

Fit for the Future: Growing and Sustaining Engineering and Technology Apprenticeships for Young People.

An EngineeringUK Inquiry led by Lord Knight and Lord Willetts

Written Evidence Submitted by the National Engineering Policy Centre

The National Engineering Policy Centre (NEPC) connects policy makers with critical engineering expertise to inform and respond to policy issues of national importance, giving policymakers a route to advice from across the whole profession. The Centre is an ambitious partnership, led by the Royal Academy of Engineering, between 43 different UK engineering organisations representing 450,000 engineers.

The NEPC welcomes the opportunity to respond to the above inquiry and hopes to engage further with Lord Knight and Lord Willetts regarding the issues raised. This response has been developed in discussion and consultation with the UK's professional engineering institutions, reflects what the community believes to be the greatest challenges for engineering apprenticeships and makes recommendations to help address them.

Executive Summary

The NEPC is concerned by the drop in young people taking up apprenticeships and has engaged with the professional engineering community to understand the key contributors and provide recommendations on how the trend can be reversed.

It must be recognised that the UK has experienced two significant exogenous shocks in recent years in the form of the UK's exit from the European Union and the Covid-19 pandemic. Both have impacted the ability of businesses to operate and plan, promoting conservatism in their hiring practices – with an impact on apprenticeship placements. In 2021, of the individuals who did not complete their apprenticeship in engineering, 29% were either made redundant or their job was terminated – which is significantly higher than apprenticeships within other sectors.¹

The response outlined here explores systemic issues facing the engineering and technology apprenticeship system and makes recommendations to improve the resilience of the system. It concentrates on issues pertinent to the take up of apprenticeships by young people (16-24 years) and focusses mainly on the challenges faced by the English apprenticeships system – although reference is made to the devolved nations and many of the challenges outlined are shared ones.

We respond to the consultation questions by outlining three intersecting challenges facing the apprenticeships system:

1 Ensuring apprenticeships remain a way for businesses to respond to change.

In response to the consultation question '*what part do apprenticeships play in helping to meet the UK's skills needs in engineering and technology?*' we highlight apprenticeships' ability to respond to the changing needs of businesses and the UK economy.

¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/108069/0/Apprenticeships_evaluation_2021_-_learners_research_report.pdf

2 The need to redefine apprenticeships and their supporting structures.

In response to the consultation question ‘*what are the reasons behind the overall decline in engineering apprenticeship starts in recent years?*’ we draw attention to the need to disentangle the different ways that apprenticeships are used and refine their associated supporting structures.

3 Achieving culture change.

In response to the consultation question ‘*what are the barriers for businesses taking on young people as apprentices and what are the barriers for young people in accessing them?*’ we concentrate on the need to better promote the benefits associated with apprenticeships and suggest ways to facilitate a change in culture.

Summary of Recommendations:

- 1. We recommend that government introduces a high-cost subject uplift in further education targeted at subsidising the higher delivery costs associated with laboratory and workshop-based science and engineering-related apprenticeships. This must include funding for recruiting and training staff at FE colleges to increase their capacity for providing high quality placements.*
- 2. While we recognise the importance of businesses being able to use the apprenticeship levy for re-skilling and up-skilling existing staff, we are also keen to see opportunities for younger people protected. We therefore recommend that part of the levy is ringfenced for apprenticeships for people under 25.*
- 3. Measures must be taken to reduce the administrative burden placed on businesses engaging with the apprenticeship system by simplifying the bureaucratic demands at the point of engagement. This should include efforts to ensure that apprenticeship policy remains consistent over longer periods of time.*
- 4. Government should fully understand the support mechanisms needed to facilitate apprenticeships and make suitable provisions where required – such as travelcards, loans or bursaries or other concessions made to students from disadvantaged backgrounds. It is important that the effectiveness of such interventions is monitored and that accountability for change is embedded within apprenticeship governance structures.*
- 5. Government should fund multi-stakeholder, coordinated support to improve the student experience within their apprenticeship and increase take-up of engineering apprenticeships by women. This should employ new dynamic language when describing apprenticeships, aimed at severing associations with outdated conceptions of technical education.*

Ensuring apprenticeships remain a way for businesses to respond to change

One of the key benefits of apprenticeships, for both individuals and businesses is their responsiveness to the skills needs within the economy. Compared to non-vocational education, apprenticeships provide businesses with a greater ability to develop skills relevant to their specific needs. And as these needs change over time, apprenticeships can adapt accordingly. This applies for both new recruits and as a mechanism for retaining and retraining existing talent. Likewise, for individuals who find that their existing education and training hasn’t prepared them sufficiently for the work they wish to do, apprenticeships can provide employment-orientated opportunities to re-skill and up-skill.

