



Enginuity response to 'Fit for the future: Growing and sustaining engineering and technology apprenticeships for young people': Inquiry led by Lord Knight and Lord Willets

27 February 2023

Seven points of focus

As a sector, Engineering and Manufacturing (E&M) is focused on continuously improving the quality of and access to apprenticeships, and we have set out seven points of focus for England which will help us to achieve our goals. We also want to hear about and get behind the great ideas of others.

Focus 1: Respect for technical skills.

It is vital that incentives are built into the system to help achieve parity of esteem between technical and vocational qualifications, and academic achievements.

Focus 2: Levelling up.

We must maintain a strong focus on the flow of apprentices joining the sector at Level 2 and 3, even as we expand the purpose of apprenticeships to embrace degree-level studies.

Focus 3: Energising the Levy.

We call on policymakers to reform the Apprenticeship Levy so that it supports flexible training beyond the existing standards. Transferring Levy funds throughout the supply chain must be simplified.

Focus 4: Data is king.

The sector would benefit enormously from the rigorous collection and timely publication of data on apprenticeship investment, by level and by SSA Tier 1, to inform debate and problem solving. Outcomes and destination data should be made available to assist sectoral discussions and enhance opportunities to promote apprenticeships to new entrants.

Focus 5: Opening doors.

The sector's ability to imaginatively recruit under-represented groups to apprenticeships and T Levels would benefit from a refreshed and re-energised working relationship with government. Potential entrants need clarity on the options and employment pathways available to them from the start.

Focus 6: Fair wage for all.

Working together, employers and government must improve financial incentives and review apprentice salaries particularly at Levels 2 and 3 in order to offer fair pay rates and opportunities that are regarded as aspirational.

Focus 7: Essential skills.

We call on the government to support employers as they address the increasing proportion of E&M apprentices who need additional support with Maths and English.

Introduction

Enginuity

1. Enginuity is a registered charity which acts as the sector connector for the advanced manufacturing and engineering industry. We marry engineering skills with ingenuity with data to design and constantly improve tools and solutions that enable individuals, employers, education providers and governments to plan and meet their skills and workforce needs.
2. One of the key goals of Enginuity is to promote, and improve the quality of, UK apprenticeships in Engineering and Manufacturing through both direct interventions and effective engagement with stakeholders across industry and government.

Definitions

3. In this response, when the term “Engineering and Manufacturing” or “E&M” is used in an English context, it refers to the SSA Tier 1 “Engineering and Manufacturing Technologies” defined by the Department for Education in England (DfE) in its apprenticeship and trainee statistics. This is a narrower definition than the term “Engineering and Technology” used in the Call for Evidence which includes three DfE SSA Tier 1 sectors: “Engineering and Manufacturing Technologies”, “Construction Planning and the Built Environment”, and “Information and Communication Technology”. When “Engineering or Manufacturing” or “E&M” is used in this response in a UK-wide context, we are also referring to the “Engineering and Energy Related” category for apprenticeships in Scotland, and the “Engineering and Manufacturing Technologies” category for apprenticeships in Wales. We have not included apprenticeship data for Northern Ireland, as sector categories are reported based on participation rather than starts.
4. The information, views and conclusions set out in this response reflect the categorisations we have used. Care should be taken in comparing with other responses which have based their analysis and views on the broader categorisation set out in the Call for Evidence.

The four nations

5. The four nations have separate apprenticeship systems with different characteristics. Among the four nations, England’s system has diverged the most due to the reforms introducing Occupational Standards and End Point Assessments. The systems of the other three nations are all grounded in the National Occupational Standards (NOS), providing a degree of commonality.
6. The apprenticeship systems across the four nations share many challenges, but there are also some differences in the challenges they face. It is a pragmatic approach to consider the systems separately, so we have focussed in this response on the apprenticeship system in England, which we think is the key concern of this consultation. However, it is worth noting the concern amongst some pan nation employers that increasing divergence is not good for them or their apprentices.

Opportunities

What part do apprenticeships play in helping to meet the UK's skills needs in engineering and technology?

The foundation of training in the E&M sector in the UK

7. Apprenticeships have always been the foundation of training in the E&M sector in the UK and are still valued across the sector today. They have given generations of people the chance to learn, build, make, and create, while meeting their professional and personal goals.
8. Apprenticeships continue to play a central role in the talent pipeline for the E&M sector through-out the UK and provide training in skills that are desperately needed across the sector, particularly at Levels 2 and 3. Apprenticeships are particularly valuable for both apprentices and employers because they are traditionally underpinned by recognised qualifications. E&M employers value the mix of practical and theoretical skills that apprenticeships provide, while apprenticeships provide people with direct access to a rich and rewarding career in a diverse and dynamic sector.
9. We welcome new options for vocational training, such as Engineering and Manufacturing T Levels in England and modular qualifications, and acknowledge the key role of other important vocational qualifications, like BTECs. However, apprenticeships are, and will remain, the foundation of training in E&M.

Demand for engineering skills

10. There continues to be strong demand for engineering professionals. Apprenticeships are a fundamental means of meeting that demand. Between January 2020 and December 2022, there were a huge number of unique job postings for Engineering jobs across the four nations.¹

| Country | Unique Job Posting (Jan 2020 – Dec 2022) |
|------------------|---|
| England | 558,030 |
| Scotland | 46,108 |
| Wales | 18,165 |
| Northern Ireland | 11,951 |

¹ Lightcast Q2 2022 Data Set, February 2023.

Emerging technology and rapid change

11. The apprenticeship system will play a hugely important role in ensuring that the E&M sector can respond effectively to emerging technology and a rapidly changing environment.
12. The system needs to be flexible so that it can respond and adapt rapidly to introductions of technology and changing skills needs. A flexible system will ensure that young people are equipped with skills that enable them to realise their career ambitions, and industry is provided with the actual skills it needs and has confidence in the system's capability to deliver those skills over the lifetime of its investments.
13. The E&M sector has a long tradition of utilising technology to improve the performance of roles. In the Engineering and Manufacturing Route Review, IfATE noted the importance of continuing to consider how new and emerging technology can be integrated into training and job roles. Trailblazers should continue to consider how new and emerging technology can be integrated into training and job roles.²
14. It is vitally important that occupational standards are adapted through a degree of 'digital flex' as technology changes, rather than returning to the beginning of the process. The current system remains too long-winded, too cumbersome, and too slow to react to increasingly rapid changes in technology and industrial practices.

Skills needed for sustainability and net zero

15. The E&M sector will continue to play a key role in supporting environmental sustainability and the transition to net zero. The apprenticeship system needs to be able to deliver the skilled workers to achieve this. If we fail to train workers with the right skills, we will either fail to achieve our objectives or have to outsource to other countries who planned more effectively.
16. It is critical that the apprenticeship system fully reflects technological and other changes, that IfATE responds to them as rapidly as possible, and that training providers are resourced to deliver the training. The Scottish Apprenticeship Advisory Board (SAAB) published a useful paper on how to embed sustainability into apprenticeships.³ The report emphasises the critical importance of supporting employers and industry to reflect sustainability practices in their work, which could be mirrored in English apprenticeships. The SAAB recommended:
 - Using the term 'sustainability' and referring to 'green competencies/skills' in relation to specific types of skills,

² <https://www.instituteforapprenticeships.org/reviews-and-consultations/route-reviews/engineering-and-manufacturing-route-review-report/>

³ Scottish Apprenticeships Advisory Board, *Sustainability in Scottish Apprenticeships: A system-level approach to the net zero transition*, November 2021. <https://www.skillsdevelopmentscotland.co.uk/media/48534/sustainability-in-apprenticeships-full-report.pdf>

- Supporting employers to develop and reflect sustainable work practices which can be mirrored in apprenticeships, incorporating a range of cross-sectoral, sectoral and occupational approaches,
- Using a multistakeholder approach to focus on relevant competencies and engage with other skills bodies,
- Taking a phased/iterative approach to reflecting sustainability, and
- Ensuring stakeholders receive the necessary support.

The role of AI and machine learning

17. It is topical at the moment to mention the implications of advances in Artificial Intelligence. While it is not yet clear where these technologies are on the curve for development and take-up, they are likely to have a significant impact on both administrative and technical roles.
18. The rapid advance of AI and machine learning technologies underscores the importance of the ‘digital flex’ described above. For example, an electrician will always need a solid core of technical knowledge (Ohm’s law, for example, is not subject to technological change) as well as problem-solving, adaptability and learning skills.⁴ But the nature of the occupation of electrician will change with the constant pace of technological change.
19. To keep pace with these types of technological developments, the apprenticeship system and occupational standards need to be flexible enough to allow people to learn new skills and go on to do other related types of work.

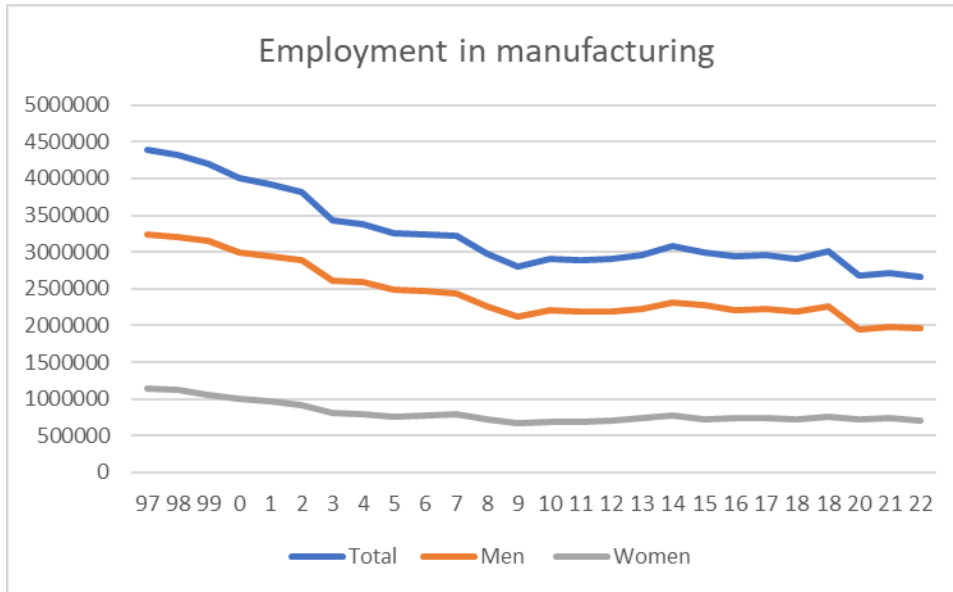
State of Play

What are the reasons behind the overall decline in engineering apprenticeship starts in recent years? We are particularly interested in understanding more about supply and demand.

