House of Commons Library

Debate Pack
12 April 2024
Number CDP 2024-0073

By Joe Lewis
Andrew Powell,
Nerys Roberts,
Matthew Ward

Digital skills and careers

Summary

There will be a Westminster Hall debate on Digital skills and careers on Tuesday 16 April at 4:30pm

1 Background

1.1 Digital skills statistics

The Government has reported that the digital skills gap is estimated to cost the UK economy £63 billion per year.[1]

Lloyds Bank are commissioned by the Department for Education to run an annual Consumer Digital Index, and this was last published in 2023.[2]

In the 2023 Index, it was reported that around 13 million people in the UK had the lowest level of digital capability, which "means they are likely to struggle interacting with online services". They report that this is 25% of the UK population, but that this has fallen over the last couple of years (from 33% in 2020, 29% in 2021 and 26% in 2022).

The report also looked at the proportion of people who had the essential digital skills that are needed for the workplace. To have these essential skills, an individual needs to be able to complete at least one task within five different skill areas.[3]

Although it found that four out of five people had these essential digital skills, this meant that 7.5 million people, or 18% of UK adults, lacked these essential skills. Of these, 1.9 million were unable to do any of the essential skills needed in the workplace.

They also report that around 6.8 million people, or 13% of the UK population, have "ultra low" digital skills, and are unable to do any of the 'digital basics'.

The UK Government published a May 2021 report Quantifying the UK Data Skills Gap - Full report. This found that 46% of businesses have struggled to recruit for roles requiring hard data skills, that the supply of graduates with specialist data skills from universities is limited and that half of all workers surveyed has not received any data skills training in the previous two years.[4]

The Government also commissioned and published a May 2021 Ipsos MORI report Understanding the UK AI labour market: 2020 that found that 62% of businesses had faced problems with technical skills gaps, with 35% saying

1 DCMS, UK Digital Strategy, 4 October 2022
2 Lloyds Bank, UK Consumer Digital Index 2023, November 2023
3 There are 20 tasks that are considered essential digital skills for work within five skills areas: Communicating, Handling information and content, Transacting, Problem Solving, Being safe and online
4 DCMS/DSIT, Quantifying the UK Data Skills Gap - Full report, 18 May 2021

existing employees lacked the technical skills that were needed by the business, while 49% said jobs applicants lacked these skills.[5]

International comparators

The International Institute for Management Development (IMD) measures economies by a World Digital Competitiveness Ranking. In 2023, which was the seventh year that they have published these rankings, the UK was ranked 20th of the 64 economies ranked, down from 16th in their previous rankings. The USA was ranked 1st in these rankings.

The IMD provide a country profile for each economy which provides further breakdowns of the rankings. The UK profile shows that the UK was ranked higher for knowledge (in 13th), but lower for technology (in 29th). It was ranked 18th for future readiness.

Wiley put together a Digital Skills Gap Index 2021 which ranked 134 economies based on "a host of global indicators that reflect how advanced and prepared an economy is with the digital skills needed for sustained growth, recovery, and prosperity".

The UK ranked 9th in their rankings with a score of 7.2 (out of 10). Singapore ranked 1st with a score of 7.8.

Barriers to the uptake of digital courses and careers

The Digital Skills Council (see section 3) has commissioned two behavioural insights studies that were published in November 2023 and look at the barriers and perceptions affecting the take-up of digital courses and careers. The first of these studies looked at the barriers for young people and the second looked at the barriers for "early career switchers" aged 27 to 35, and experienced professionals aged 50 or over.[6]

Some of the barriers that were identified as stopping young people move into digital training and careers included:

1. Opportunity barriers such as a lack of encouragement, restricted options or low teaching quality.

2. A lack of awareness of the options and potential value of digital courses.

3. Motivational barriers, such as a perception that they would be too difficult or 'not for people like me'.[7]

---

5 DCMS, Understanding the UK AI labour market: 2020, 18 May 2021

6 DSIT, Digital skills and careers behavioural insights study 2023, 10 November 2023

7 DSIT, Boosting the uptake of digital courses and careers among A/T level students and university students (project 1),10 November 2023

Some of the barriers that were stopping young people move into digital training and careers included:

- Negative preconceptions of the tech sector, such as a perception of difficult and complex jobs, long and antisocial working patterns and high levels of discrimination.
- Barriers to retraining, such as a lack of awareness of upskilling opportunities, and the financial cost of retraining and switching careers.
- A lack of entry or junior levels roles in digital vacancies.[8]

1.2 Government initiatives to improve digital skills

Some of the government initiatives to support people into digital careers are outlined in this section.

Digital Skills Strategy and Council (June 2022)

The June 2022 Digital Skills Strategy included a focus on skills provision for the digital economy. Section 3 of the strategy reports on the measures that will be put in place to look to achieve this, and includes measures that look to improve digital education in schools, increase awareness of pathways into digital occupations, support people to develop advanced and lifelong digital skills.

