Overview

1. EEF, the manufacturers’ organisation, is the voice of manufacturing in the UK, representing all aspects of the manufacturing sector including engineering, aviation, defence, oil and gas, food and chemicals. Representing some 20,000 members employing almost one million workers, EEF members operate in the UK, Europe and throughout the world in a dynamic and highly competitive environment.

2. EEF’s Technology Training Centre currently runs over 50 different technical training courses and trains around 300 apprentices a year in a variety of vital engineering and manufacturing skills. The centre works in partnership with over 70 employers, ensuring that their apprentices and other trainees learn how to use the cutting-edge technology and techniques used in manufacturing today. We have also recently launched a new Technology Hub to train more learners all the way up to degree level.

3. EEF is therefore both a membership body and apprentice training provider. Our submission is based on survey evidence and feedback from our manufacturing member companies. However, we are able to give feedback based on our experience as a training provider also, if the Committee is interested in this additional perspective.

The problem: the STEM skills gap

The STEM recruitment challenge

4. Manufacturing is suffering from an acute skills shortage. This is a long-standing problem. Three-quarters of manufacturers have struggled to recruit highly-skilled engineers in the past 3 years. This is due to a number of factors, with candidates lacking the right technical skills, topping the list, a reason cited by 68% of manufacturers. 61% said applicants did not have the relevant work experience and 33% said applicants lacked the right qualifications. There are clearly then issues around the quality of candidates. Moreover, our skills survey this year revealed that quantity is increasingly becoming a problem. Some 64% of manufacturers said they struggled to recruit because they did not have a sufficient number of candidates.¹

5. This is concerning given manufacturers plan to recruit in the coming years. Two thirds (66%) plan to recruit engineering graduates in the next three years and 66% plan to recruit engineering apprentices. This is just entry level. Manufacturers have additional plans to recruit experienced engineering professionals. For example, 42% plan to recruit mechanical engineers, 36% design and development engineers and 43% production and process engineers. ² Meeting this demand will undoubtedly be challenging.

¹ EEF, An Up-skill Battle (2016)
² EEF, An Up-skill Battle (2016)
Manufacturers need skills to fulfil their growth ambitions

6. It is crucial that manufacturers have access to STEM skills to fulfil their growth ambitions. Manufacturers are making opportunities for themselves. They have plans to increase their investment in technology and innovation and to sell into new export markets and supply chains. This is driving demand from employers for specific skills and competences of new and existing employees, many of which are specifically STEM skill-sets or skills that require a knowledge of the concepts of engineering.

7. For example, 53% of manufacturers say demand for craft and technician skills will increase in the next three years, 38% say demand for R&D technical skills will increase and 59% say demand for production related technical skills will increase. Reflecting the need to invest in new technologies and processes and take advantage of the fourth industrial revolution, 47% say demand for IT and software skills will increase and 42% say the same for design skills. 3

Employers are taking action, but more support is needed

A proven track record in delivering apprenticeships

8. There aren’t many manufacturers that don’t see the value in apprenticeships. Over two-thirds of companies currently offer apprenticeships, with a further 14% considering doing so. Only 5% have never offered them. Manufacturer’s generally recruiting younger apprentices, with 70% generally recruiting apprentices aged 16-18 years old, and a further 29% recruiting 19-21 year olds. 4

9. When it comes to apprenticeships, manufacturers are more than willing to put their hands in their pockets. 71% of companies say they use a combination of employer and public funding to deliver their apprenticeship training with just under a third (31%) fully funding this training themselves.

10. The importance placed on training has also led to almost two-thirds of companies (63%) expecting their company to increase training spend in the next 3 years, with around a third (32%) saying it will remain the same and just 4% expecting it to decrease. Moreover, manufacturers are not just focusing on a single delivery model, instead they are using a variety of ways to deliver their training.

Manufacturers offer competitive salaries to attract and retain STEM talent

3 Ibid
4 Ibid
11. Pay can often be an indicator of both skill level and shortage of skill supply. The vast majority of manufacturers (84%) then offer competitive salaries is to attract and retain highly-skilled STEM employees.