Trends in employment in manufacturing

20. Employment in manufacturing has declined significantly since 1996, although numbers largely stabilised over the decade before the covid pandemic, when there was a further drop. As the industry shed roles, a decline could have been expected in apprenticeships and other active workforce succession activities.

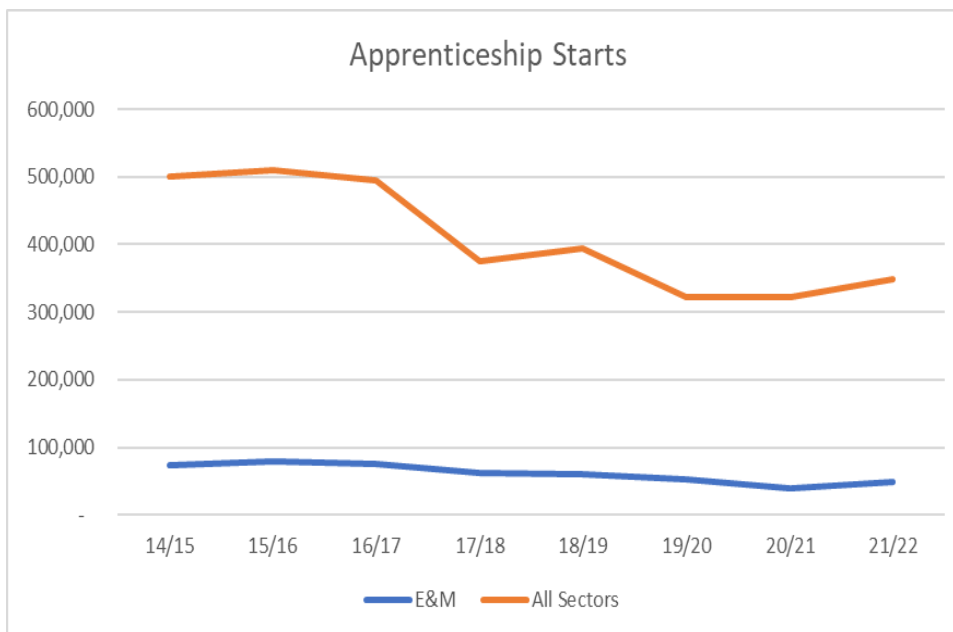
⁴ This category of skills is referred to in Scotland by the term ‘meta-skills’, which is a useful categorisation.



Source: ONS EMP 13: Employment by Industry (April-June Quarter)

Trends in E&M apprenticeships starts in England

- 21. Overall apprenticeship numbers have fallen since 2015/16. E&M has followed the decline, but at slightly more than the average, from 14.8% of total apprenticeships in 2014/15 to 14% in 2021/22. Both All Sectors and E&M experienced a positive bounce in 2021/22 as the economy began to re-open from the Covid pandemic.



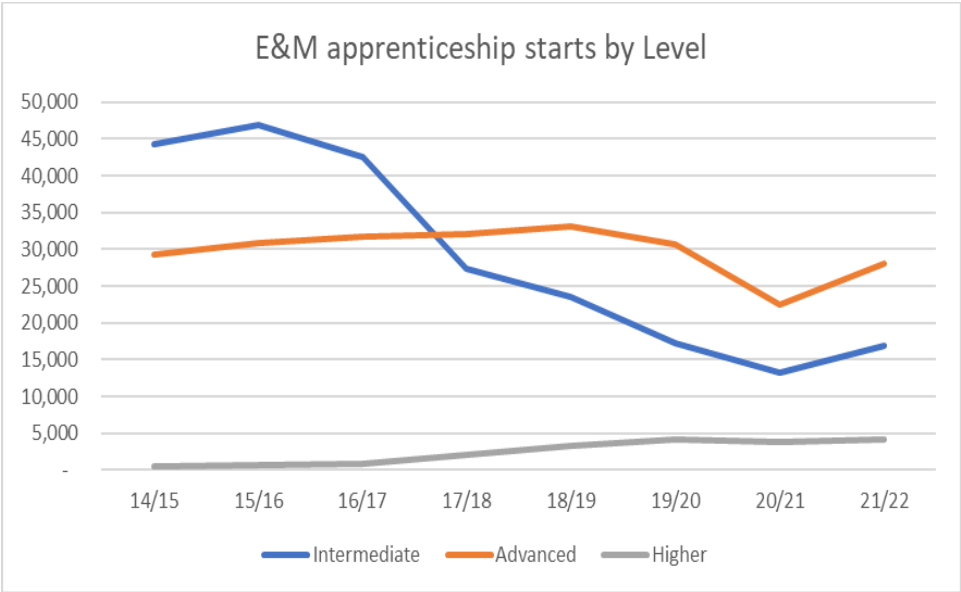
Source: DfE Apprenticeships and traineeships statistics

The effect of changes in apprenticeship structure

- 22. Under frameworks, apprentices generally progressed from Level 2 to Level 3. This is evident in the graphs below which show Level 2 predominating across

sectors in 2014/15, with significant Level 3 apprenticeships, and few apprenticeships above Level 3. Under standards, each apprenticeship is an occupation in its own right, rather than a progression in skill level. This change generally removed the role of Level 2 apprenticeships as the usual prerequisite for access to a Level 3 apprenticeship.

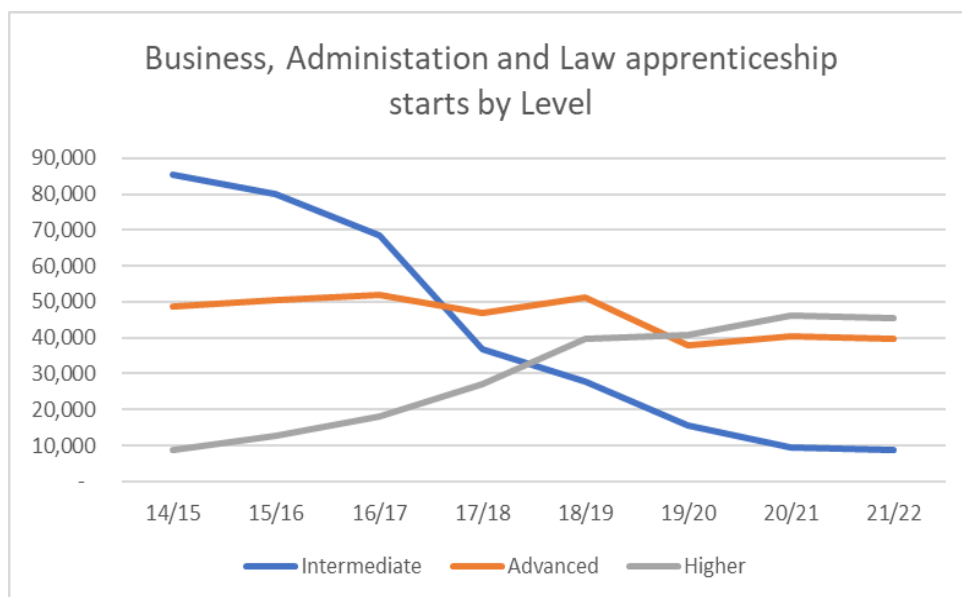
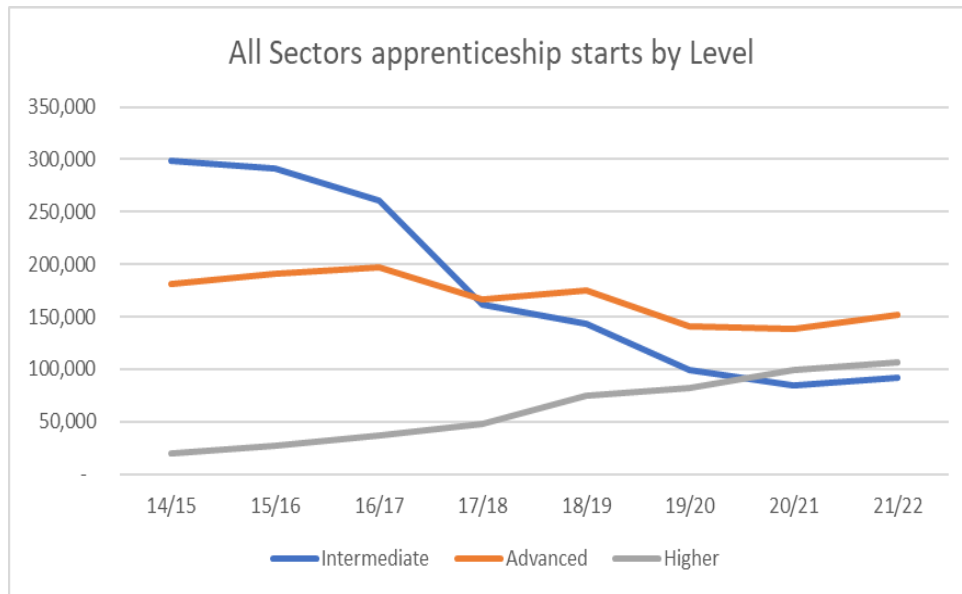
- 23. Since the introduction of occupational standards and the apprenticeship levy, there has been a significant fall in Level 2 apprenticeships. It is possible that most of this fall is because apprentices, under standards, access a Level 3 (or higher) apprenticeship directly. If most of the fall in Level 2 apprenticeships can be attributed to this, the situation looks more positive, with Level 3 apprenticeships remaining relatively stable (if Covid-related factors are discounted), and higher apprenticeships increasing.
- 24. However, while much of the decline in Level 2 apprenticeships may be due to the change to occupational standards, it is important to emphasise that there is an ongoing need for Level 2 apprenticeships in the E&M sector, with many of the roles in the sector at Level 2. Level 2 apprenticeships are also an important stepping-stone into meaningful and rewarding work for many people who may not have the academic background for a Level 3 apprenticeship.
- 25. The fall in Level 2 apprenticeships may also be impacting diversity in the sector and social mobility. Unfortunately, statistics are not available on the characteristics of people who were not able to enter an E&M apprenticeship because a Level 2 apprenticeship was not available. If they were, they may have reinforced the importance of continuing to focus on adequately promoting and funding E&M apprenticeships at Level 2.
- 26. In the graphics below, Intermediate refers to Level 2, Advanced to Level 3, and Higher to Levels 4-7.