The Government launched the Digital Skills Council in June 2022 with the aim of bringing together government and industry to address current and future skills challenges. The Council will look to:

- promote routes into digital careers and opportunities for the labour market to re-skill and up-skill to meet current and future employer needs.
- increase awareness of resources that enable pathways into digital and digitally enabled jobs for workers in non-digital roles.
- promote mechanisms to provide increasingly diverse access to digital roles and digitally enabled roles.[9]

8 DSIT, Boosting the uptake of digital careers among early career professionals and experienced professionals (project 2) ,10 November 2023

9 GOV.UK, Digital Skills Council

National AI Strategy

The Government published the National AI Strategy in September 2021 which set out a 10-year vision that businesses will have access to the people, knowledge and infrastructure that they will need "ahead of the transformational change AI will bring."[10]

The Skills and talent section of this strategy reports on how the Government intends to close the AI skills gap, with a focus on attracting and training people to develop AI, to use and apply AI in their jobs, and to inspire people to engage with AI.

The Government reported in November 2023 that it had invested £290 million in AI skills and talent initiatives since 2018, which included a £118 million skills package that was announced in October 2023.[11]

The Statutory digital entitlement: free Digital and IT qualifications

On 1 August 2020, the Government introduced a statutory digital entitlement, which provides free study for adults with low digital skills on a new essential digital skills qualification offer.[12] This statutory entitlement is set out in the Apprenticeships, Skills and Children Learning Act 2009.

Essential Digital Skills qualifications (EDSQs) are a new qualification type designed to meet the diverse needs of adults with no or low digital skills. They can have different objectives, reflecting different learning needs, motivations, and starting points. The specific content of EDSQs will vary depending on their purpose.

As part of their Digital exclusion inquiry, the House of Lords Communication and Digital Committee welcomed the introduction of the entitlement, but concluded that it "will not be the right solution for everyone". It heard evidence that the EDSQs were "too big a step" for digitally excluded people "who do not seek formal qualifications but would benefit from digital skills support in familiar, community settings".[13]

The entitlement is currently funded by the Adult Education Budget.

10 DSIT/DCSM/BEIS, National AI Strategy, 22 September 2021

11 DSIT, New business guidance to boost skills and unlock benefits of AI, 30 November 2023

12 DfE, Free qualifications for adults with low digital skills, 14 March 2024

13 House of Lords Communication and Digital Committee, Digital exclusion: Chapter 7: Skills, 29 June 2023

Reforms to school curriculum

From September 2014, maintained schools in England were required to teach a revised national curriculum.

The national curriculum isn't mandatory for academies and free schools, which now comprise the majority of secondary schools in England, but they are free to follow it in full or in part.

Revised computer science replaced Information and Communications Technology (ICT), which was the previous national curriculum subject. Unlike ICT, the revised computing curriculum teaches foundational skills such as computational thinking and programming.

Computing is a mandatory subject in the national curriculum until the end of key stage four – that is, throughout compulsory schooling. However, there's no requirement to sit exams in this subject at 16.

Entries into Computer Science GCSE and A levels

The number of entries into GCSE computer science has been gradually increasing in recent years, although so has the number of pupils sitting GCSEs overall.

Boys represent the vast majority of entrants into computer science GCSE. In the 2022/23 exam series, girls accounted for only 21% of entries. The gender entry gap increased after the move to computer science GCSE and away from ICT, and has then remained around the same since the new GCSE was first examined in summer 2018.[14,15]

There are other digital skills qualifications offered by some schools during the GCSE phase. Examples include Level one and two awards in digital information technology.

The gender gap is even more pronounced at A level, where males represent 92% of entries in computer science.[16]

How well is computing taught in schools?

In 2017, the Royal Society concluded that computing education across the UK was "patchy and fragile".[17]

14 Ofsted, Research review series: computing, 16 May 2022

15 Department for Education, Key stage four statistics, 2022/23 academic year, 1 February 2024, custom table

16 Department for Education, Academic year 2022/23, A level and other 16 to 18 results, 1 February 2024, custom table

17 After the reboot: computing education in UK schools, The Royal Society, November 2017, page 6

A May 2022 Ofsted subject report on computing looked at the factors associated with high-quality teaching, and also some of the challenges in delivering the subject.[18]

The report concluded:

- There were few specialist staff, and there was a "lack of new teachers to improve the situation". This, Ofsted concluded, would have "significant consequences for the quality of education that pupils receive in computing if nothing is done to remedy the situation."

- There should be a renewed focus on subject-specific continuing professional development (CPD) and improving subject knowledge and confidence.

Trainee secondary teachers who want to teach computing are currently eligible for the joint highest level of teaching bursary (£28,000 per year) and there are also competitive scholarships for trainees of £30,000 per year. These are payable during training. Levelling up payments and student loan payment rebates are also available to computing teachers working in qualifying schools and locations.

Adult Education Budget

The Adult Education Budget provides funding for adult education (excluding apprenticeships), community learning, and learner support. It fully funds or co-funds (when the student or their employer must pay part of the costs) skills provision for eligible adults aged 19 and above from pre-entry to level 3.[19]

The Adult Education Budget is targeted at groups of learners with low skills, including young adults, unemployed individuals actively seeking work, and employed individuals in receipt of a low wage.