12. EEF’s own pay benchmarking data has found a steady increase in pay for key engineering positions in recent years. In particular, those engineers with greater skills and experience have seen pay increase more significantly than their junior counterparts. Even when we have seen a dip in overall pay settlements for the industry, manufacturers continue to report higher than average rates for what they consider to be ‘skills hotspots.’

Agile ways of working are used in our industry

13. Reflecting greater employee demand for flexibility, 43% of manufacturers say they are using flexible working arrangements as a means of attracting and retaining STEM employees. Manufacturers have a track record in offering flexible working to their employees. Indeed before the right to request flexible working to all employees was introduced, manufacturers saw flexible working as mutually beneficial.

Making the most out of the default retirement age (DRA)

14. Manufacturing has an ageing workforce. Over a third of manufacturers report that over 50% of their workforce is aged 50 and over. The abolition of the default retirement age (DRA) has created challenges, but also opportunities, such as holding onto specialist skills.

15. Our research found that that manufacturers struggle to recruit mainly because candidates lack the right technical skills and industry experience. Retaining older workers with specialist skills offers a solution. A third (33%) of employers say they are able to retain specialist STEM skills as a result of the abolition of DRA. If employers are not confident that they have sufficient entry-level talent coming into the business, or potential to progress current employees through the business, then they will try and keep hold of skills however they can.

Broadening recruitment across the global

16. Many manufacturers operate globally. Ambitions to supply to new markets and supply chains can mean expanding activities all over the world. Recruiting employees from within, and outside of Europe as well as transferring and posting employees all over the globe is often required to meet the skills needs required to fulfil these ambitions.

17. Our 2012 skills survey found that 25% of employers specifically recruit from within Europe (ex UK) for certain skill sets and 11% recruit from non-EEA countries. When recruiting from within Europe (ex UK) manufacturers are able to take advantage of the free movement of people. This has been a great success story; businesses have become familiar with the ability to recruit from the wider European pool to serve their

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5 EEF, Skills for Growth (2012)
Written evidence submitted by EEF (GAP0035)

skills needs. However, there is no clarity as to the future of this principle with the UK’s decision to year the EU.

18. This year, the proportion of manufacturers that have specifically recruited non-EEA employees has fallen to 9%. This is likely to be a reflection of the increasing cost and complexity of recruiting from outside of Europe. This is again concerning given the UK’s decision to leave the EU. It would be damaging if the same restrictions applied to EEA nationals as they do non-EEA nationals.

Inspiring the next generation

19. The image of manufacturing and engineering remains a significant challenge. Overcoming this, and encouraging more young people, especially females, into the industry can only be achieved if all stakeholders – industry, Government, educators are involved and messaging is coherent and consistent. Early intervention is key.

20. Strong engagement and relationships between schools and local industry can often be a postcode lottery. But this should not be the case. The success of UTCs and studio schools that have strong employer engagement demonstrates the positive impact industry input can have on our education system. The challenge is breaking down both the real and perceived barriers that continue to exist.

21. Employer engagement needs to continue throughout the education system including at further and higher education level. Whilst larger companies have strong relationships with universities, a worrying number of SMEs do not engage despite strong demand for engineering graduates. There is strong engagement among manufacturers with local further education colleges however, with over seven in ten using FE colleges to deliver training for their businesses.

Culture and attitudes

22. Overcoming cultural attitudes on engineering will only be achieved if there is early intervention – i.e. Primary School. Initiatives and schemes need to be tailored to take into account the age of the learner. Every effort should be made to align STEM schemes with the curriculums to increase engagement from schools.

23. There are array of initiatives that aim to promote STEM in schools, to a point where there are now too many. We would want to see all initiatives placed under one umbrella. Various attempts have been made but not really taken off. An appropriate platform may have been STEMNET which had Government funding, however even this has now changed to STEM Learning in recent months. An ever-changing landscape causes difficulties for employers who are keen to engage but don’t always know where to go.