Source: DfE Apprenticeships and traineeships statistics

E&M in comparison with other sectors

27. The two other sectors presented here have had similar experiences to E&M, with significant declines in Level 2, relative stability at Level 3, and major increases in higher Levels. Some other sectors have changed more dramatically than E&M where Levels 2 and 3 remain at the core of apprenticeships.



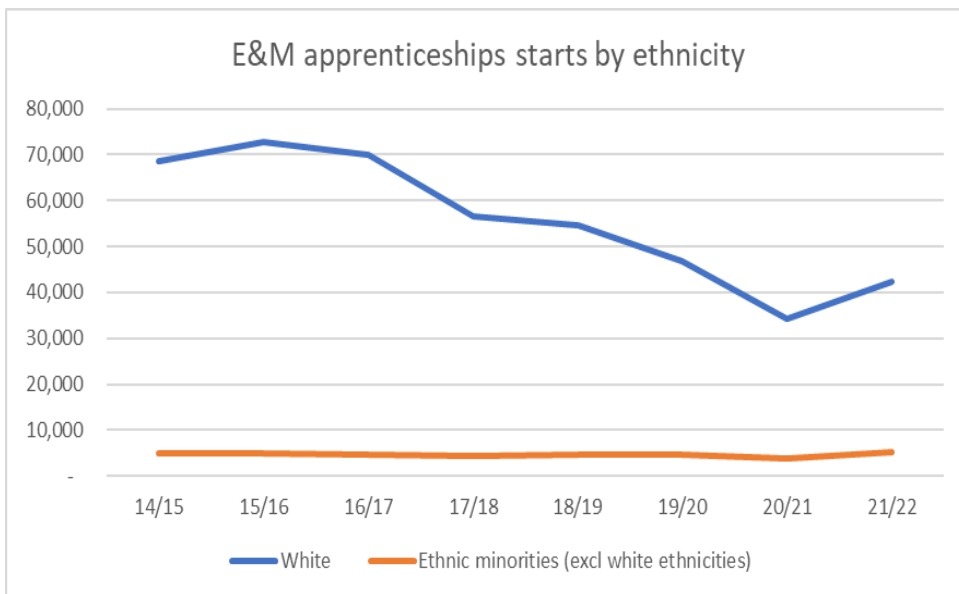
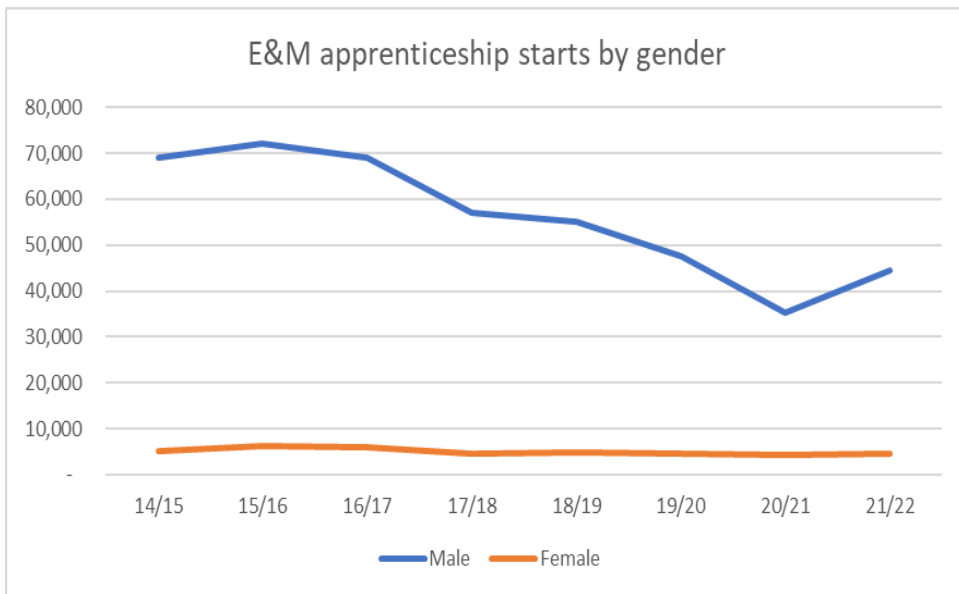
Source: DfE Apprenticeships and traineeships statistics

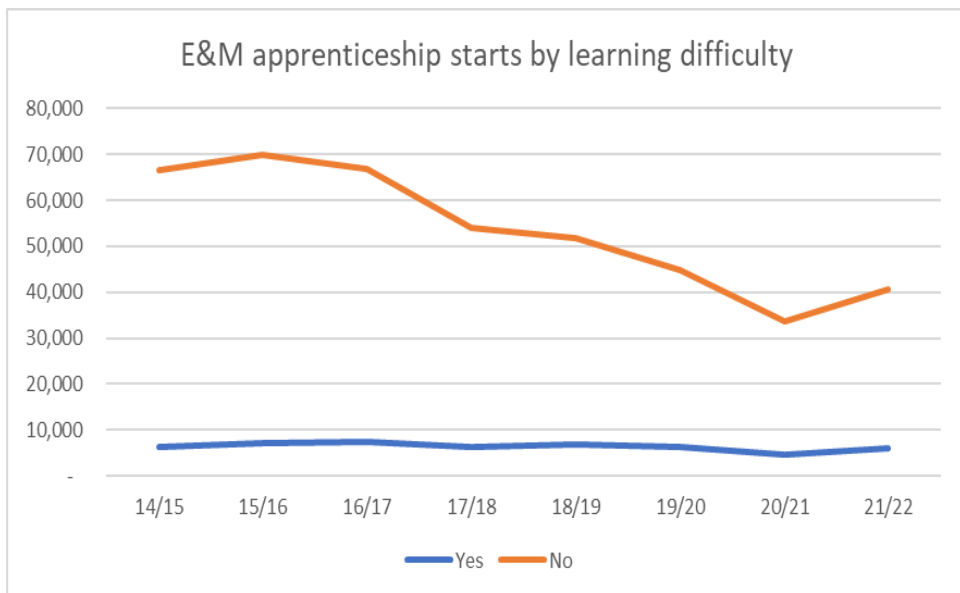
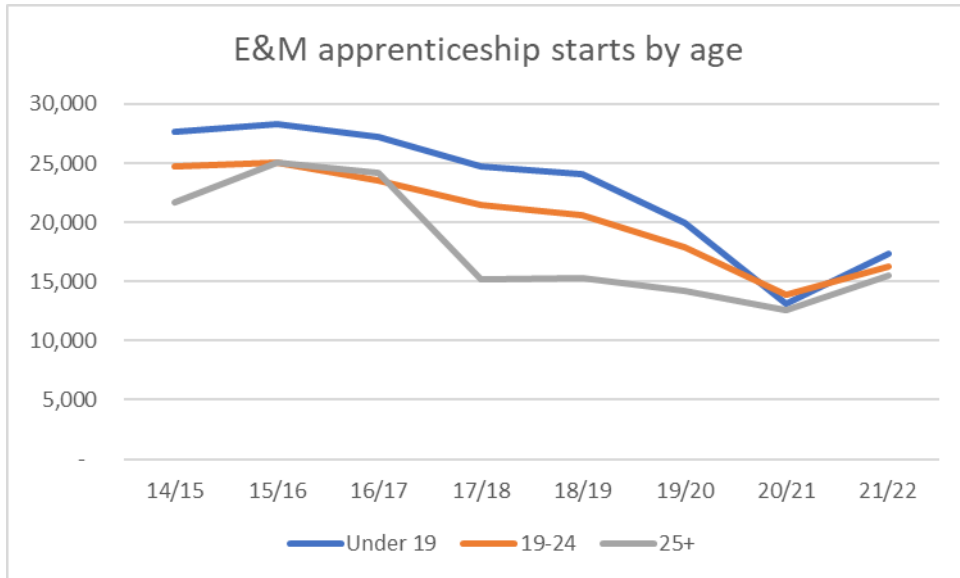
Demographics

28. Overall, the outcome of efforts to increase the numbers of E&M apprenticeships held by females and members of ethnic minorities (excluding white ethnic minorities) have been disappointing, with intakes of both groups remaining generally stable since 2014/15. The fall in total apprenticeships has

led to an increase in the percentage of under-represented groups, but it is more helpful to focus on actual numbers in assessing the effect of interventions.

29. At the same time, the number of white males entering E&M apprenticeships may have declined significantly, although this may be largely because apprentices under standards are completing only a Level 3 apprenticeship, rather than both Level 2 and 3 apprenticeships.
30. E&M apprenticeships have declined relatively uniformly across age groups, with slightly greater falls among participants under 19. The percentage of participants in E&M apprenticeships who indicate they have a learning difficulty and/or disability has increased.