As part of government reforms to further education funding and accountability, the Adult Education Budget will be replaced by the Adult Skills Fund from August 2024.[20]

Free level 3 qualifications

Since 1 April 2021, adults aged 19 and over who do not have a full level 3 qualification, which is equivalent to A levels or an advanced technical certificate or diploma, have been able to access fully-funded courses on an

18 Ofsted,

19 GOV.UK, What qualification levels mean

20 DfE, Implementing a new FE funding and accountability system, July 2023; Commons Library, Further education funding in England

approved list. There are over 400 qualifications available, including those linked with digital skills and careers.[21]

The qualifications funded through this offer have been identified for their strong wage outcomes and ability to meet skills needs. They include subjects such as digital, computer science, and cyber skills.

From April 2022, the policy has been expanded to also include any adult who is unemployed or earning under the National Living Wage, even if they hold a level 3 qualification or higher.

T Levels

T Levels are two-year technical courses taken after GCSEs and equivalent in size to three A Levels. Based on employer-led standards, they offer students practical and knowledge-based learning at a school or college, as well as on-the-job experience through an industry placement of approximately 45 days (20% of the course). For students who are not ready to start a T Level, a one-year, post-GCSE T Level foundation year (previously the T Level Transition Programme) has been designed.

The 2021 T Level action plan sets out the Government's ambition for T Levels to support progression directly into skilled employment, an apprenticeship at level 4 or higher, and degrees and other higher education courses in related technical areas.[22]

There are three Digital T Levels:

- Digital Production, Design and Development (available since September 2020)
- Digital Support Services (available since September 2021)
- Digital Business Services (available since September 2021)

In July 2023, Ofsted published a report on T Levels and the T Level Transition Programme that said there remained considerable work to do to improve the quality and effectiveness of both.[23] The report said that, at their worst, T Level courses are not what students expected, and many students have been misled and ill-informed about their content and structure. It also noted issues around teaching, staff recruitment and retention, and the quality of industry placements.

In September 2023, FE Week interviewed the Ofsted deputy director for further education, Paul Joyce, ahead of Ofsted starting to inspect T Levels as part of

21 Department for Education, Find a free level 3 qualification
22 Department for Education, T Level action plan: 2021, December 2021, pp31-7
23 Ofsted, T-level thematic review: final report, 20 July 2023

its regular inspections of further education providers.[24] Paul Joyce raised issues around public and employer awareness of T Levels and the ability to scale up placements as learner numbers increase.

More information on T Levels is available in the Commons Library briefing Technical Education in England: T Levels.

Higher Technical Qualifications

Higher Technical Qualifications (HTQs) are new or existing level 4 and 5 qualifications, such as higher national certificates (HNCs), higher national diplomas (HNDs), and foundation degrees. They sit between A Level/T Levels and degrees, and can be taught at a further education college, an independent training provider, or a university.

They have been developed with employers and must be approved by the Institute for Apprenticeships and Technical Education as meeting the knowledge and skills needed by a sector. The first HTQs to be approved, in September 2022, related to digital skills and careers, covering cyber security, software development, and computing.[25]

Since September 2023, HTQs that last at least a year in length are eligible for higher education student finance, meaning students can get both tuition fee and maintenance loans.

HTQs are an attempt by the Government to address the skills shortage that exists in the UK at higher technical levels. This was an issue highlighted by the Independent panel report (Augar report) to the Post-18 Education and Funding Review, which said England was an outlier by international standards, and that to match the proportion of learners studying Level 4 and 5 qualifications in Germany and the OECD average, England would need to double current numbers.[26]

The number of learners on classroom-based education and training courses at level 4 or higher was 13,000 in 2022/23. There was a rapid fall in their numbers between 2012/13 and 2014/15, some recovery in the late 2010s, before further falls in recent years. The 2022/23 figure was 62% below the 2012/13 level.[27] Trends are illustrated below.

---

24 "Q&A: Ofsted's verdict on T Levels", FE Week, 11 September 2023

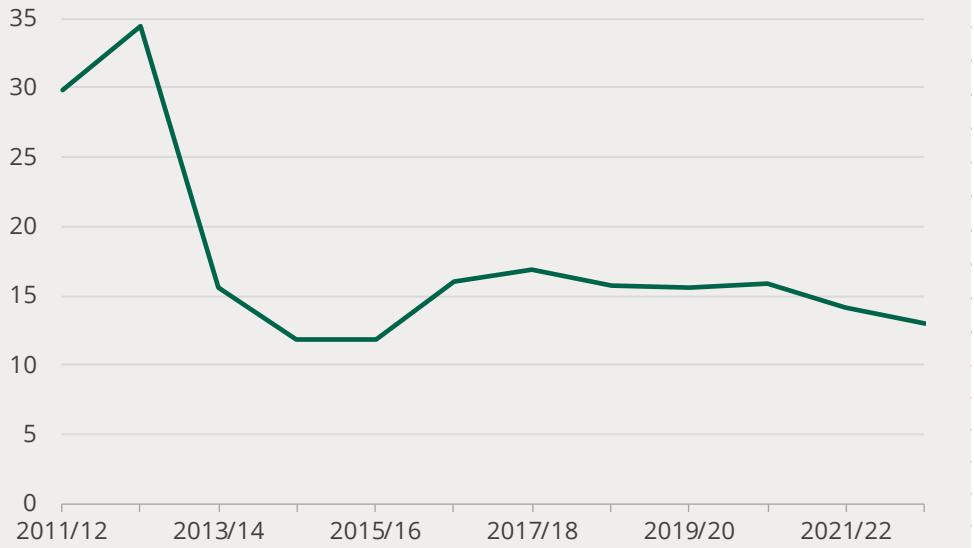
25 Institute for Apprenticeships and Technical Education, Approved Higher Technical Qualifications

