmes could support a better understanding of the skills developed – particularly, where there is greatest interest in identifying how best to develop certain skills, such as transferable skills.

4. The LMI system: information flows between key actors

Gathering and developing quality LMI is important, but to ensure it leads to improvements in skills matching and higher productivity, that information needs to reach the right labour market actors in the right format.

Most actors within the LMI system are both potential users and sources of LMI. Each has varying levels of data processing capability, and different perspectives, roles, and levers to influence skill matching. Employers, individuals, and providers should not be viewed as passive audiences for LMI. Neither are DfE or OGDs necessarily central to sharing data and insights because different actors may have relationships with each other, which should be encouraged. For example, employers and ERBs can and should engage directly with providers to convey their current and likely future skills needs – both in relation to LSIPs and more generally.

4.1 Policy and government users

DfE as leader within the LMI skills system

Given the wide range of actors across the skills system there is clear benefit from DfE taking a strong leadership role around LMI on skills although it will not be the owner of all LMI or hold all the expertise needed to maximise its usefulness.

DfE is clearly a key user of LMI, enabling it to design better policy, deliver reforms, evaluate their impact, and continue this iterative cycle of improvement. As an example, the evidence collated by the Green Jobs Taskforce has helped DfE improve its understanding of skills needs across the green economy and has helped inform related policy decisions. This includes the expansion of wave 2 Skills Bootcamps roll out, the Emerging Electrification Skills Project and qualifications included in the Free Courses for Jobs offer. However, even with the work undertaken to date on green skills, evidence gaps remain, with insufficient granularity on the scale, timing and location of current and future skills demand, and an incomplete picture of how far skills supply will match that demand. It will be critical for DfE to continue to work with industry, the skills sector, and OGDs to build up this evidence base.

Establishing the UFS presents an opportunity for DfE to increasingly lead:

1. **Collection, interpretation, and dissemination of LMI on skills** – linking the work of different government departments and improving consistency, including shaping language so that it is common, comparable, and easily understood.
2. **Strategic oversight over the LMI skills system** – identifying gaps and areas for improvement, and supporting other actors in their roles to collect, analyse, and

distribute information for specific audiences. For example, raising capability of ERBs that produce LSIPs (noting this could depend on outstanding decisions around the scope of LSIPs).

13. The UFS should lead coordination of LMI on skills and drive stronger performance overall of the LMI system, to ensure there is a clearer, more consistent view of skills, supply needs and mismatch.

Other policy users of LMI

As well within the DfE, there are other policy LMI users with a strong interest in this data within OGDs, research organisations, think tanks, local government, and ERBs. These users typically have high data capability and would benefit from accessing all types of information, including in a raw, relatively unprocessed format. It will be important to make LMI publicly available where possible to use the full breath of analytic capability in groups outside of government, but careful consideration is needed to make this user friendly. To be successful, the UFS will need to understand the needs and capabilities of different users and adapt its outputs and methods to meet these.

This is a busy and fragmented field, with many interested departments, research bodies and existing projects and data programmes. To avoid duplication, DfE will need to assess and plan how its own information will interact with (and be considered alongside) other information that audiences are likely to receive. For example, there is already the Labour Market Information for All¹⁹ portal which aims to provide high quality, reliable labour market information to inform careers decisions, and it would be important to know how effectively this meets its users' needs before creating anything new.

14. The UFS should make LMI on skills publicly available where possible, bearing in mind legal data sharing issues, so that all policy and analytical audiences can make best use of it in their research.

Sector Approach

The Board has been interested in the new Sector Delivery Lead (SDL) approach as a model to support greater coordination of LMI users, particularly across government departments and with industry. No10 has asked sector facing departments (such as BEIS and DFT) to appoint senior leaders as SDLs, responsible for coordinating a response to workforce supply and demand challenges in their priority sectors (with five priority sectors

¹⁹ [LMI For All – LMI For All](#)

initially²⁰). Given its levers around skills supply, DfE has played an active role in the conception of the SDL model, including developing strategies for mapping publicly funded skills supply relevant to key occupations within priority sectors.

All SDLs have been commissioned to produce an initial workforce assessment by the end of January 2022, drawing on engagement with employers and ERBs. These are expected to identify priority occupations for skills development and include actions on data improvements (collection, use, and dissemination). This aims to help departments access an accurate and meaningful picture of the workforce in each SDL sector. SDLs are expected to work closely with the new UFS throughout this process, particularly on plans to address evidence gaps – something the Board strongly encourages.