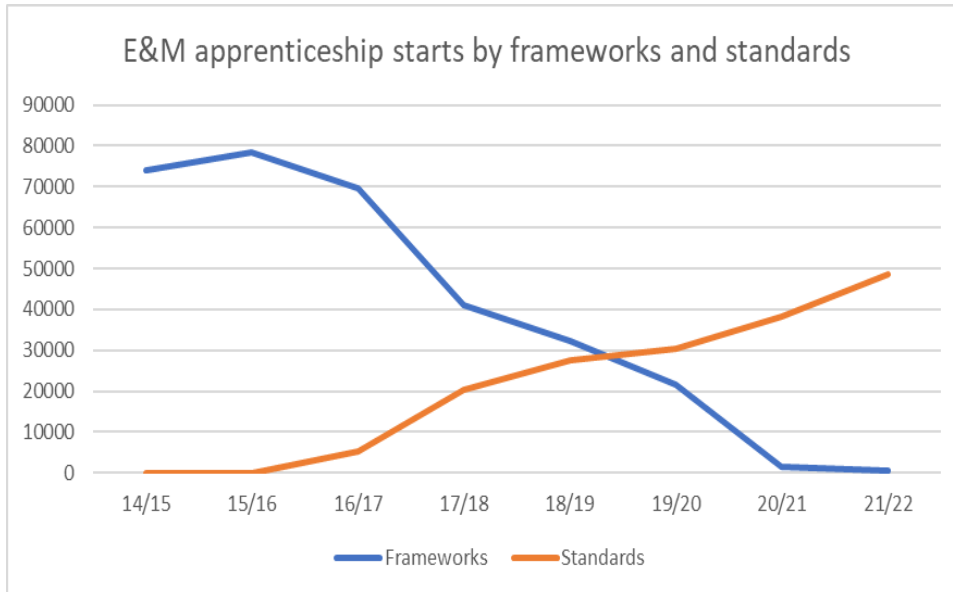




Source: DfE Apprenticeships and traineeships statistics

Apprenticeship frameworks versus standards

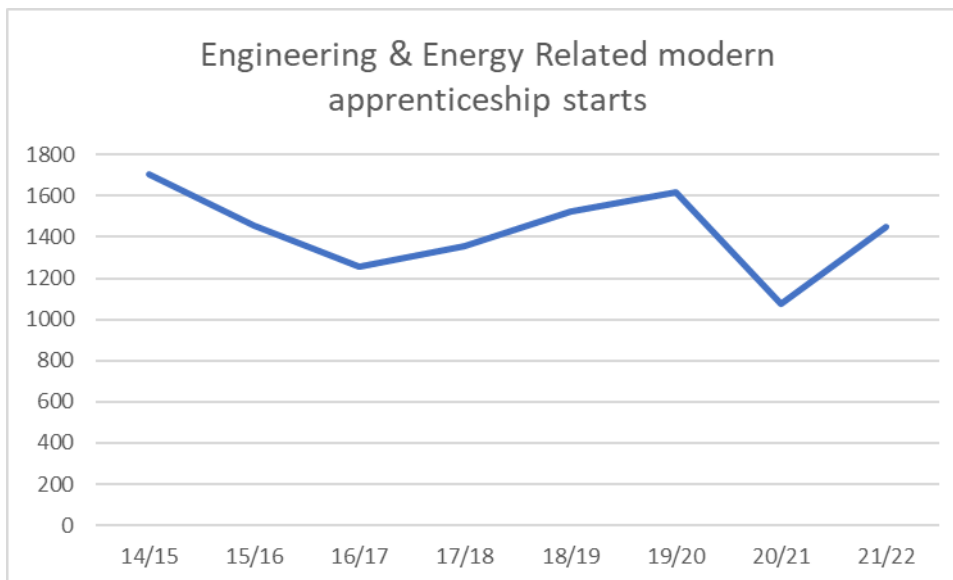
- Starts in E&M apprenticeship standards have not kept pace with the removal of frameworks, although this may be largely because apprentices under standards are completing only a Level 3 apprenticeship, rather than both Level 2 and 3 apprenticeships.



Source: DfE Apprenticeships and traineeships statistics

Trends in Engineering and Energy Related apprenticeships starts in Scotland

32. In Scotland, where frameworks are still used, starts in Engineering and Energy Related modern apprenticeships have remained relatively stable. Modern apprenticeships in Scotland are at SCFQ Level 5 to 7.⁵

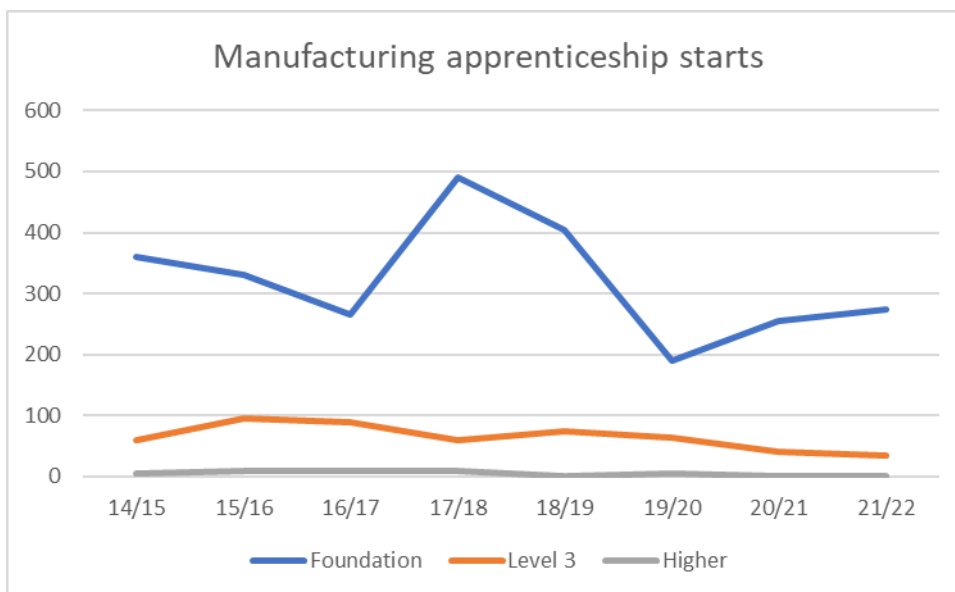
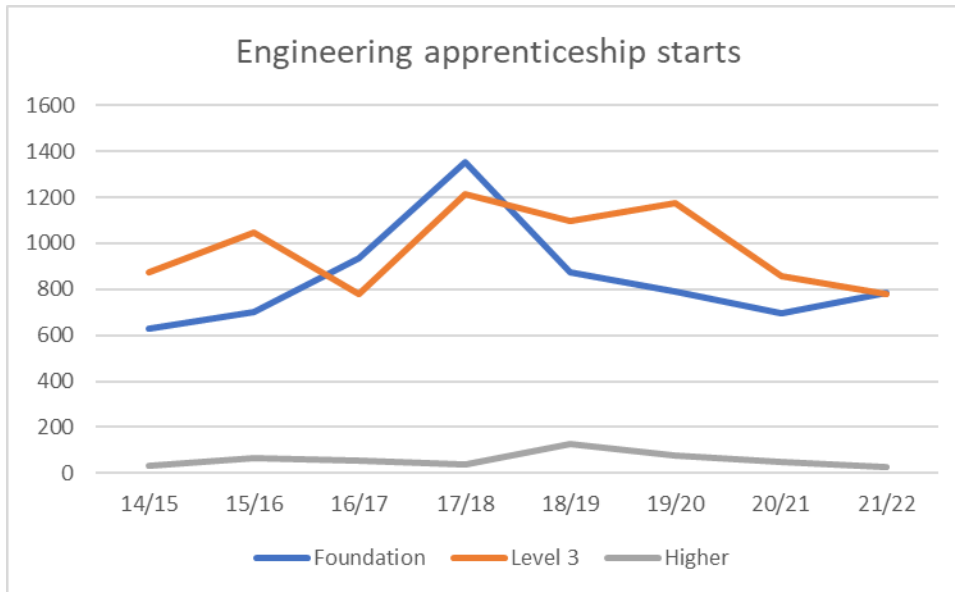


Source: Skills Development Scotland statistics

⁵ <https://scqf.org.uk/about-the-framework/interactive-framework/>

Trends in E&M apprenticeships starts in Wales

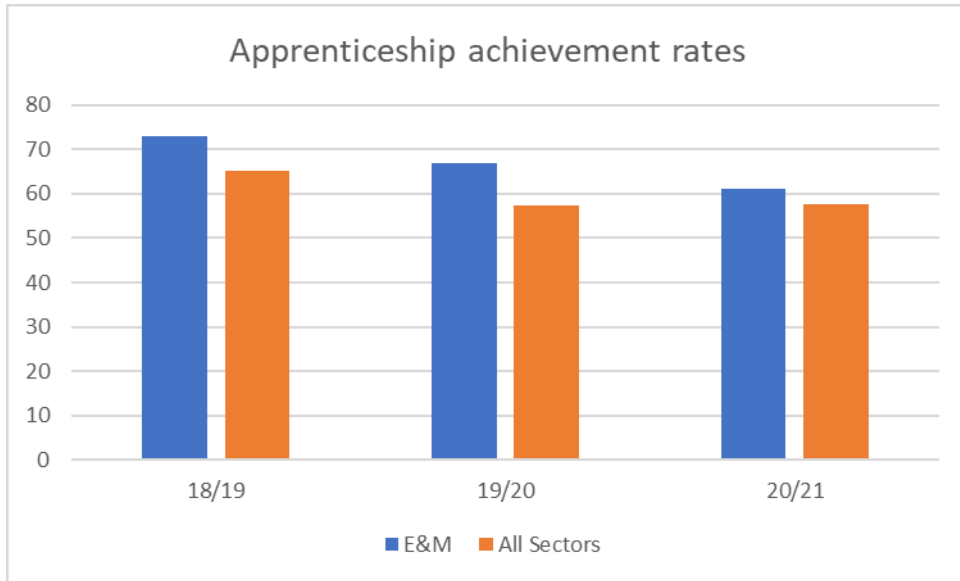
33. Wales has maintained a more traditional apprenticeship system based on frameworks, with a continued focus on lower Levels. In the graphics below, Foundation refers to Level 2 and Higher to Levels 4 and above.