26 Department for Education, Independent panel report to the Post-18 Education and Funding Review, 30 May 2019, p35

27 DfE, Further education and skills 2023/24 (and earlier)

Adult participation in education and training at level 4+ fell by almost two-thirds in early 2010s

Thousands. Learner volumes in England



Source: DfE, Further education and skills 2023/24 (and earlier)

Institutes of Technology

Institutes of Technology are partnerships between colleges, universities, and employers that specialise in delivering higher technical education.[28] While they offer a range of qualifications from level 3 (T Levels) to level 7 (Master's degrees), they specialise in level 4 and 5 technical skills in order to significantly increase the number of learners with higher technical qualifications, such as HTQs or higher and degree apprenticeships.

There are 19 Institutes of Technology currently open, with training delivered from over 80 sites in areas such as Yorkshire, the North West, North East, West Midlands, East Midlands, South West, London, and the South East. Two more Institutes of Technology, covering Cheshire and Staffordshire, will open in September 2024.

Apprenticeships

Between August 2023 and January 2024, there have been 15,000 starts across 30 digital and IT related apprenticeships. Of these 6,400 have been at advanced level (level 3) and the other 8,700 have been at higher level (level 4 or higher). 2,800 have been at degree level (level 6 or 7).[29]

[28] Department for Education, Institutes of Technology

[29] DfE, Explore Education Statistics: Apprenticeships, 21 March 2024

There have been 140,000 starts on digital and IT related apprenticeships since August 2017, with 25,000 starts in the 2023/24 academic year.

The first AI related apprenticeship was approved in May 2020.[30] There have been 920 starts in the Artificial Intelligence Data Specialist level 7 apprenticeship by January 2024.

The table below provides the number of starts in each of these apprenticeships since August 2017:

Starts in ICT related apprenticeships

2017/18 to 2023/24 academic years (2023/24 only includes August to January)

Apprenticeship	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	August 2017 to January 2024
Data Analyst (ST0118)	790	1,760	2,370	3,720	4,020	5,380	3,530	21,570
Data Technician (ST0795)	0	0	0	1,200	2,890	4,310	3,020	11,420
Information Communications Technician (ST0973)	0	0	0	160	3,820	3,560	1,750	9,290
Digital and Technology Solutions Professional (ST0119)	1,310	1,510	1,670	1,450	1,580	1,940	1,680	11,140
Business Analyst (ST0117)	180	480	590	480	800	1,460	920	4,910
Digital Marketer (ST0122)	2,660	3,090	1,940	3,190	3,380	2,290	890	17,440
Digital and Technology Solutions Specialist (Integrated Degree) (ST0482)	0	180	460	590	620	810	520	3,180
Software Developer (ST0116)	580	910	780	1,050	1,040	960	410	5,730
Network Engineer (ST0127)	470	530	630	820	910	920	330	4,610
Cyber Security Technologist (2021) (ST1021)	0	0	0	20	320	430	240	1,010
Artificial Intelligence (AI) Data Specialist (ST0763)	0	0	0	100	240	350	230	920
Data Scientist (Integrated Degree) (ST0585)	0	0	120	140	240	220	230	950
Digital Support Technician (ST0120)	0	20	80	280	450	460	230	1,520
IT Technical Salesperson (ST0115)	330	400	280	450	570	490	200	2,720
DevOps Engineer (ST0825)	0	0	90	210	330	260	190	1,080
IT Solutions Technician (ST0505)	0	10	130	350	370	280	130	1,270
Software Development Technician (ST0128)	660	700	430	410	460	330	110	3,100
Cyber Security Technical Professional (Integrated Degree) (ST0409)	0	30	50	70	100	110	70	430
Software Tester (ST0129)	110	140	130	170	130	190	70	940
Digital Learning Designer (ST0974)	0	0	0	0	0	0	60	60
Digital User Experience (UX) Professional (Integrated Degree) (ST0470)	0	0	0	40	70	100	60	270
Digital Product Manager (ST0964)	0	0	0	0	0	0	40	40
Applications Support Lead (ST0949)	0	0	0	0	0	50	30	80
Cyber Security Technician (ST0865)	0	0	0	20	40	30	20	110
Game Programmer (ST0953)	0	0	0	0	10	30	20	60
Radio Network Technician (ST0757)	0	0	0	40	70	40	20	170
Digital Accessibility Specialist (ST0863)	0	0	0	0	0	10	10	20
Junior Animator (ST0488)	0	0	0	0	10	0	10	20
Unified Communications Technician (ST0130)	290	420	330	550	30	30	10	1,660
Cyber Intrusion Analyst (ST0114)	10	20	10	0	0	0	0	40
Cyber Security Technologist (ST0124)	240	320	250	270	30	10	0	1,120
Infrastructure Technician (ST0125)	2,900	3,270	2,550	2,430	70	20	0	11,240
IT and Telecoms Professionals	6,880	6,690	4,960	150	200	50	0	18,930
IT User	1,080	610	380	30	20	10	0	2,130
Unified Communications Trouble Shooter (ST0131)	20	40	20	40	0	0	0	120
Total	18,480	21,110	18,230	18,400	22,820	25,100	15,020	139,160

[30] IfATE, Artificial Intelligence Data Specialist (accessed 8 April 2024)

Skills Bootcamps

Skills Bootcamps are free courses that run for up to 16 weeks for adults aged 19 or over who are either in work or recently unemployed, giving them the opportunity to build up sector-specific skills and get a fast-track interview with a local employer.[31] They are developed in partnership with employers, colleges, training providers, and local authorities. The primary aim of the programme is to support people to get better jobs and improve productivity.