The compounded effect of this responsiveness is a workforce that can adapt to the regional and sectoral needs of a complex economy. This is increasingly significant in the context of climate

breakdown. An engineering workforce, possessing green skills and knowledge, will be central to developing and implementing green solutions. As such, a diverse and responsive engineering education and skills system is imperative. Apprenticeships must be taken seriously as part of the response to major shifts such as the 500,000 new jobs estimated to meet Net Zero challenges by 2050.²

This valuable responsiveness does not, however, arise spontaneously. It needs nurturing through the right kinds of systemic support and there are worrying signs that this is not being adequately provided. For example, we know that demand for engineering skills is not being met by current supply.³ And the negative impact of the exogenous shocks on apprenticeships, outlined above, may suggest that employers do not currently see apprenticeships as a way of responding to change.

Challenges with Further Education

One example of how the apprenticeship system is not being adequately supported is in the underfunding experienced by the further education (FE) sector over many decades. This has resulted in a chronic shortage of lecturers and infrastructure – particularly in subjects like engineering where FE cannot compete with the private sector salaries and the capital costs associated with latest industry-standard workshop equipment and technologies are prohibitively high. As such, the sector is lacking the capacity to accommodate the needs of businesses and young people wishing to undertake engineering apprenticeships.

Between 2010-19, funding for FE decreased by 18 percent per student. In addition, over the same period, FE teaching staff pay fell by 8 percent, and is now 17 percent lower than for their secondary education counterparts, which itself is a seeing chronic shortages in subjects aligned to engineering.⁴

The impact of underfunding is reflected by staffing shortages. Qualitative data indicates that 80 percent of staff within FE are aware of support staff shortages and 53 percent are aware of lecturer shortages within their institutions.⁵ This in turn impacts the ability of the sector to accommodate the demand for engineering apprenticeships. This is reinforced by qualitative data outlining the reasons for non-completion of engineering apprenticeships, with 68% of non-completers reporting issues with quality and 32% reporting issues with delivery.⁶ NEPC members also report that some sectors are facing limited FE places available for Level 2 and 3 apprenticeship schemes.

The systematic challenges with FE are exacerbated by the high teaching, assessment and administrative costs for engineering and manufacturing apprenticeships relative to other subjects.⁷ This places engineering and associated apprenticeships at a competitive disadvantage and disincentivises FE providers to offer this apprenticeship route, despite their strategic importance for the UK workforce.

²<https://www.gov.uk/government/publications/green-jobs-taskforce-report>

³<https://www.engineeringuk.com/media/156186/key-facts-figures-2019.pdf>

⁴<https://epi.org.uk/publications-and-research/16-19-education-funding/#:~:text=Funding%20in%20school%20sixth%20forms,faster%20than%20in%20FE%20colleges>

⁵<https://www.unison.org.uk/news/2022/02/staff-shortages-bite-in-colleges-across-the-uk/>

⁶https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/108069/0/Apprenticeships_evaluation_2021_-_learners_research_report.pdf

⁷<https://www.instituteforapprenticeships.org/media/4011/cost-of-delivering-apprenticeship-standards-final.pdf>

Recommendation 1:

We recommend that government introduces a high-cost subject uplift in FE targeted at subsidising the higher delivery costs associated with laboratory and workshop-based science and engineering-related apprenticeships. This must include funding for recruiting and training staff at FE colleges to increase their capacity for providing high quality placements.

The need to redefine apprenticeships and their supporting structures

There is significant variation between England and the devolved nations in how the apprenticeship levy is spent. Skills funding is a devolved matter, meaning that devolved governments can decide how their proportion of the levy (calculated by the Barnett Formula) is spent.⁸ Devolved nations have tended to avoid replicating the English levy system and standards, and survey data indicates that employers in the devolved nations do not possess strong views on the levy, by contrast to employers in England.⁹

In England, the apprenticeship levy introduced an incentive for some businesses to use their levy payments to support up-skilling or re-training existing employees rather than taking on young people under 25.¹⁰ Other evidence has shown that the levy has acted as a motivator for employers to focus on higher-level apprenticeships, which are more expensive and enable them to spend their levy more efficiently.¹¹ The net effect of this has been a reduction in Level 2 and 3 apprenticeships relative to more advanced apprenticeships.

Whilst up-skilling and re-training remain valuable, the engineering community also recognises that it is important to protect young people's access to apprenticeships if the size of the talent pool is to be maintained or grown. Some balance between these uses of the levy must be found by disentangling support provided.

