CONNECTING SMEs AND YOUNG PEOPLE THROUGH EDUCATION PROVIDERS

Finding and implementing solutions to enable quality and impactful engagement

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engineeringuk.com

in collaboration with

THE CAREERS & ENTERPRISE COMPANY

Contents

1. Executive Summary

1.1 Introduction

This report provides an overview of a research project funded by the ERA Foundation, undertaken by EngineeringUK in collaboration with the Careers and Enterprise Company (CEC), between July and December 2022.

The aims of this project were to engage with engineering, manufacturing and technology-based small and medium-sized enterprises (SMEs) to:
1. explore the barriers they experience in engaging with young people and education settings,
2. identify any solutions they are already implementing to overcome these barriers, and
3. generate new ideas that might support more interactions to increase young people's access to engineering companies that are based in and around the places they live.

1.2 Key Findings

Background research

The desk research covered 13 reports published between 2009 and 2022. The reports focused on:
(i) skills - current and future demand in industry, and pathways to employment for young people; and
(ii) employer engagement in education.

Identified barriers to engagement between SMEs and education settings included:
- lack of time and resources for planning and delivering engagement activities
- limited knowledge of how to engage effectively and efficiently with schools
- lack of understanding about the engagement opportunities available
- no strategic plan to underpin engagements, leading to ad hoc and infrequent engagement,
  - with a narrow range of activities
- concerns about the Health & Safety and legal requirements of engaging with young people
- need for support to facilitate connections to local schools
- access to resources, advice and best practice guides via a sector-specific umbrella organisation.

Notwithstanding the identified barriers, the background research also highlighted a range of existing initiatives to support SMEs' engagement with education. Some of the most impactful ways are managed by central organisations, making it easy and efficient for SMEs to get involved. Professional Engineering Institutions and other membership bodies (e.g., Make UK, Federation of Small Businesses) signpost their members, many of which are SMEs, to existing programmes such as the Tomorrow's Engineers Code, STEM Learning's STEM Ambassador network and The Careers & Enterprise Company's Careers Hubs, https://www.careersandenterprise.co.uk/careers-hubs/ for ways to engage.

Workshops

The background research informed the content of 3 online workshops with SMEs. Participants were keen to raise the aspirations of young people, demonstrating a desire to showcase the breadth of routes into engineering and technology-based careers, and to play an active part in generating a more diverse future workforce. Difficulties in employing young people was highlighted as a key driver for engagement, as recruitment issues are impacting the growth potential of the business for some. There was a passion to share learning, help guide and support those SMEs not currently engaged.

Despite their keenness, SMEs experienced the following barriers to achieving engagement.

Challenges engaging with schools and curriculum

Participants reported low confidence in knowing what activities to deliver to young people, alongside poor understanding of the national curriculum. Perceived lack of 'buy-in' from teachers, parents and students for technical education routes, and schools pushing students towards large corporates rather than SMEs for things like work experience, was also cited as a key challenge. There was an eagerness to engage with teacher continuing professional development (CPD) to ensure messaging about career opportunities in engineering and technology-based SMEs is embedded in the curriculum.

Communicating engagement opportunities to SMEs

The way in which opportunities to engage with young people are promoted to SMEs by education providers are not perceived to be effective for SMEs to see the relevance or benefits to their businesses. To help foster increased SME engagement with young people, participants agreed on the importance of effectively communicating the benefits of engagement to SMEs not currently engaged. Improved and more targeted communication was felt to be best underpinned by a framework to guide and support them through the process of engagement.

Importance of engagement with existing initiatives

Workshop participants reported successful engagement with education providers through existing formalised initiatives: the Careers and Enterprise Company's Enterprise Advisors, STEM Ambassadors, and the Tomorrow' Engineers Code. Informal initiatives such as clusters of SMEs taking a joint approach to facilitating connections with education was also mentioned. Nevertheless, participants felt that much more needed to be done for already engaged SMEs like themselves, as well as those not yet engaged.

1.3 Recommendations

1. Develop and test messaging to communicate the benefits of engaging with young people that will help SMEs get on board.
2. Create or adapt a resource hub to enable SMEs to access tools and resources to support engagement with young people.
3. Identify, adapt or develop, and then test a framework for SMEs to strategically plan their engagement with young people, aligned to business needs.
4. Encourage and support SMEs to offer teacher placements to help teachers connect with and understand SMEs, and especially the roles available in them.
5. Better coordinate and strengthen collaboration between SMEs and other organisations across engineering, technology and engagement.
6. Raise visibility of SMEs with schools and colleges, providing information to help schools engage with them especially at local level.