A list of Skills Bootcamps is available on GOV.UK. The majority of Skills Bootcamps procured in the 2022/23 financial year were in digital skills, covering areas such as cyber security, coding, software development and engineering, data analysis, and digital marketing.[32]

There were 16,100 Skills Bootcamp starts in England in the 2021/22 financial year, and 40,000 in 2022/23.[33]

Of the 2,800 participants in 2020/21, 2,210 (79%) completed the bootcamp. Slightly over half of those who completed the bootcamp reported a change in their employment.[34] [35]

Skills Bootcamps are funded through the National Skills Fund.[36] At the Spending Review in November 2020, the Chancellor announced £375 million in National Skills Fund investment,[37] including £43 million for skills bootcamps in the 2021-22 financial year.[38]

At the 2021 Spending Review, a further £550 million investment over the next three financial years was announced to expand Skills Bootcamps.[39] At the spring 2023 Budget, the government announced an additional £34 million to increase the numbers of Skills Bootcamps, with an aim of delivering 64,000 training places from next year.[40]

The most recent evaluation report for Skills Bootcamps, published in March 2023, found the programme enabled participants to train in areas that were previously inaccessible and helped some employers to fill vacancies.[41] However, 21% of survey respondents felt there was insufficient time to learn

[31] GOV.UK, Find a Skills Bootcamp

[32] PQ9359 [Digital Technology: Training] 19 January 2024

[33] DfE, Skills Bootcamps starts, 9 November 2023

[34] Explore Education Statistics, Skills Bootcamps outcomes Financial Year 2020-21, 9 December 2021

[35] Change in employment includes a new job, new/increased responsibilities or a new role in existing job, or new opportunities for those who are self-employed

[36] DfE, National Skills Fund consultation response, April 2022

[37] HM Treasury, Spending Review 2020, November 2020, p62

[38] PQ 68265 [Skills Bootcamps] 2 November 2021

[39] HM Treasury, Autumn Budget and Spending Review 2021, October 2021, pp96-97

[40] Department for Education Education Hub blog, Budget 2023: What are 'returnerships' and who are they for?, 17 March 2023

[41] Department for Education, Evaluation of Skills Bootcamps: wave 2 implementation report, 30 March 2023

the necessary skills and knowledge in their Skills Bootcamp, and this was especially the case for participants on some Digital courses, such as coding, software development, and cybersecurity.[42]

[42] Department for Education, Evaluation of Skills Bootcamps: wave 2 implementation report, 30 March 2023, p43

2 Press articles

‘Expectations will shift dramatically’: tech jobs move from science fiction to fact: Roles in cutting-edge science and AI will grow in demand, but tech will transform all jobs

Cristina Criddle and Clive Cookson

Financial Times, 21 January 2024

Almost 60% of UK workers have had no digital skills training

Clare McDonald

Computer Weekly, 1 December 2023

Government response to digital exclusion recommendations lacking, say Lords

Clare McDonald

Computer Weekly, 21 November 2023

Yawning skills gaps pose ‘a real challenge’: Employers say the needs of industry are often evolving more quickly than education

Bethan Staton

Financial Times, 3 November 2023

Warning of digital skills shortage as AI take-up booms

Laura Wildenberg

The Times, 30 October 2023

UK government allowing ‘millions to fall behind’ due to digital exclusion

Clea Skopeliti and Rachel Obordo

The Guardian, 29 June 2023

Technology and the Skills Shortage: Governments and businesses alike face formidable challenges in equipping the workforce for the modern digital economy

Lucy Colback

Financial Times, 18 May 2023

Tech skills shortfall frustrates start-ups looking to hire: Smaller companies in UK face long delays to recruit as competition grows

Cristina Criddle

Financial Times, 16 April 2023

Lack of training blamed for widening digital skills gap

Richard Tyler

The Times, 8 December 2022

Young people ‘lack skills for digital age’

Tom Saunders

The Times, 10 November 2022

Why ‘digital literacy’ is now a workplace non-negotiable

Alex Christian

BBC, 27 September 2022

UK tech talent shortage threatens to stifle growth in the industry

BBC, 15 July 2022

3 Parliamentary material

3.1 Written questions

Question for Department for Education: ICT: Training: UIN 17980

Asked by Rachael Maskell

Answered on 11 March 2024

To ask the Secretary of State for Education, what steps she is taking to ensure that (a) adults and (b) young people have sufficient IT skills for work.

Answered by Robert Halfon

Answered on 14 March 2024

Digital and computing skills are critical to achieving the government's science and technology superpower ambitions, which the department set out in the UK Science & Technology Framework in March this year.