24. All companies are different so the scheme they chose to engage with will vary as a result, but many are effective at tackling the cultural attitudes. EEF members in the North East and Yorkshire and Humber sponsor the work of Primary Engineer, which targets Primary School children and prides itself on a 50/50 gender split for engagement with
school children. Others commit to other initiatives such as Bloodhound, F1 in Schools, STEM Ambassadors, and Industrial Cadets. The list is endless.

25. Government should continue to commit to more activities such as Tomorrow’s Engineer Week which was very much supported by the business community, who would seek to be involved again. Surveys from the Big Bang Fair often reveal that young females and males perceptions change of engineering after attending. However, there needs to be a structured campaign to follow up to ensure such changes in attitudes are lasting.

26. EEF continues to engage with such initiatives, and we try to play an active role during these weeks. Just recently, we launched our own Top Trump cards, describing roles within manufacturing, using pay and bonuses to enable young people to play. These are downloadable from our website. ⁶We also published 10 myths and facts about working in manufacturing to reach out to young people who may not consider manufacturing and engineering as a viable career option. ⁷

**Schools**

27. The biggest challenge in increasing engagement between business and schools is improving the relationships between the two groups. We are told there is appetite amongst schools to engage with employers and vice versa but experiences from EEF members suggests that this is not always the case. Whilst larger companies, with a strong, established brand often find it easier to engage with school, SMEs often struggle to do so because for example, they don’t know who is the first person to contact in a school or what opportunities there are to engage with.

28. There is also some myth busting to do, and this is where organisations like EEF should and will do more. Employers tell us that health and safety regulations and administration is a burden but many remain unaware of changes to CRB checks (not needed for students aged 17 and over), that work experience is covered by usual employer liability insurance or risk assessments now being carried out yearly.

29. We think there are far more opportunities for employers to engage with schools, beyond work experience and careers talks. We want to see the continued roll out of industry experts teaching STEM subjects in schools on a part-time basis. But to be effective in also addressing the challenge of getting more young females entering STEM, we need to get more female STEM professionals into schools also.

30. Schools should be given clear direction on the need to engage with employers and careers provision should start prior to Key Stage 4 where decisions on schools and subjects are made. At Key Stage 4 and beyond all young peoples should have access to an independent face-to-face careers advisor. Schemes such as inspiring the Future play a role here, but employers and their employees need to play a fundamental role, with

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more female apprentices and graduates speaking in schools to talk about their careers and experiences.

**Experiencing the manufacturing workplace**

31. EEF members offer various opportunities for young people to experience the manufacturing workplace. 73% offer work experience, 52% offer site tours and school visits, 33% internship opportunities and 29% sandwich courses and placements.\(^8\) However large companies are more likely to do so. Small companies in particular face challenges. Many feel that their inability to engage with universities and students in this way is due to a lack of profile and awareness of their business amongst universities and their students. There is little information for SMEs on how to engage at this level, and there is not the same number of brokerage schemes at HE as there is at schools.

**Encouraging more young people into manufacturing and engineering**

32. Manufacturers have strong views as to how to encourage more young people into manufacturing and engineering:

- 72% of manufacturers say raising awareness of apprenticeships will encourage more young people into manufacturing. Apprenticeships are now in the spotlight. However, manufacturers are now facing more competition than ever to attract young people into our industry. Moreover, only 7% of young people choose an apprenticeship after Key Stage 4, with the majority opting for a school sixth form or other sixth form instead. The funding rules at further education level still cause many young people to stick to an academic pathway as opposed to choosing an apprenticeship.
- 63% say STEM focused initiatives between schools and businesses. As mentioned in this submission there are array of schemes available but little co-ordination or direction for employers.
- 60% say better careers advice in schools. Again, this is a well-documented issue that has not yet been addressed. Better, independent guidance, starting earlier (Primary School) must be implemented, with stronger employer engagement.
- 34% say introducing compulsory work experience in schools (pre-16). This was removed, with instead the focus on Key Stage 5, however we fear this is too late, as key decisions have already been made.

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\(^8\) EEF, Skills for Growth (2012)