There are several organisations that already have resources and structures to help with some of these recommendations as described in more detail in Section 4

2. Introduction

This report was commissioned by the ERA Foundation with the work carried out by EngineeringUK with support from the Careers and Enterprise Company (CEC) between July and December 2022. The aims of this project are two-fold: firstly, to establish the barriers that prohibit quality and impactful engagement between SMEs and young people; secondly to find solutions and provide recommendations for improving opportunities and to make it easier for SMEs to navigate the options and participate successfully in engagement with education providers.

2.1 Background and context

The UK has an ongoing shortage of engineers[1] and with the government's drive to strengthen and decarbonise the economy through investing in infrastructure, innovation and green technologies, the demand for engineering, technical and digital skills will only increase. These skills can also unlock opportunities for young people to work in good quality, stimulating jobs that make a difference.

Small to medium-sized enterprises (SMEs) account for 99.9% of the business population, accounting for three-fifths of employment and around half of turnover in the UK private sector[2]. In terms of engineering, 99.6% of engineering companies in the UK are classed as SMEs with 43% of the country's engineers working in them[3].

SMEs have a clear role to play in improving the socio-economic diversity in engineering and technology. If more SMEs are able to engage with their local schools and colleges, this could positively impact on the diversity of young people from lower socio-economic backgrounds choosing careers in engineering and boost capacity for delivery of work experience and T-Level placements. For these reasons, focusing on SMEs to explore how to increase their ability to engage with young people is important and timely.

The introduction of engineering and manufacturing T Levels in September 2022 marked one of the most significant changes for a generation to the technical qualifications available for young people entering the sector. An industry placement is a crucial aspect of T Levels, and it is vital that industry, government and education providers work together to ensure that there are sufficient placements available with employers in the engineering and manufacturing route for learners to succeed[4].

Careers advice and employer engagement with schools

There is evident progress in developing careers programmes in secondary schools in line with the Gatsby benchmarks. Developed in 2014, the benchmarks define what world class careers provision in education looks like and provide a clear framework for organising the careers provision in schools and colleges.

The CEC is the national body for careers education in England, supporting schools and colleges to deliver modern, 21st century careers education using its network of Careers Hubs to bring employers, educators, and providers together.

As part of statutory careers requirements, every school should aim to meet the 8 Gatsby Benchmarks, 2 of which specifically reference engagement with employers:

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[1] https://www.engineeringuk.com/media/196594/engineering-uk-report-2020.pdf
[2] https://www.fsb.org.uk/uk-small-business-statistics.html
[3] https://www.engineeringuk.com/media/156187/state-of-engineering-report-2018.pdf
[4] https://www.engineeringuk.com/media/318395/chapter-3-fe-and-apprenticeships-summary.pdf

• Benchmark 5: Encounters with employers and employees
• Benchmark 6: Experiences of workplaces

Careers leaders have responsibility to oversee the implementation of the benchmarks in schools and colleges with the support of the CECs digital tools, resources and its network of partner organisations and employers. While the CEC's Cornerstone Employer Network is made up predominantly by large businesses from the engineering sector, their Enterprise Advisor Network https://enterpriseadviser.careersandenterprise.co.uk/ and signatories of their 'Give an hour' campaign are often representatives from local SMEs.

Much of the local authority and Local Enterprise Partnership (LEP) activity around schools' engagement is facilitated through the CEC and their regional careers hubs. There are currently 44 careers hubs, covering 90% of all secondary state schools and colleges in England[5].

In the latest Ready for the Future report, schools and colleges reported that both employer engagement and young people's experiences of the workplaces were back to pre-Covid levels. As a result, young people received more employer encounters than the year before Covid. The latest analysis shows that 93% of students in reporting schools and colleges had at least one encounter last year[6], from 82% in 2018/19.

We have also seen that sustained engagement with Careers Hubs leads to wider and more intensive employer engagement, helping more learners have a chance to hear from a range of local sectors. 81% of schools and colleges that have been in Careers Hubs since 2018 had at least 10 businesses involved in careers activity this year compared to 48% for those not engaged[7]. Nationally the data suggests there were at least 35,340 employer relationships with schools and colleges last year[8].

Despite the requirements, activities, and progress outlined above, SMEs sometimes find it challenging to engage with education providers to maximise on the opportunities for collaboration. This report seeks to explore the challenges and propose potential solutions.