The department has developed an ambitious skills agenda, backed by an additional £3.8 billion in further education and skills over the lifetime of this parliament. Through the Adult Education Budget (AEB), the department introduced a new legal entitlement in August 2020 to fully fund adults (19+) with low digital skills to undertake an Essential Digital Skills Qualification, up to Level 1. The department has further enhanced the offer by introducing Digital Functional Skills qualifications in August 2023. These qualifications were developed through employer supported National Standards and provide learners with the essential digital skills they need to participate actively in life, work and society.

The department has also taken steps to embed essential digital skills training as part of study programmes for 16 to19 year olds. Where students are identified as having low levels of digital skills, education providers will integrate essential digital skills development, where it is needed, into their learning programme.

The department has also funded community learning and other non-regulated learning, such as building confidence in essential digital skills, through the AEB. Many local authorities and other further education providers are already delivering these courses that help equip adults with the essential digital skills they need for work, life and further learning.

From next year, the Adult Skills Fund (ASF) will continue to support both qualifications and tailored learning, which includes community learning type provision, so adults can retrain and upskill in the most effective way.

Ensuring that all children, regardless of their background, have the world class computing and digital knowledge and skills they need for the future is a key priority of this government. The department introduced computing as a statutory national curriculum subject in 2014, from key stages 1 to 4 inclusive. The new computing curriculum supports pupils to become digitally literate and acquire the knowledge and skills they need to become competent, confident, and creative users of technology. Through computing, pupils are taught how to analyse problems in computational terms and write computer programs, how to use technology safely and responsibly, and how to create digital artefacts.

The department has invested significantly in the National Centre for Computing Education (NCCE) to improve the teaching of computing and drive up participation in computer science at GCSE and A level. To date, over 13,000 teachers have engaged with subject knowledge courses offered by the NCCE, helping to create more confident teachers of computing.

The department has introduced three Digital T Levels: Digital Business Services, Digital Production, Design and Development, and Digital Support Services. These are the gold-standard Level 3 technical qualifications, designed with employers to meet industry standards and with a significant industry placement built in. These will help to give important experience of work within the digital sector. Digital skills are increasingly important across all occupations, which is why every T Level has the digital skills necessary for employment embedded into its curriculum.

Additionally, employers have developed more than 30 high-quality digital apprenticeships to support them develop the skilled workforces they need. Apprenticeships include Level 3 Information Communications Technician, Level 3 IT Solutions Technician and Level 3 Digital Support Technician. In the 2022/23 academic year, the number of starts in the Information and Communication Technology sector subject area grew to 25,100 starts, up 10% from 22,820 from 2021/22. The department is increasing investment in the apprenticeships system in England to £2.7 billion by the 2024/25 financial year to support employers of all sizes and in all sectors offer high-quality apprenticeship opportunities.

Employers can also make use of the department's Skills Bootcamp offer, which provides free, flexible courses of up to 16 weeks, giving people the opportunity to build up sector-specific skills.

Question for Department for Education: Technology: Training: UIN 901510

Asked by Elliot Colburn

Asked on 8 February 2024

To ask the Secretary of State for Education, what discussions she has had with Cabinet colleagues on developing tech skills in the workforce.

Answered by Robert Halfon

Answered on 21 February 2024

Science, technology, engineering and mathematics (STEM) talent and skills are a vital strand of the government's UK Science and Technology Framework, published in 2023, which aims to cement the UK's status as a science and technology superpower by 2030.

The department is working with the Department for Science, Innovation and Technology, including through government-industry groups such as the Digital Skills Council. This brings together government and industry to address current and future demand for digital skills, including promoting routes into digital careers and the range of opportunities to re-skill and up-skill.

The department is making it easier for people of all ages and backgrounds to access the STEM training they need through the ladder of opportunity provided by our skills system reforms, including:

- Investment of £3.8 billion over the course of this parliament to strengthen higher education (HE) and further education (FE).
- Scaling up delivery of apprenticeships, T Levels, Skills Bootcamps, and Higher Technical Qualifications, and establishing our network of 21 Institutes of Technology.

There are over 350 high-quality, employer-designed STEM apprenticeships and from 2024 students will be able to apply for apprenticeships on the UCAS website. The number of digital, ICT practitioner apprenticeship starts have increased year-on-year since 2019/20, with 24,140 starts in the 2022/23 year (over 40% increase compared to starts in the 2019/20 year).

Over 1,000 Skills Bootcamps are available across the country, offering training in tech subjects such as software development, cyber security and data analytics.

The introduction of a Lifelong Learning Entitlement will transform access to FE and HE, offering all adults the equivalent of four years' worth of student loans to use flexibly on quality education and skills training over their lifetime.

These programmes are achieving the vision set out in the UK Science and Technology Framework to boost the supply of tech skills.

Question for Department for Education: Digital Technology: Training: UIN 9357

Asked by Tanmanjeet Singh Dhesi

Asked on 12 January 2024

To ask the Secretary of State for Education, whether she has made an assessment of the effectiveness of digital skills training initiatives in bridging skills gaps in the technology sector.

Answered by Robert Halfon

Answered on 19 January 2024

Digital and computing skills are critical to achieving the department's science and technology superpower ambitions, which were set out in the UK Science & Technology Framework in March 2023. Programmers, data scientists, and software engineers will help deliver the department's ambitions for critical technologies like artificial intelligence, but their importance is not limited to these technologies. These roles are fundamental across the labour market, with 60% of businesses believing their reliance on advanced digital skills will increase over the next five years.