Good practice of balancing these priorities can be found within the apprenticeship policy practices of the devolved nations. Both the Scottish and Welsh governments utilise apprenticeships for addressing skills needs for all age groups across the workforce. However, they have recognised the challenges specifically faced by young people and implemented policies to address these. For example, the Welsh government introduced offers to employers of £3,000 and the Scottish government £5,000 for each apprentice they hire under the age of 25.¹² In addition, the Scottish government has introduced a Young Person Guarantee. This guarantee aims to connect 16–24-year-olds with employment experience with apprenticeships. Up to £45 million is being invested in this scheme in 2022-23 and over 600 employers have signed-up to the initiative.¹³ In the same period that these policies have been introduced, the Welsh government met an ambition of increasing apprenticeship numbers by 100,000 in 2020, 57 percent of whom were aged 25 or over.¹⁴ This suggests that it is possible for governments to balance the need for increasing apprenticeship

⁸<https://www.charitytaxgroup.org.uk/tax/employment-taxes/apprenticeship-levy/apprenticeship-levy-considerations-devolved-administrations/>

⁹<https://www.ecitb.org.uk/wp-content/uploads/2020/06/Apprenticeship-report-29-June-2020-FINAL.pdf>

¹⁰<https://www.suttontrust.com/wp-content/uploads/2022/12/The-recent-evolution-of-apprenticeships.pdf>

¹¹<https://learningandwork.org.uk/wp-content/uploads/2021/01/Apprenticeships-at-Level-4-and-above-1.pdf>

¹²<https://www.gov.wales/welsh-government-meets-apprenticeships-target> and

[https://www.gov.scot/news/gbp-25-](https://www.gov.scot/news/gbp-25-millionapprenticeshipsupport/#:~:text=%C2%A35%2C000%20for%20employers%20taking,an%20apprentice%20aged%2025%20plus)

[millionapprenticeshipsupport/#:~:text=%C2%A35%2C000%20for%20employers%20taking,an%20apprentice%20aged%2025%20plus](https://www.gov.scot/news/gbp-25-millionapprenticeshipsupport/#:~:text=%C2%A35%2C000%20for%20employers%20taking,an%20apprentice%20aged%2025%20plus)

¹³<https://www.gov.scot/news/16-000-workplace-opportunities-secured-through-young-persons-guarantee/>

¹⁴<https://www.gov.wales/welsh-government-meets-apprenticeships-target>

numbers across all ages within the workforce, whilst still ensuring that the needs of young people are met.

Recommendation 2:

While we recognise the importance of businesses being able to use the apprenticeship levy for re-skilling and up-skilling existing staff, we are also keen to see new opportunities for younger people protected. We therefore recommend that part of the levy is ringfenced for apprenticeships for people under 25.

SME Ability to Engage with Apprenticeships

The impact of the levy has been particularly pronounced for SMEs ability to offer apprenticeships, and we have seen a reduction in the number of apprenticeships starts post 2017 – most notably for level 2 apprenticeships. This is partly because the funding model has proved expensive for SMEs to take on apprentices. For example, the levy requires SMEs to pay 5% of the apprenticeship and training assessment costs and when combined with increases in apprentice minimum wage the costs to SME employers can be high.¹⁵

But many businesses also report challenges with bureaucracy, and policy flux. It can be difficult and costly for managers to keep up to date with changing regulations and standards. While the NEPC applauds the government's emphasis on employer-led standards, employer representative bodies report that in practice SMEs face prohibitive challenges to effective engagement such as high demands on capacity, a lack of flexibility, a heavy bureaucratic burden that pushes up costs, and slow speed of implementation.

These burdens hinder the ability of employers to provide adequate management for high quality apprenticeships and may be impacting completion rates. Amongst engineering apprentices who do not complete their apprenticeship, 68% reported issues with quality, 43% reported that they did not get on with their employer, and 32% reported issues with delivery.¹⁶

Recommendation 3:

Measures must be taken to reduce the administrative burden placed on businesses engaging with the apprenticeship system by simplifying the bureaucratic demands at the point of engagement. This should include efforts to ensure that apprenticeship policy remains consistent over longer periods of time.

The challenges outlined above demonstrate that, in addition to funding, the apprenticeships system would benefit enormously from practical support mechanisms such as support to management of apprenticeships. For example, access to mentors, coaches and peer-support networks, clear guidance and support with how to effectively work with safeguarding regulations, and awareness raising of tax incentives such as the removal of National Insurance contributions for young apprenticeships.