Sources: StatsWales apprenticeship statistics

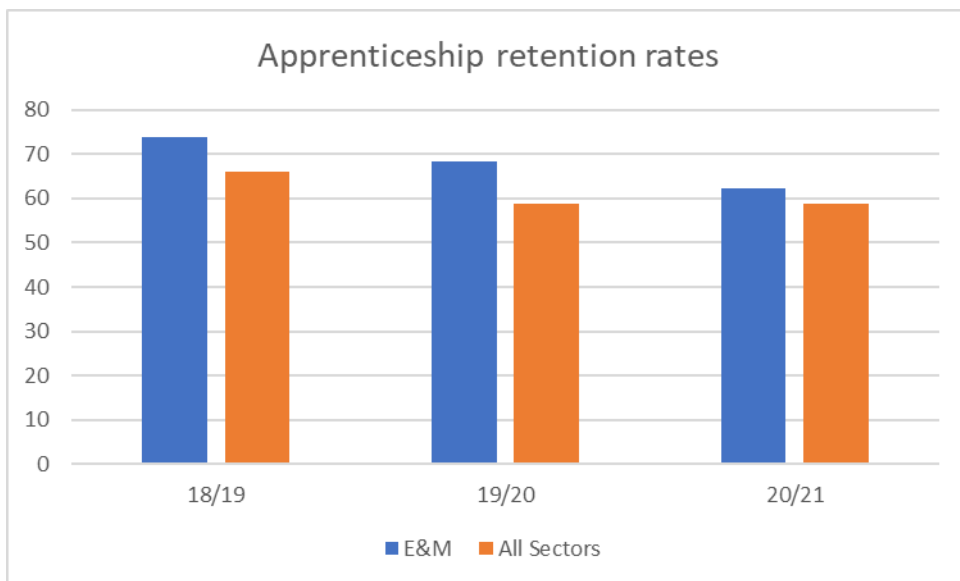
Trends in E&M apprenticeship achievement and retention rates in England

34. It is important to consider achievements and retention rates in addition to numbers of starts. Achievement rates have been falling in both E&M and All Sectors.



Source: DfE Apprenticeships and traineeships statistics

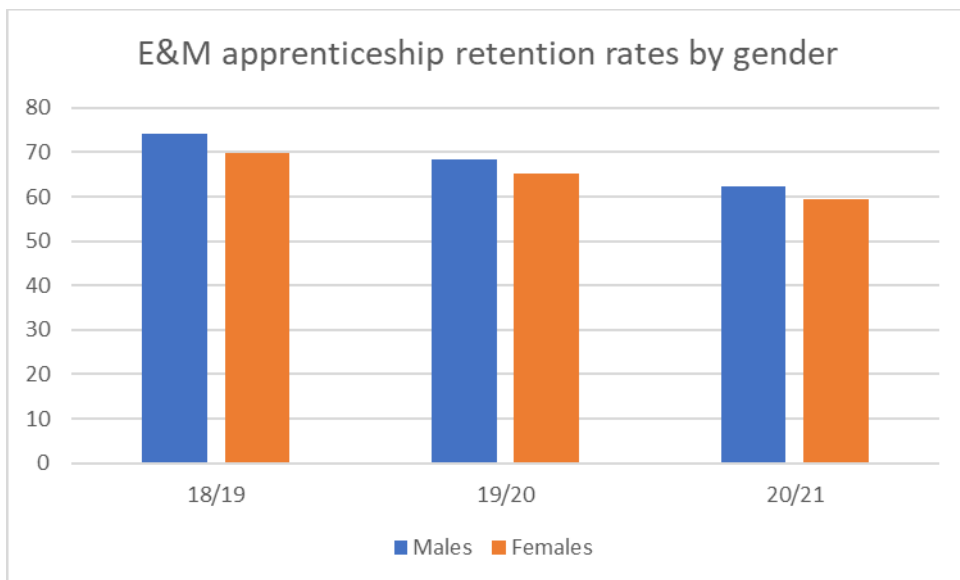
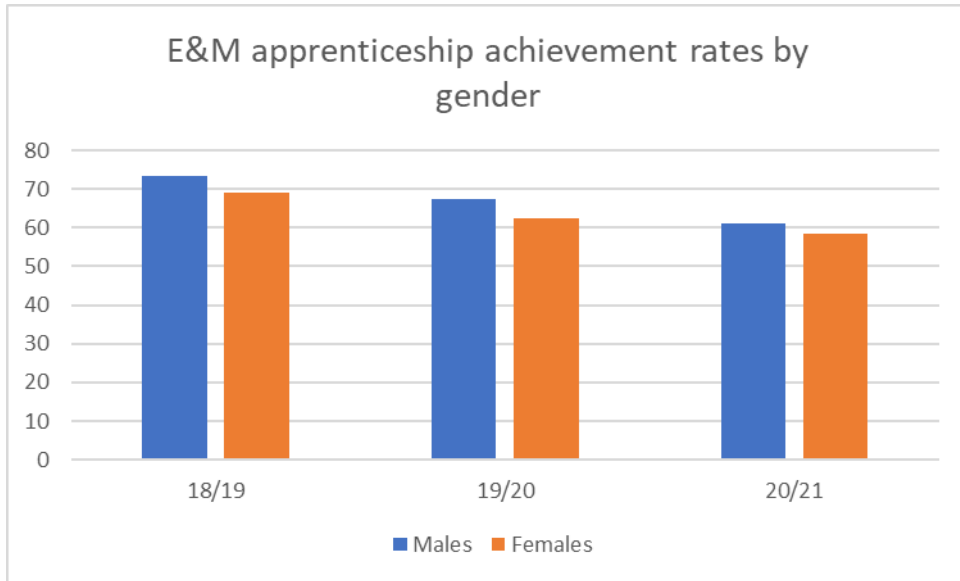
35. Retention rates look very similar to achievement rates because pass rates are extremely high, with generally only about 1-2% of completing apprentices failing to achieve.



Source: DfE Apprenticeships and traineeships statistics

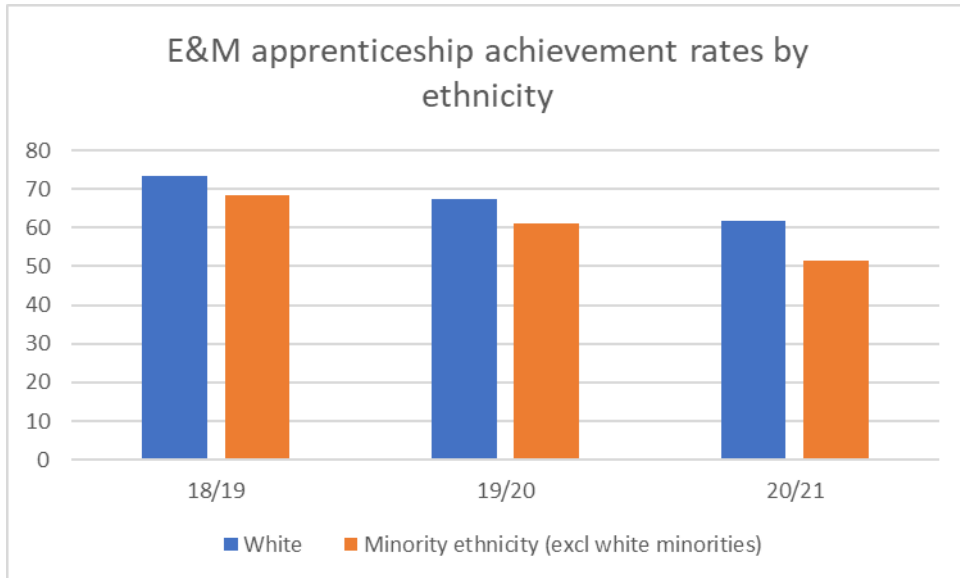
Demographics

36. Females have slightly lower retention and achievement rates than males.



Source: DfE Apprenticeships and traineeships statistics

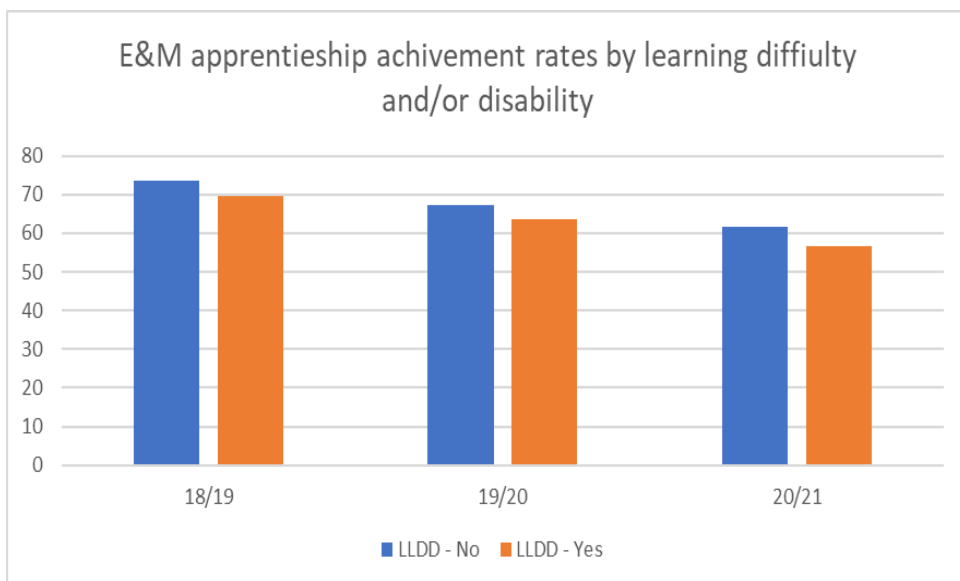
- 37. Members of ethnic minorities (excluding white ethnic minorities) also have slightly lower achievement rates than their white peers.