The importance of digital skills goes far beyond supporting specific growth industries. They are increasingly a foundation for the economy and society, as essential to employability and participation in society as English and mathematics. That is why the department has developed an ambitious skills agenda, backed by an additional £3.8 billion in further education and skills over the lifetime of this Parliament.

The department's essential digital skills offer plays an important role in both the wider department digital offer, which will equip people with the right digital skills to progress into rewarding careers or higher-level technical study, and the department's wider support for the government's new Digital Strategy, led out of the Department for Science, Innovation and Technology, which sets out the vision for harnessing digital transformation, accelerating growth, and building a more inclusive, competitive and innovative digital economy for the future.

Through the Adult Education Budget (AEB), the department has introduced a new legal entitlement in August 2020 to fully fund adults (19+) with low digital skills to undertake an Essential Digital Skills Qualification, up to Level 1. The department has further enhanced the offer by introducing Digital Functional Skills qualifications in August 2023. These qualifications were developed against employer supported National Standards and provide learners with

the essential digital skills they need to participate actively in life, work and society.

The department has also taken steps to embed essential digital skills training as part of study programmes for 16–19-year-olds. Where students are identified as having low levels of digital skills, education providers integrate essential digital skills development, where it is needed, into their learning programme.

Formal qualifications are not appropriate for everyone, which is why the department also funds community learning and other non-regulated learning, such as building confidence in essential digital skills, through the AEB. Many local authorities and other further education providers are already delivering these courses that help equip adults with the essential digital skills they need for work, life and further learning.

The department is investing in employer-led technical skills and education, with courses and training in digital subjects often at the forefront of our reforms, from digital literacy to skills for advanced digital roles. These are key in expanding our offer and providing alternative routes, as the department is aware that the traditional route does not suit everyone or every community. For example:

- Apprenticeships provide a fantastic opportunity for people to acquire the knowledge and skills needed to progress into digital occupations, and the department is increasing investment in apprenticeships to £2.7 billion by 2024/25 to support employers of all sizes to grow their apprenticeships workforce. Employers in the digital sector have so far developed 30 high-quality digital apprenticeship standards across all levels in occupations such as Data Science, Cyber Security, Digital and Technology solutions and Artificial Intelligence. Digital Apprenticeships continue to grow with over 22,000 starts in 2022/23, an increase of 19% from the previous year.

- The department has also introduced 3 Digital T Levels, the gold-standard level 3 technical qualification designed with employers to meet industry standards and with a significant industry placement built in, to give that all-important experience of work within the digital sector. The department offers a number of mechanisms to evaluate T Levels including the Technical Education Learner Survey and regular engagement with providers and employers.

- Skills Bootcamps are free, flexible courses of up to 16 weeks, for adults aged 19 or over. There are now more than 1,000 Skills Bootcamps available across England, and the majority of Skills Bootcamps procured in the 2022/23 financial year were in digital skills. Skills Bootcamps in digital cover areas such as cyber security, coding, software development and engineering, data analysis and digital marketing.

- The most recent evaluation report for Bootcamps (Wave 2 implementation report), published in March 2023, has found that many participants felt that the training would allow them to 'get a better life', through improved job prospects and stability. A further release will be published in early 2024 covering completions and outcomes data for this cohort with the evaluation of the 2022/23 financial year delivery available at a later date.

- Launched in April 2021, the Free Courses for Jobs offer allows eligible adults to access over 400 Level 3 qualifications (A level equivalent) for free, including those linked with digital careers. These courses are ideal for those adults over 50 without a Level 3 qualification that are looking to improve their digital skills, retrain or upskill to meet their potential.

Through the skills reforms, the department is continuing to ensure learners are supported, including those who need the most support, to train, retrain and upskill so they can climb the ladder of opportunity towards better jobs, better wellbeing and better options for the future.

Question for Department for Education: Digital Technology: Education: UIN 147051

Asked by Julian Knight

Asked on 17 February 2023

To ask the Secretary of State for Education, what steps her Department is taking to improve digital skills in schools.

Answered by Nick Gibb

Answered on 27 February 2023

Ensuring that all children, regardless of their background, have the digital and computing knowledge they need for the future is a priority of this Government.

The Department introduced computing as a statutory National Curriculum subject in 2014, to replace the subject of information and communications technology (ICT) which had been widely regarded as outdated. The computing curriculum is designed to ensure that all pupils are taught how to evaluate and apply information technology and how digital systems work, alongside the fundamental principles and concepts of computer science and e safety. From Key Stage 1, pupils are taught how to write computer programs, and England was one of the first G20 countries to introduce coding into the primary curriculum.

The GCSE and A level were reformed in 2016 and 2015 respectively, as part of the Department's wider reform to establish a suite of qualifications which are in line with expected standards in countries with high performing education systems. There are also a range of high quality ICT related vocational and technical qualifications available that are counted in the Key Stage 4 and Key Stage 5 performance tables, providing alternative pathways for digital careers.