2.2 Methodology
This report is based on background research of existing publications, exploring findings and recommendations relevant to the focus of this work, and 3 workshops delivered online with SME representatives. An additional online interview took place with one SME unable to participate in the workshops. Intelligence gathered from the break-out session, 'Harnessing the Power of SMEs' at the Tomorrow's Engineers Live conference in 2022 also contributed to this piece of work.

Background research
The project commenced with background research, exploring any existing approaches that have been successful in engaging SMEs with UK education system. This included desk research along with leveraging existing relationships and networks including with Professional Engineering Institutions

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[5] Source: CEC
[6] Source: CEC report: Percy, C. and Tanner, E. (2020). Closing the Gap: Employer Engagement in England's Schools and Colleges in 2019. London: The Careers & Enterprise Company
[7] Source: Compass analysis based on 4,200 reporting schools and colleges in 2021/22 (678 in a Careers Hub since 2018; 122 not engaged with CEC)
[8] Compass analysis based on 4,200 reporting schools and colleges in 2021/22, giving the number of relationships (not the number of employers)

(PEIs), the CEC and the Tomorrow's Engineers Code community. The 13 reports analysed are listed in Appendix A.

Workshops

Sample and recruitment

Aligned to the mission of EngineeringUK's new strategy 2023-2028 to work with others to inform and inspire young people from all backgrounds so that more work in engineering and technology, and the ERA Foundation's focus on supporting electech manufacturing across the UK, a majority of the SMEs recruited operate in engineering, technology, and manufacturing (see Appendix B for list).

Participants were approached directly by EngineeringUK or via partner organisations, including CEC, PEIs and LEPS. Additionally, EngineeringUK engaged with a variety of networks working with or representing the SME community, to help identify potential participants. It became clear that these organisations could bring an added dimension to conversations around approaches that have been tried and tested in different regions, and key barriers and challenges to engagement. Therefore, we also invited a representative from the following organisations to participate in workshop 3, in addition to SMEs (see detail below): GFirst LEP, North East LEP, Business Durham, Federation of Small Businesses, Enterprise Academy, Jane Fisher Associates, and the North East Institute of Technology.

Twenty-one people across 19 SMEs, located across a breadth of the UK agreed to take part (Figure 1.1). SMEs ranged in size from 1-120 employees (Figure 1.2). One business fell outside of the standard definition of SME (0-250 employees) employing 350 people across two UK sites[9].

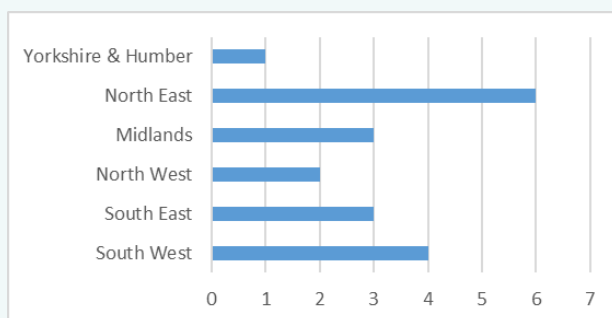**Figure 1.1** Number of participating businesses per regional location

Figure 1.2 Size of participating businesses per number of employees
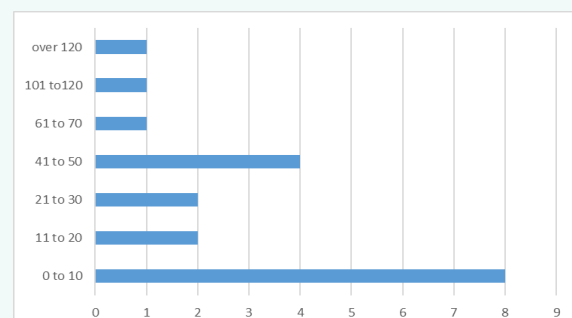
Motivations for participation

A key driver for engagement were recruitment issues and building the future workforce. Participants felt that the low numbers of young people interested and studying engineering-related subjects, despite good employment opportunities, directly impacted the growth potential of the sector.

Participants further felt that SMEs have a key role to play in ensuring young people have the chance to consider and access career opportunities in manufacturing, engineering and tech at a local level. They felt that young people should get the information they need on the full breadth of vocational and academic pathways into engineering.

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[9] This business refers to themselves as a SME and have recently gone from not delivering any outreach activity to engaging with young people through participation in the CEC Enterprise Advisor (EA) programme. They were invited along to share their experience of being part of the EA programme and how it helped them to take first steps to engagement.