Source: DfE Apprenticeships and traineeships statistics

Achievement rates by learning difficulty and/or disability

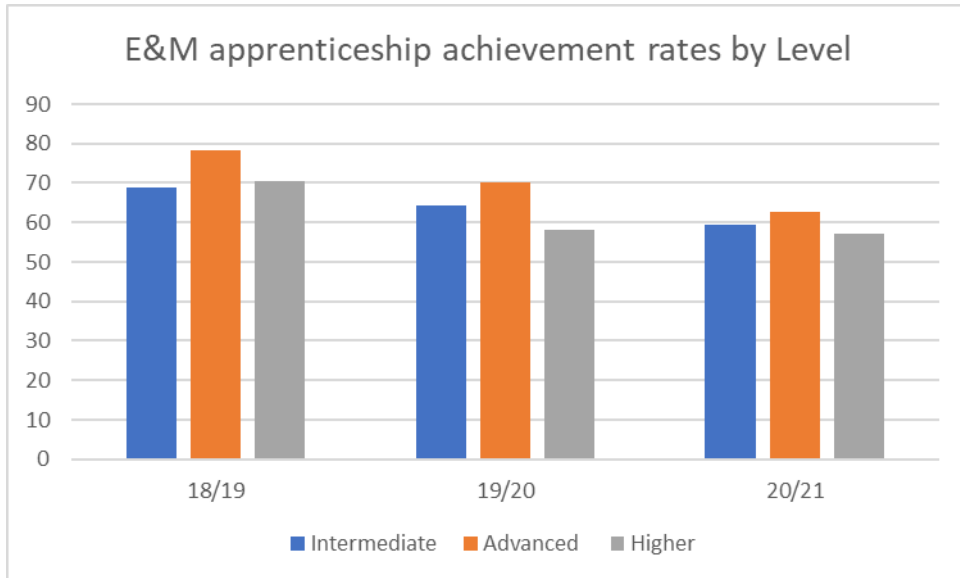
38. Apprentices with learning difficulties and disability (LDD) have slightly lower achievement rates than apprentices without LDD.



Source: DfE Apprenticeships and traineeships statistics

Levels

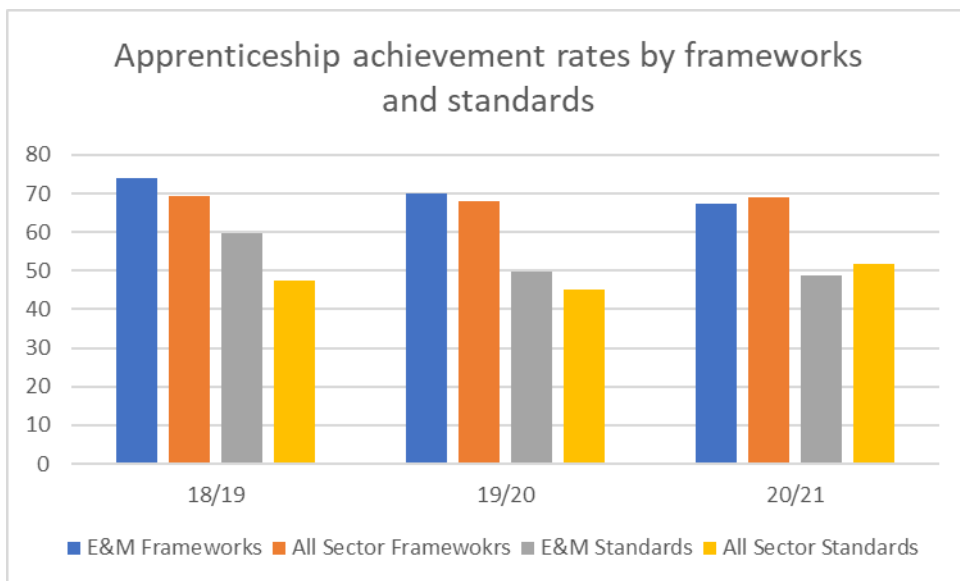
39. Achievement rates have declined similarly across Levels.



Source: DfE Apprenticeships and traineeships statistics

Achievement rates for frameworks and standards

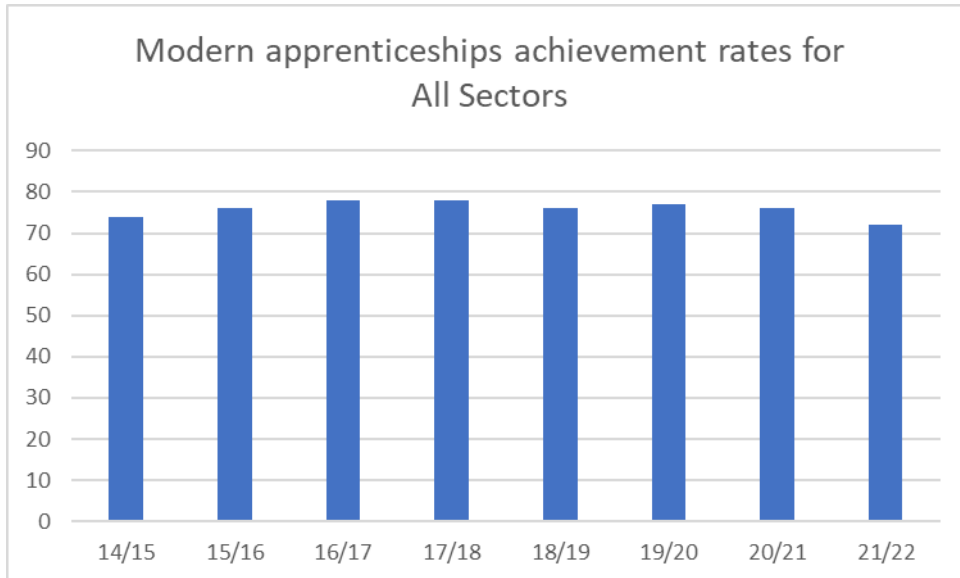
40. Standards have significantly lower achievement rates than frameworks, and are declining in E&M.



Source: DfE Apprenticeships and traineeships statistics

Trends in apprenticeship achievement rates in Scotland

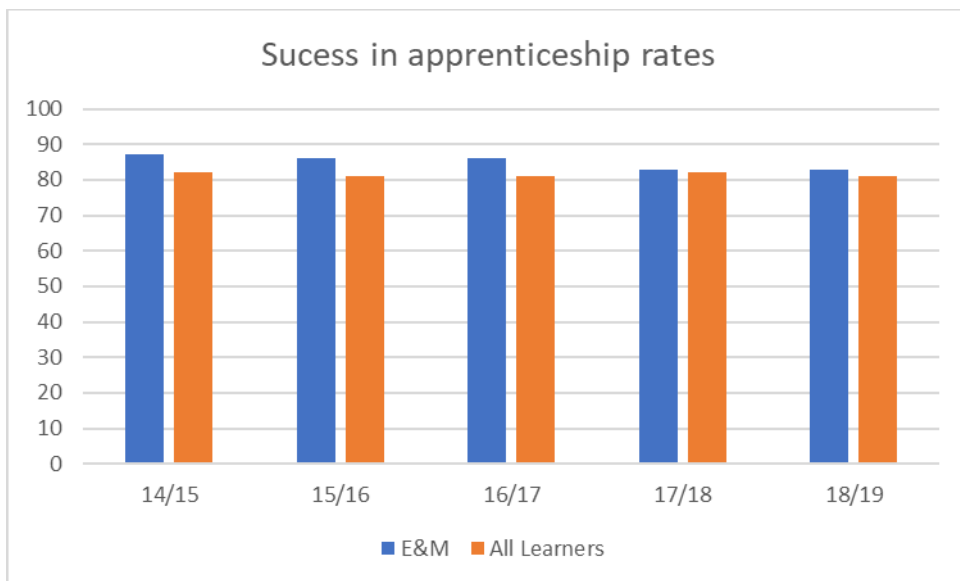
41. Scotland's classification system differs from England's, so care should be taken in making comparisons at a sectoral level. Interesting, overall achievement rates in Scotland are relatively similar to the achievement rates for frameworks in England.



Source: Skills Development Scotland modern apprenticeship statistics

Trends in apprenticeship achievement rates in Wales

42. Wales has significantly higher success rates for apprenticeships than England, with Engineering and Manufacturing Technologies being among the best performers. Unfortunately, success data does not seem to have been published after the 2018/19 year.⁶



Source: Statswales

⁶ <https://statswales.gov.wales/Catalogue/Education-and-Skills/Post-16-Education-and-Training/Further-Education-and-Work-Based-Learning/Outcomes/Work-Based-Learning/successapprenticeships-by-sectorsubjectarea-level>

Possible reasons for low standards' achievement rates in England

43. Achievement rates in England for standards have constantly been significantly lower than for frameworks. The system is clearly not delivering as intended.
44. Further work is urgently required to determine why achievement rates for standards are low in E&M, as well as other sectors, and why they are falling in the E&M sector. We also need to understand what is happening to the people who do not achieve their apprenticeships.

Covid

45. The Covid pandemic may have had an impact on achievement rates for standards although the exact impact is not clear. It is possible that Covid related delays in end point assessments (EPA) may have led to understandable frustration and higher drop-out rates. Apprentices may also have been laid off during Covid.

Standards are more rigorous

46. One cause of lower achievement rates for standards compared to frameworks, may be that standards are on average more challenging for learners. It is possible that the move to standards is a step-change which has introduced structurally lower achievement rates. This hypothesis is perhaps supported by achievement rates in Scotland and Wales remaining similar to English achievement rates under frameworks.