The Department has established the National Centre for Computing Education (NCCE) to support teachers of computing, backed by over £100 million of funding across November 2018 to August 2025. The NCCE provides free, high quality, continuing professional development and teaching resources through a network of over 30 computing hubs across England. To date, the NCCE's achievements include equipping over 7,600 secondary teachers with the subject expertise they need to confidently teach the GCSE through the Computer Science Accelerator programme, and the launch of the Teach Computing Curriculum in July 2020, which consists of over 500 hours of teaching resources, which have been downloaded 1.6 million times by teachers in English schools.

Question for Department for Science, Innovation and Technology: Digital Technology: Training: UIN 198197

Asked by Carol Monaghan

Asked on 6 September 2023

To ask the Secretary of State for Science, Innovation and Technology, whether her Department plans to increase funding for digital inclusion and skills.

Answered by Paul Scully

Answered on 11 September 2023

Digital Skills

The Government recognises that digital skills are becoming ever more important in the economy. Last year, we launched the UK Digital Strategy(opens in a new tab), which set out our commitment to develop digital skills across the whole of the UK.

To grow the digital workforce in the UK, the government has introduced a range of interventions across the digital skills pipeline and at all levels. This includes ensuring there is a range of flexible courses available for people already in the workforce. As part of Skills for Life, the government launched Skills Bootcamps, which offer free, flexible courses lasting up to 16 weeks, with a guaranteed job interview at the end. The Department for Education is increasing investment to up to £150 million this year.

To provide people with the opportunity to develop specialised AI and data skills, even for those who have no previous experience, the government has made a £30 million investment via two phases in AI and Data science conversion courses. The government is committed to ensuring the tech sector is diverse, which is why the government has funded scholarships for underrepresented groups to earn a masters degree on these courses, and has supported the Tech Talent Charter (TCC) since 2017.

Digital Inclusion

The government is committed to closing the digital divide and meeting our commitment that nobody should be left behind in the digital age. This directly supports the UK's Digital Strategy (opens in a new tab)and its "vision to enable everyone, from every industry and across the UK, to benefit from all that digital innovation can offer."

Supporting people to engage in an increasingly digitalised world involves overcoming the barriers to access, skills, motivation and trust identified in the government's digital inclusion strategy. A range of departments support the government's approach to removing these barriers.

The Department for Science, Innovation and Technology is tackling these issues by continuing to invest in digital infrastructure to broaden gigabit-capable and mobile-network coverage. To support low income households stay connected, the Government continues to work with telecoms providers to ensure market provision of low-cost broadband and mobile tariffs.

The Department for Education are providing access to essential digital skills courses through the Essential Digital Entitlement and the Adult Education budget. The Department for Culture, Media and Sport are leveraging our national network of libraries to serve as an alternative point of internet access with in-person support. Department for Work and Pensions are referring claimants to essential digital skills courses to improve their chances of securing employment and supporting eligible claimants with the provision of devices and connectivity connection. Cabinet Office is setting an example by monitoring the accessibility of all public sector websites to make sure that everyone, including people with disabilities and impairments, can access public services.

Question for Department for Business and Trade: Small Businesses: Digital Technology: UIN HL9044

Asked by Lord Taylor of Warwick

Asked on 4 July 2023

To ask His Majesty's Government what steps they are taking to equip small and medium-sized enterprises with digital skills to help facilitate their growth.

Answered by The Earl of Minto

Answered on 17 July 2023

The Government is ensuring that SMEs are equipped with digital skills in various ways.

We have launched eight Local Digital Skills Partnerships across England to tackle digital skills gaps including for small businesses and set up a Digital Skills Council which is focused on increasing industry uptake of digital apprenticeships, particularly for SMEs.

The Help to Grow: Management scheme is helping SMEs improve their leadership and management capability including their ability to adopt digital technology, and the Made Smarter programme supports digital transformation, including digital leadership skills, for SME manufacturers.

3.2 Debates

Digital Exclusion

HC Deb 28 Feb 2024, c 189WH-208WH

Educational Technology

HL Deb 23 Nov 2023, c 109GC-124GC

3.3 Committee reports

Digital Exclusion

House of Lords Communications and Digital Committee, HL Paper 219, 29 June 2023

Disclaimer

The Commons Library does not intend the information in our research publications and briefings to address the specific circumstances of any particular individual. We have published it to support the work of MPs. You should not rely upon it as legal or professional advice, or as a substitute for it. We do not accept any liability whatsoever for any errors, omissions or misstatements contained herein. You should consult a suitably qualified professional if you require specific advice or information. Read our briefing 'Legal help: where to go and how to pay' for further information about sources of legal advice and help. This information is provided subject to the conditions of the Open Parliament Licence.

Sources and subscriptions for MPs and staff

We try to use sources in our research that everyone can access, but sometimes only information that exists behind a paywall or via a subscription is available. We provide access to many online subscriptions to MPs and parliamentary staff, please contact hoclibraryonline@parliament.uk or visit commonslibrary.parliament.uk/resources for more information.

Feedback

Every effort is made to ensure that the information contained in these publicly available briefings is correct at the time of publication. Readers should be aware however that briefings are not necessarily updated to reflect subsequent changes.

If you have any comments on our briefings please email papers@parliament.uk. Please note that authors are not always able to engage in discussions with members of the public who express opinions about the content of our research, although we will carefully consider and correct any factual errors.

You can read our feedback and complaints policy and our editorial policy at commonslibrary.parliament.uk. If you have general questions about the work of the House of Commons email hcenquiries@parliament.uk.