The Board awaits the workforce assessments with interest to consider the potential of embedding or expanding the SDL approach. However, one concern is that defining sectors such as ‘manufacturing’ or ‘construction’ may have limited value when seeking to identify common workforce challenges. These sectors are large, with workers in a range of occupations covering a range of skill levels and types. For example, skills needs in food manufacturing are very different from those in advanced engineering, but both would fall within ‘manufacturing’. The UFS will need to consider how it balances information gathered through SDL workforce assessments against other sources with a different lens (whether regional or occupational) – in relation to ‘message 5’ on p. 17 considering future skills needs.

4.2 Employers, Intermediaries and LSIPs

Employers are an important user and source of LMI but there are challenges ensuring this information flows smoothly. LSIPs offer a good opportunity to improve these information flows, particularly between employers and providers. DfE is right to emphasise the local aspect, although some skills mismatches will need to be considered at a national level.

Employers are both important users and sources of LMI:

- **As users of LMI** – individual employers (especially SMEs) are typically focused on reacting to their current circumstances rather than acquiring LMI for planning purposes. However, if given information in an accessible way, employers stand to benefit from a clearer understanding of their economic context, positioning

²⁰ Construction, digital & technology, manufacturing, health & social care, and haulage & logistics – these sectors were identified as areas of the economy where there are high volumes of vacancies, long-term structural barriers that prevent effective recruitment and retention, and which will be the main source of many future green jobs.

themselves to pursue new opportunities and increase resilience.

- **As sources of LMI** – few individual employers are large enough (with required capability and capacity) to either carry out systematic skills audits and skills planning, or to share that information directly with FE providers, significantly limiting employer influence over FE provision. As discussed throughout this report, there are significant benefits from capturing reliable, representative information on employer demand to improve skills matching.

Intermediaries (such as ERBs) are critical in coordinating across employers (particularly SMEs) to help convey information to different audiences (FE providers or DfE), but they need more support in accessing relevant LMI. Although not always sufficiently representative of all employers, ERBs understand their members and know best how to extract LMI insights they can apply. LEPs have also played a role in understanding employers' skill needs, and general economic context, within a defined area. The introduction of LSIPs now presents an opportunity to strengthen coordination across employers and raise capability among ERBs.

LSIPs are important because LMI will have the greatest impact if it is contextualised locally and made relevant to local employers and local providers. Improving quality and access to local level LMI will be essential to achieving levelling up and identifying where skills mismatches can be addressed to improve economic performance in localities. This local aspect is vital in providing the opportunity for ERBs (and their members) to build stronger direct links with providers - rather than relying on DfE to mediate their needs.

There is significant potential in LSIPs to drive greater coordination between employers and FE providers. As the programme expands, greater involvement from universities would increase their effectiveness – and support greater coordination between higher and further education providers. The Board understands that this is currently possible under Skills Bill although the focus for trailblazers has been on FE providers.

Reconciling the local and national picture

DfE has the best view of LMI nationally and plays a critical role coordinating across the system. In relation to employers, LSIPs, and ERBs, DfE's role should include:

- Understanding how local areas' priorities and national priorities align or differ and considering how to reconcile them. For example, if a local area raised the need for more chefs but there was an over-supply nationally, the best response may be to encourage more people to relocate rather than training more chefs locally.

Coordinating (or identifying the potential for coordination) between activities in adjacent areas, identifying the limitations from local area boundaries – for example, FE colleges in adjacent areas may face similar demands that could be most efficiently met by the colleges collaborating and specialising

15. DfE should help build capability and capacity of ERBs (and other relevant labour market intermediaries) representing employers – with particular consideration of ways to ensure fair representation. Providing time for LSIPs to embed will support this aim.

16. DfE should actively encourage university engagement (along with FE providers) in future stages of the LSIPs rollout to ensure greater coordination and capacity among all main actors locally.

4.3 Individuals and careers services

People would benefit from a better understanding of how their education and training choices can influence future job opportunities. This requires information presented in an accessible way, provided via effective, trustworthy intermediaries. Careers advice needs to relate to the local context and reach all prospective students, including adults.

Prospective students have minimal interest or ability in interpreting LMI, but they would benefit from understanding the impact of education on future job opportunities. Careers advisory services are a crucial intermediary between providers and prospective students to help them understand the impacts of educational choices, but only if their guidance is reliable and trustworthy.

There is work underway to improve careers advice. Sir John Holman, the Independent Strategic Advisor on Careers Guidance, and the high-level Steering Group on Careers Alignment is progressing the establishment of a “single source” of government-assured careers information. Whilst currently in the early phases of project scoping and development, the Single Source aims to enable all users to access up-to-date careers information relevant to their needs – including LMI, education and training options and job opportunities. This involves creating a ‘back-end’ of a common information architecture which draws on skills, occupations, and qualifications taxonomies and LMI. The development of this cross-governmental work is linked to the National Careers Service website’s offer.