The End Point Assessment

47. IfATE has recently completed a consultation which included a proposal to integrate qualifications with the EPA. The purpose of the proposed change is to improve the retention rate by attaching greater value to the EPA. The implication is that some apprentices and employers are satisfied with obtaining the qualifications and do not see the value added by the EPA. This could have been exacerbated by delays in EPA caused by the Covid pandemic.
48. Therefore, the EPA may be a part cause of the lower achievement rates for standards in comparison to frameworks (although not an explanation for declines in standards achievement rates in E&M).

Changes in demographics and increases in apprentices with learning difficulties

49. A minor driver of lower achievement rates is the increasing proportion of categories of learners whose greater challenges are reflected in slightly lower rates of achievement, including females, non-white minority ethnicities, and learners with learning difficulties or disabilities.

Barriers

What are the barriers for businesses taking on young people as apprentices and what are the barriers for young people in accessing them?

The leaky pipeline for apprenticeships and vocational education

50. A key barrier to businesses taking on more apprentices is that there are not enough young people applying, especially among under-represented groups. While the apprenticeship programmes of large companies are often hugely over-subscribed, this does not necessarily translate into sufficient applicants for SMEs. This is made more challenging by youth demographics, with all sectors chasing youth cohorts which are smaller than they were in the past.

STEM careers advice

51. We can materially improve the pipeline for E&M apprenticeships and vocational education by providing children with effective careers advice. Evidence suggests that there is still not enough focus on the provision of STEM careers advice in schools and enough understanding among both teachers and learners of the educational and careers options available in STEM. In particular, learners are not sufficiently aware of the immediate and longer-term benefits of apprenticeships and vocational training, with higher education remaining a default choice for many learners and parents.
52. Enginuity recently commissioned a UK-wide study from CHILDWISE, a leading specialist in research with children and young people, on the use of STEM careers materials in schools. The evidence suggests that teachers of learners aged 11-14 need support to incorporate STEM careers advice into their lessons. Among the STEM teachers (of 11–14-year-olds) surveyed by CHILDWISE, 41% felt they did not know enough to help students who asked for advice about a career in engineering. They also expected most of their students to know only a little (76%) or nothing (18%) about potential careers in engineering. Only 30% regularly incorporated information about possible STEM careers into their lessons, with 51% occasionally and 19% rarely doing so. Although lack of time was the most common reason for this (52%), 26% indicated they did not know enough about it, and 18% that they did not know where to find it.
53. Most of the children (aged 11-14) surveyed said they knew only a little (46%), nothing at all (36%), or didn't know (10%), about careers in engineering, with only 8% knowing a lot. 63% said they would not be interested in a career in engineering, with concerns about its being boring, as well as too hard, too dirty, and not creative or well paid enough. These findings are particularly significant given how early career ambitions seem to form with 37% of surveyed children (11-14) knowing, and 45% having some idea of, what sort of job they wanted to do when they were older. This indicates the importance of engaging school

children, including at primary school, with engineering and technology, and providing them with relevant, accessible and inspiring STEM careers advice.

54. It is important for STEM careers advice materials and tools to be designed to be inspiring, engaging and accessible to a diverse range of learners, and to overcome existing barriers to engagement, especially for marginalised and under-represented groups. For example, the Enginuity/Childwise research found that girls say they know less about, and are four times less likely to be interested in, an engineering career than boys.

Skills Miner and interactive careers maps

55. Enginuity is developing tools to connect with children to inspire and engage them with an understanding of the range of rich and diverse career opportunities available in Engineering and Manufacturing. As part of this work, Enginuity has launched Skills Miner, an educational game using the Minecraft platform, which provides an accessible way for children to uncover engineering skills through gameplay and exploration. Skills Miner has been designed to be used as a stand-alone STEM careers tool to support the provision of STEM careers advice in schools without a full STEM careers programme. Further details are available at <https://enginuity.org/innovation-lab/skills-miner/>.
56. We are also developing digital interactive careers maps, including a cityscape where young people can navigate through a city exploring zones dedicated to different careers within Engineering and Manufacturing. In each zone, the user will be able to access engaging and inspiring careers information, including role models, role profiles, case studies and, where relevant, a skills miner game.

This is Engineering

57. The *This is Engineering* programme⁷, led by the Royal Academy of Engineering, is a great example of an initiative making a positive and measurable impact. *This is Engineering* is a campaign to bring engineering to life for young people and give more people the opportunity to pursue a rewarding and well-paid career which gives them the chance to shape the future.
58. The campaign provides a wide range of accessible and engaging information on engineering careers, such as inspirational profiles of engineering heroes and current engineers and a virtual museum of engineering innovation, with a focus on exciting, cutting-edge industries. The campaign's website also offers accessible guidance on the educational and vocational pathways into engineering careers.

Inadequate engagement with under-represented groups

59. Females and non-white ethnic minorities continue to be under-represented in both apprenticeships and employment in the E&M sector. The low participation of under-represented groups in E&M apprenticeships has remained stable despite efforts to attract greater numbers. The sector's struggles to engage

⁷ <https://www.thisisengineering.org.uk/more-info/about-us/>

effectively with under-represented groups are a major barrier to increasing the number of apprentices.

60. There is a massive opportunity to improve the sector's attractiveness to under-represented groups with more imaginative and energetic approaches to marketing, recruitment, and professional development. It is not overstating the case to say that failing to improve in this area is an existential threat to the sector.

Failings in the apprenticeship recruitment system

61. The apprenticeship system does not have the single, comprehensive promotional, comparison, and matching platform which UCAS provides for universities. There is a desperate need for a better defined apprenticeship recruitment system, especially to assist SMEs. This system needs to have equivalent functionality in promotion, comparison, and matching, to the UCAS platform for academic qualifications.
62. We welcome the recent announcement on the expansion of UCAS to apprenticeships, and in particular the proposed direction of travel towards a one-stop shop.⁸ While this is the right direction of travel, committed, time-bound milestones and funding are needed to provide employers with confidence that this will really be delivered.
63. The UCAS proposal should also not be seen as a silver bullet, especially given the possible timeframes for full implementation. Other projects to help match apprentices to SMEs need to be enthusiastically supported, such as the apprenticeship clearing house pilot being developed by the Solent Apprenticeship Hub, the Royal Navy Maritime Enterprise Zone, UCAS, and Enginuity. The clearing house will match people who have applied unsuccessfully for apprenticeships at Primes to apprenticeship opportunities in SMEs.

Lack of concrete action on parity of esteem

64. Over the years, there simply has not been enough action on parity of esteem to match the rhetoric. In particular, learners, parents and schools are still incentivised to follow an academic route, and colleges and vocational training providers are under-funded compared to universities.

The restrictive role of the Apprenticeship Levy

65. The restrictions on the use of the apprenticeship levy are a barrier to businesses taking on apprentices. It is not simple enough to transfer funds, and the limit on transfers is too low. The current 24 month expiry of levy funds is also too short for many businesses.
66. Just like we need to think of the pre-16 pipeline, we also need to think about apprenticeships in terms of the apprentice's full career and provide a vision for how careers in E&M work. That means thinking about our sector's commitment

⁸ <https://www.gov.uk/government/news/apprenticeships-boosted-under-plans-to-broaden-ucas>

to post-apprenticeship training. Businesses need to know that they can offer their apprentices training over time, especially to keep them in the business. This is inhibited by the restrictions on using the levy for modular training.

67. The apprenticeship levy could also help reduce economic inactivity among adult workers, especially those over 50. We need to ensure that the sector is still attractive to over 50 year olds, ensuring that they have opportunities to develop and grow in their roles, learn and master new technologies, and take up roles in emerging occupations and industries.
68. There is a huge opportunity to enable funding from the apprenticeship levy to be used to support modular qualifications which will help the industry retain older workers. The current inflexible approach does not reflect the realities of the labour market and is mystifyingly short-sighted. Businesses and workers could use career transition tools, such as those being developed by Enginuity, to understand the additional skills they would need to take up roles in emerging occupations and industries. These could then be provided by modular qualifications funded by the levy.

Geographical challenges

69. Unlike university, where learners generally move to attend the university of their choice, apprentices tend to take on apprenticeships in their immediate local area. This needs to be considered when designing apprenticeship promotion, comparison, and matching tools.
70. E&M apprenticeships are commonly situated in industrial parks on the edges of towns and cities. Often these locations are not accessible by public transport. SMEs cannot always afford to provide a means of transportation to enable apprentices to get to work.

Challenges for colleges and training providers

71. Businesses cannot always obtain the types of training they need from their local colleges or vocational training providers. In some cases, training providers are not adequately funded to offer these courses or maintain the teaching equipment required. In other cases, they cannot recruit suitably qualified teachers. Meanwhile, their existing teachers often cannot access appropriate CPD to keep their skillset up-to-date with rapidly changing technology and industrial practices.
72. The Local Skills Improvement Plans and the strategic development fund may address some of these barriers. The recent report by the Lifelong Education Commission on Developing Industry-Expert Teaching for Higher Skills⁹ provides some helpful recommendations to improve the recruitment and support of dual professional teaching staff.

⁹ https://www.lifelongeducation.uk/files/ugd/5e41e6_c63fd45d07cc46d8bf5ec99b34f4edeb.pdf

Overcoming potential career limitations of apprenticeships

73. Apprenticeships focus on hands-on, practical training in a specific area of engineering or manufacturing. This can lead to 'localised knowledge' in the sense that the apprentice learns skills and knowledge that are specific to the employer or industry in which they are training. By working closely with experienced professionals within a single company, apprentices have the opportunity to develop a deep understanding of the company's operations, culture, and values.
74. While localised knowledge can be an advantage for apprentices and their employers, it can also have several disadvantages, including limited career opportunities, a narrow perspective on industry or job role, a lack of innovation, and skills gaps.
75. Apprentices can mitigate these risks by supplementing their training with broader education and work experience. We are concerned with the proposal in the recent IfATE consultation on Mandatory Qualifications Criteria¹⁰ that qualifications which provide 'fuller occupational coverage' or 'structure for off-the-job training' should not be mandated on this basis alone. If it were adopted, this proposal could reinforce rather than overcome these potential career limitations of apprenticeships.
76. A better approach would be to consider the best ways to increase opportunities for apprentices to obtain fuller occupational coverage and off-the-job training. One possibility worth considering is educational placements, where graduates and apprentices swap places for a few weeks, where it is feasible to do so.