High-quality support mechanisms for young apprentices are an important part of this. For example, provision of recognition and reward to senior engineers who provide training and mentoring to apprentices could help ensure high quality support while helping retain and inspire senior engineers.

¹⁵<https://researchbriefings.files.parliament.uk/documents/CDP-2020-0031/CDP-2020-0031.pdf>

¹⁶https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/108069/0/Apprenticeships_evaluation_2021_-_learners_research_report.pdf

There are practical challenges facing apprentices that may need to travel long distances to take a desired placement. These include travel costs, availability of public transport and accommodation. These challenges can be exacerbated by individual circumstances such as caring responsibilities, disabilities, or socio-economic status. Engineering apprenticeships are also among the highest in terms of working hours, which would negatively affect those with long commutes or caring responsibilities. The latter, for example, has been identified as a key driver for non-completion, even amongst young people.

Recommendation 4:

Government should fully understand the support mechanisms needed to facilitate apprenticeships and make suitable provisions where required – such as travelcards, loans or bursaries or other concessions made to students from disadvantaged backgrounds. It is important that the effectiveness of such interventions are monitored and that accountability for change is embedded within apprenticeship governance structures.

Achieving Culture Change

The NEPC recognises an urgent need to promote the benefits associated with apprenticeships, targeting the various points where students make decisions about their future. This may include influencers in formal education settings such as teachers and industry representatives, but also wider influencers such as parents or community leaders.

Such efforts are hampered by a lack of accessible information. A UCAS survey of 27,000 students found that a third of students do not receive information about apprenticeships, despite the Baker Clause in England. This study reported that over half of students looking to apply to higher education in 2022 are interested in apprenticeships but find it difficult to access relevant information. One reason for this is that apprenticeships and vocational training routes into work are less frequently discussed with school level students than traditional academic routes.¹⁷

This lack of information is especially acute for specific niche industries, which report a shortfall of applicants to their apprenticeship schemes. Careers advice in schools should include the full range of apprenticeships schemes available, including those from little understood or niche industries.

If the benefits associated with apprenticeship are not adequately promoted, negative perceptions may persist. Only 8% of the students surveyed by UCAS associated apprenticeships with leading to a good job and 4% of students associate the word ‘prestigious’ with apprenticeships, compared with 76% for a traditional university degree.

A well-funded, coordinated campaign is needed to positively influence public perceptions of apprenticeships, including attention given to changing the language that we use. Such a campaign must include a focus on improving gender participation in engineering apprenticeships, which is low by comparison to other apprenticeship options. For example, only 14% of engineering apprenticeship starts are female, by contrast to 50% across all subject areas.¹⁸

It also should be recognised that misconceptions around apprenticeships do not only affect their demand, but also their supply. Policy interventions aimed at improving awareness of the benefits of apprenticeships should extend beyond students to potential host businesses.

¹⁷<https://www.ucas.com/file/435551/download?token=VUdIDVFh>

¹⁸<https://www.engineeringuk.com/research-policy/educational-pathways-into-engineering/further-education-and-apprenticeship-pathways-into-engineering/>

While we stress the importance of changing perceptions, it is important that such measures are underpinned with attention to real-world prestige factors such as recognition and pay. Employers must provide attractive opportunities for high-performing apprenticeships rather than seeing them simply as a cheaper option.

Lifestyle Motivations

Non-financial 'lifestyle factors' also play a key role in the decision many young people take to enter higher education rather than pursuing apprenticeships. Four out of five HE applicants, report that their decision was based simply on that they 'wanted to go to university'. Qualitative research shows that young people consistently value non-academic or non-vocational aspects when considering university and apprenticeships were not seen to provide a narrative about lifestyle.

Engineering apprentices work more hours per week than any other apprenticeship route. On average, engineering apprentices work 40 hours a week and 14% of all engineering apprentices will work above this average. Apprentices in education and leisure tend to work significantly shorter weeks, with an average of 34 and 33 hours respectively.¹⁹

The above points suggest that attention needs to be given to the experiential aspects of apprenticeships to make them a more attractive option. The support structures referenced in recommendation 4 could support a change in this regard, as could best-practice resources aimed at helping employers improve the experience that they provide for their apprentices.

Recommendation 5:

Government should fund multi-stakeholder, coordinated support to improve the student experience within their apprenticeship and increase take-up of engineering apprenticeships by women. This should employ new dynamic language when describing apprenticeships, aimed at severing associations with outdated conceptions of technical education.

¹⁹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/108069/0/Apprenticeships_evaluation_2021_-_learners_research_report.pdf