Workshop sessions showed a desire to raise aspirations, drive social mobility and create a more diverse workforce for the future. Respondents were particularly keen to work with young people who may struggle to access opportunities. This sentiment was also in line with supporting their organisation's delivery of social and sustainability strategies.

Lastly, participants wanted to share their own passion for engineering and technology and its ability to make a difference and give back to the local community. This included wanting to learn from others and share insights, with a genuine desire to help other SMEs to take the first steps to engagement.

Limitations

The aim of the project was to engage a range of SMEs: those already engaged with young people participating alongside those that are not. Unfortunately, despite reaching out through many networks, we were not able to recruit any SMEs not already engaging with young people. This is perhaps unsurprising as those SMEs may be less interested in working with young people or more time poor. However, through engagement with a range of differently sized and engaged SMEs, we have gathered good insights into the challenges they faced when taking their first steps to engagement, sharing their understanding of what is needed to achieve success.

Workshop content

All workshops were delivered in Microsoft Teams lasting 90 minutes, utilising Miro Boards as a participation tool. Workshop 1 had 9 participants, workshop 2 had 8 participants and workshop 3 had 17 participants (7 third party organisations and 10 SMEs). The themes explored in each of the workshops were:

- motivations for engaging in the research project and with young people
- challenges SMEs face in engaging with education providers and young people
- organisations that support SMEs with their engagement
- scenario exploring the impact of removing barriers to engagement might have on number and types of engagements SMEs can deliver with different age groups
- development of ideas to support successful engagements between SMEs, education providers and young people

To help participants prepare, a pre-read was circulated in advance of each workshop. Workshops were recorded with participants' consent to capture the content shared through discussion.

3. Findings

This section outlines findings from the desk research and SME workshops.

3.1 Literature review findings

The desk research set outs the challenges faced by SMEs in engaging with young people through education providers. It highlights the inherent challenge for SMEs over larger businesses, the current state of affairs for young people knowing about different education and career opportunities, especially those in SMEs, as well as the challenges SMEs face in engaging with education providers.

The inherent challenge for small businesses

Employer engagement is a vital element of careers provision, enabling young people to make the link between what they learn and the world of work[10]. Connecting small, local businesses with those in education is important to achieving the goal set out in the Government's Levelling Up White Paper[11] for "people to realise their career aspirations without having to leave their communities, and to ensure that local employers have access to the skills they need to grow and thrive."

Many SMEs are time poor, have small budgets to spend on outreach and have limited staff time to offer for volunteering in schools due to a smaller workforce[12]. There is limited knowledge of how to engage effectively and efficiently with schools and as such engagements tend to be ad hoc, reactive and based around existing relationships. The impact of interventions often goes unmeasured and does not form the basis of a strategic plan.

Key findings from the Federation of Small Businesses (FSB)[13] suggest that 48% of small business owners say that technical skills are important to achieving future growth and that 78% of small firms have struggled to recruit. Yet only 4% of small business owners engage with schools and 15% with further education (FE) colleges. FSBs' recommendations include ensuring that young people have encounters with employers that reflect their local labour market.

Generally, employer engagement in education is relatively commonplace, but it is predominantly driven by large employers[14]. Large organisations compared with SMEs are more likely to have the time, resource and staffing to actively engage with education. SMEs on the other hand, due to their sheer volume, are geographically spread across the UK and are more likely to be based in areas of socio-economic disadvantage[15]. However, they are less likely to engage with education, needing greater support and encouragement to engage, and have less time and resource to dedicate to it.

Challenge of young people knowing about education and career options

EngineeringUK research highlights the importance for all young people, whatever their background and wherever they live, to have the chance to consider and access career opportunities in engineering and technology[16].

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[10] https://www.engineeringuk.com/media/274342/euk2535_careers_provision_report_lr.pdf
[11] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052708/Levelling_up_the_UK_white_paper.pdf
[12] Reported at Tomorrow's Engineers Live Conference June 2022
[13] https://www.fsb.org.uk/resource-report/scaling-up-skills.html
[14] https://www.nfer.ac.uk/publications/smes01/smes01.pdf
[15] http://www.suttontrust.com/wp-content/uploads/2022/02/Bridging-the-Gap.pdf
[16] https://www.engineeringuk.com/media/286299/levelling-up-engineering-skills.pdf

Engineering Brand Monitor survey results suggest more needs to be done to increase young people's awareness and understanding of vocational pathways, including apprenticeships and T levels[17]. Findings show that the majority of young people surveyed did not appear to know about the apprenticeship options open to them, with significant regional disparities. Knowledge of apprenticeship options is highest in London (63%) and lowest in Yorkshire and the Humber (34%), with the South West, (35%) West Midlands (36%), South East (37%) and East Midlands (37%) also lagging behind. Half of those in the North West (50%) knew about this option.