Inadequate incentives for apprentices

77. In deciding whether to undertake an E&M apprenticeship, especially at Level 2 and 3, people are naturally motivated by the financial return they will receive during the apprenticeship, and their future prospects once the apprenticeship is completed and they progress in their careers.
78. At present, those immediate financial incentives can be inadequate to provide sufficient motivation. We are also not doing enough to convince people of the excellent long-term prospects that our sector offers. Potential apprentices need to be able to gauge their future prospects as they weigh up E&M apprenticeships against other educational and career options.

Learning difficulties and disabilities

79. An increasing proportion of E&M apprentices have learning difficulties or disabilities. While we can only speculate, this may also be the case for the population of applicants who did not successfully enter an E&M apprenticeship. This is consistent with anecdotal evidence from employers on the large number of apprentices who need remedial education in maths and English.

¹⁰ <https://www.instituteforapprenticeships.org/reviews-and-consultations/consultations/proposed-changes-to-the-mandatory-qualifications-criteria/>

Poor use and lack of data

80. The sector is foregoing a potentially huge promotional tool because outcome and destination data on E&M apprentices is not collected and published in a systematic manner. In general, we are not making the best use of the data we have, while some of the data we do have, such as how the apprenticeship budget is being spent, is not being published.

Solutions

What do you think needs to change to help increase the number and diversity of young people taking up and completing engineering and technology apprenticeships?

Seven points of focus to improve E&M apprenticeships in England

81. As a sector, E&M is focused on continuously improving access to apprenticeships, and we have set out seven points of focus which will help us to achieve our goals. We call on policy makers, businesses, colleges, training providers, and other stakeholders, to engage with the challenges we have set out and get involved.
82. We also want to hear about and get behind the great ideas of others.

Focus 1: Respect for technical skills

83. Everyone agrees that parity of esteem between academic and vocational education is key to improving the apprenticeship system and increasing the number and quality of participants. Everyone also agreed that was the case 30 years ago. The problem is that we are not taking effective steps to change cultures and create that parity. Schools are still incentivised to promote academic routes to their students, who will benefit from greater funding if they take their school's advice.
84. It is vital that effective incentives are built into the system to help achieve parity of esteem. Schools should be incentivised on the numbers of their students who obtain apprenticeship places. There should also be much stronger links between universities, and colleges and other vocational training providers. Colleges and training providers could benefit from greater access to teaching equipment and expertise. One possibility worth considering is educational placements, where graduates and apprentices swap places for a few weeks, where it is feasible to do so.
85. Students, parents, and teachers, also need greater support and information about the relative benefits and outcomes of apprenticeship and vocational education routes, especially compared to academic routes.

Focus 2: Levelling up

86. The structure of the apprenticeship system has changed significantly since 2014/15, when Level 2 apprenticeships predominated with many Level 3 apprenticeships, and relatively few apprenticeships above Level 3. The structure of the apprenticeship system overall has significantly changed with apprenticeships above Level 3 rising and apprenticeships at Level 2 declining. This trend is particularly evident in the BA&L sector. E&M apprenticeships still maintain a core of apprenticeships at Levels 2 and 3.
87. The apprenticeship system and its funding are increasingly being used to support training at a higher level. Providing funding at all Levels is a great development but it is really important to maintain a strong focus on the flow of apprentices joining the sector at Level 2 and 3, even as we expand the purpose of apprenticeships to embrace degree-level studies.

Focus 3: Energising the Levy

88. The benefit to employers and workers of reforming the apprenticeship levy to support flexible training using modular qualifications, and making levy transfers easier, is widely accepted by most stakeholders outside government circles. The expiry of levy funds after 24 months is also likely to be preventing companies from using their funds effectively. Together these reforms may also lead to a better balanced distribution of apprenticeship investment within and across sectors.
89. We call on policymakers to reform the Apprenticeship Levy so that it supports flexible training beyond the existing standards. Transferring Levy funds throughout the supply chain must also be simplified, while consideration should be given to increasing the current expiry term beyond 24 months.

Focus 4: Data is King

90. There is really no reason why data on apprenticeship expenditure should not be published in a timely manner, by Level and SSA Tier 1, at the very least. Better and more timely data on apprenticeship expenditure, including the expenditure of unused and expired levy funds, would greatly help inform sectoral discussions and assist in planning and problem resolution.
91. It is also extremely unfortunate that we do not have adequate outcome and destination data on E&M apprenticeships, including data on people who did not complete their apprenticeship. This inhibits good policymaking and robs the sector of a key promotional tool. Anecdotal accounts suggest that the rich and rewarding outcomes provided by E&M apprenticeships match and often better the outcomes from academic routes. We need information on E&M outcomes and destinations to be collected systematically, distributed to stakeholders, and made available to students, parents, and teachers in an accessible way.
92. DfE collects invaluable data in Individual Learner Records (ILR) and learner and employer evaluation surveys. However, the ILR information is not fully available outside government (to protect personal information), and (in the case of surveys) complete sectoral insights are not easily extracted from the data.

We urge policymakers to consider how they can use this data to create greater value for stakeholders.

93. It would also be helpful to have the same level of data released, on the same schedule, across all the nations to aid cross-nation comparison and learning.
94. It is also important to emphasise that there are key data sources beyond apprenticeship data. HMRC recently held a consultation on capturing occupational data in tax returns.¹¹ Having real, as opposed to projected, occupational data would be incredibly useful, especially if the data were reported by the most granular available SOC and SIC codes.
95. Used together with the DfE's dataset, we could create links between employment and education, and identify the location of skills gaps in E&M. This would enable businesses and other stakeholders to understand the actual existing skill set of the UK workforce and support complex gap analyses against future state, enabling the development of more effective action plans.

Focus 5: Opening doors

96. The disappointing data on the participation of under-represented groups in E&M apprenticeships, as well as a possible declining interest among white males, clearly demonstrates the need for new and more imaginative approaches to promote apprenticeships. Industry is keen to have a re-energised partnership with government in this area, especially to imaginatively recruit under-represented groups to apprenticeships and T Levels.
97. To ensure we get it right, we need to understand what the leakiest points in the talent pipeline are so we can target interventions effectively. We also need to understand why the current promotional activities targeting under-represented groups do not seem to be working effectively and the reasons for the apparent falls in participation by white males. We can then make sure that we are using effective methods to promote the benefits of E&M apprenticeships (as well as T Levels).
98. When we do use innovative solutions to address leaks in the pipeline, such as Enginuity's Skills Miner minigames and digital interactive careers maps¹², government support is needed to normalise these innovative initiatives and increase uptake. Likewise, there needs to be greater government support for industry developed STEM activities to reach out to students in less economically developed areas; for example, the Jon Dennison Bursary which supports the 'Insight into University' programme for disadvantaged young people.
99. We also need to improve the information about E&M apprenticeships available to students, parents, and teachers. This includes better information about the apprenticeships themselves, as well as the pathways for career progression to

¹¹ <https://www.gov.uk/government/consultations/improving-the-data-hmrc-collects-from-its-customers/improving-the-data-hmrc-collects-from-its-customers>

¹² Further details are available at <https://enginuity.org/innovation-lab/skills-miner/>.

motivate participation and encourage social mobility. Better and more accessible information will help students, parents, and teachers in accessing the suitability of apprenticeships. Critically, it also means better information on the outcomes of E&M apprenticeships (and T Levels), especially compared to academic routes.

100. We need to provide better pastoral care once people have entered an apprenticeship, especially for under-represented groups and participants with learning difficulties and /or disabilities. Improved achievement rates for apprentices from these groups can lead to a virtuous circle, improving outcomes for current apprentices and providing stronger grounds to recommend apprenticeships to under-represented groups who might otherwise be hesitant.
101. Opening doors also means better processes to support recruitment into apprenticeships using innovative methods, such as Enginuity's gamification tools, to reach young people who find traditional application processes challenging or alienating. We welcome the recent announcement by the Education Secretary and UCAS that young people will be able to see apprenticeships among an expanded range of options on the platform from autumn this year, with students able to apply for apprenticeships alongside degrees from 2024.¹³ We are even more positive about the Education Secretary's pledge to develop a one-stop shop where young people can compare the full range of occupations, training and education opportunities available to them. This is the right direction of travel, and it would benefit greatly from specific, time-bound milestones and commitments of funding.
102. We also need to ensure that once people show an interest, that interest is captured by processes such as the apprenticeship clearing house pilot being developed by the Solent Apprenticeship Hub, the Royal Navy Maritime Enterprise Zone, UCAS, and Enginuity. The clearing house will match people who have applied unsuccessfully for apprenticeships at Primes to apprenticeship opportunities in SMEs.

Focus 6: Fair wage for all

103. We need to look again at the financial incentives for apprentices, especially at Levels 2 and 3. Businesses need to ensure that they are paying apprentices a fair rate. In particular, no business should use the apprenticeship system to pay under the minimum wage. However, government also has a role in ensuring apprentices have sufficient financial incentives. There should be money for this if we are serious about parity of esteem.

Focus 7: Essential skills

104. The percentage of E&M apprenticeship participants with learning difficulties or disabilities is increasing. This data confirms anecdotal evidence from

¹³ <https://www.gov.uk/government/news/apprenticeships-boosted-under-plans-to-broaden-ucas>

employers on the large number of apprenticeship participants who need remedial support in English and mathematics.

105. This is creating a barrier to E&M apprenticeships, as employers should not and, in many cases, cannot take on this cost without government support. Improved support for apprentices with learning difficulties and/or disabilities can lead to a virtuous circle, improving outcomes for current apprentices and providing stronger grounds to recommend apprenticeships to those with learning difficulties and/or disabilities.