Improvements to the National Careers Service currently underway should prioritise:

- provision of locally contextualised insights underpinned by quality local data, bearing in mind the shift towards more online (and remote) working; and
- reaching adults already in the workforce.

Careers services are critical for adults already in the workforce. Adults can access the National Careers Service for careers information advice and guidance from professionally qualified careers advisers (who aim to tailor their advice to meet the needs of the

individual in the context of the local and national labour market). The Service can be accessed online, by phone or in person in the community. Generally, there is a lack of awareness of the Service and what it offers. This can act as a barrier to more adults embracing retraining and reskilling opportunities, or lead to choosing the wrong training (or re-training) options – which will only become more important if the types of job opportunities change ever more rapidly.

17. UFS should work closely with the National Careers Service to understand its LMI needs and provide it (and others giving careers advice) with quality, timely, local-level data.

18. UFS should work closely with the development of the Single Source to ensure the future development of its common information architecture draws on relevant LMI and is linked to the work of skills taxonomies.

19. Improvements to the National Careers Service should ensure careers information and advice services reach all citizens. This requires identifying, and responding to, the specific needs of different learner types – including adults already in the workforce (critical gap currently).

Glossary of terms

ASHE - Annual Survey of Hours and Earnings includes data on occupations and earnings for a representative sample. Tracks the same representative sample since 2004, but it only covers 1% of employees with a National Insurance number. [Annual Survey of Hours and Earnings \(ASHE\) - Office for National Statistics \(ons.gov.uk\)](#)

ESS - Employer Skills Survey - ESS asks employers about their skills challenges, both in terms of their existing workforce and when recruiting. [Employer skills survey 2019: England results - GOV.UK \(www.gov.uk\)](#)

ERBs - Employer Representative Bodies

Green Jobs Taskforce - launched to set the direction for the job market as UK transitions to a high-skill, low carbon economy. [Green Jobs Taskforce - GOV.UK \(www.gov.uk\)](#)

IfATE - Institute for Apprenticeships and Technical Education. [Home / Institute for Apprenticeships and Technical Education](#)

LEO - Longitudinal Education Outcomes (LEO) data brings together higher education information from the Department for Education (DfE), employment, benefits and earnings information from: the Department for Work and Pensions (DWP), and HM Revenue and Customs (HMRC). [Apply to access the Longitudinal Education Outcomes \(LEO\) dataset - GOV.UK \(www.gov.uk\)](#)

LMI - Labour Market Information

LMI for All is a portal which aims to provide high quality, reliable labour market information to inform careers decisions. [LMI For All – LMI For All](#)

LEPs - Local Enterprise Partnerships [Local Enterprise Partnerships: map - GOV.UK \(www.gov.uk\)](#)

LSIPs - Local Skills Improvement Plans

Local Skills Reports - produced by Skills Advisory Panels capture some information on local demand. [List of Skills Advisory Panels and local skills reports - GOV.UK \(www.gov.uk\)](#)

MAC - Migration Advisory Committee is an independent, non-statutory, non-time limited, non-departmental public body that advises the government on migration issues. MAC is an advisory non-departmental public body, sponsored by the Home Office. [Migration Advisory Committee - GOV.UK \(www.gov.uk\)](#)

Net Zero – UK’s commitment to reach net zero emissions by 2050. [Net Zero Strategy: Build Back Greener - GOV.UK \(www.gov.uk\)](#)

O*NET database, containing hundreds of standardized and occupation-specific descriptors on almost 1,000 occupations covering the entire U.S. economy. [About O*NET at O*NET Resource Center \(onetcenter.org\)](#)

OECD - Organisation for Economic Cooperation and Development. [Home page - OECD](#)

OGDs - Other Government Departments, including BEIS, HMRC, ONS and HMT among others

PIAAC - Survey of Adult Skills as part of its Programme for the International Assessment of Adult Competencies. [Survey of Adult Skills \(PIAAC\) - PIAAC, the OECD's programme of assessment and analysis of adult skills](#)

SES - Skills and Employment Survey asks employees about the skills used at work. [Skills and Employment Survey \(SES\) - Economic and Social Research Council \(nationalarchives.gov.uk\)](#)

TOG - Taxonomy Oversight Group, set up by ONS to consider issues of consistency and comparability of skills terms

SOC - UK Standard Occupational Classification is a common classification of occupational information for the UK. [Standard Occupational Classification \(SOC\) - Office for National Statistics \(ons.gov.uk\)](#)

UFS - Unit for Future Skills, set up by DfE with the aim of improving the quality, quantity, and accessibility of LMI for all its users across the skills system.

Working Futures produced projections of sectoral, regional, and occupational employment. These are projections, rather than forecasts, of future skills needs. [IER - Working Futures \(warwick.ac.uk\)](#)

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