And, most young people don't yet know what T Levels are, with knowledge also varying widely by region. Young people (aged 11-19) in London are most likely to say they know what they are (49%) and those in Yorkshire and the Humber least likely (29%). In the West Midlands, levels of awareness were also low with less than a third of young people (30%) saying they knew what T levels are. Knowledge of T levels among young people in the North West and North East was similar (43% and 42%).

In addition, the numbers of young people studying engineering related NVQs, BTECs and apprenticeships are in decline[18]. Engineering and manufacturing have been particularly hard-hit with only around a half the number of apprenticeships starts in England 2020/2021 (30,510) compared to in 2016/17 (75,020).

The challenge for SMEs engaging with education providers and young people
As mentioned above, generally there is more engagement with education providers from large employers. There is work to be done in raising awareness of existing support mechanisms to SMEs and improving understanding of the benefits of engaging to their businesses, which include improved local recruitment, impacting on Corporate Social Responsibility (CSR) and training strategies, professional development for their staff through increased communication and presentation skills and more motivated employees.

Engineering and manufacturing businesses across the country are keen to bring in the next generation of talent to their businesses, and many see T Levels and apprenticeships as a chance to develop a pipeline of future engineers[19].

Every young person has a different way of learning and working, so it is vital that we showcase to all young people the wide range of pathways into engineering and that engineering is for them. Supporting young people in their career choices is a win-win situation, as teachers and employers know[20]. It motivates young people to learn and achieve more, enables them to progress into employment, and secures the future workforce needed for net-zero, economic growth and levelling up[21]. Some SMEs are keen to engage with schools their local areas. This enables them to raise their business profile, give back to the community through CSR programmes and talent pipeline their future workforce.

There is more to be done to give a greater number of SMEs in the engineering and technology sector the confidence to offer these opportunities to young people.

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[17] https://www.engineeringuk.com/media/318108/euk2708-parents-report-fv.pdf
[18] https://www.engineeringuk.com/media/318395/chapter-3-fe-and-apprenticeships-summary.pdf
[19] https://www.engineeringuk.com/media/318614/unlocking-talent-ensuring-t-levels-deliver-the-workforce-of-the-future-fv.pdf
[20] https://www.engineeringuk.com/media/274342/euk2535_careers_provision_report_lr.pdf
[21] https://www.engineeringuk.com/media/318395/chapter-3-fe-and-apprenticeships-summary.pdf

3.2 Workshop findings

The findings are compiled from responses to a series of Miro Board tasks, and associated discussions, undertaken by representatives from the 19 SMEs that engaged with the project, through participation in 3 online workshops delivered by EngineeringUK. Workshop findings broadly chime with those identified in the literature, however, add an additional dimension specifically to SMEs in the engineering and technology sector.

In this section we outline the common barriers and challenges experienced by SMEs when engaging with education providers, highlight solutions that have been found to improve engagement, share ideas to increase SMEs' engagement and explore what SMEs think is possible if barriers were removed.

Common challenges that limit SME engagement with education providers

There are two main areas where participants identified challenges in reaching young people. The first is with regard to engaging with the 'gatekeepers' (education providers), and the education system more broadly. The second is in relation to the role of SMEs in the wider environment of competing for education providers' and young people's attention.

Engaging with education providers

When working with education providers including schools, colleges and universities, participants reported struggling to identify the right contact within the setting. On the flipside, aggravating the issue, they also felt that education providers lacked understanding on how SME businesses can be engaged, and what support they can offer to young people. Schools were mentioned as often lacking awareness about time constraints in small businesses when it comes to outreach activities.

As there was little engagement with schools, colleges or universities, SMEs also had a low level of confidence when it came to knowing what activities to offer for young people. They felt they needed more guidance and support to identify opportunities to engage with young people and to understand how to develop engaging activities aligned to the real-world application of the STEM curriculum. While development of soft skills is seen as important, many employers perceive greater benefit from sharing specific engineering and technology inspiration. They want all engineering outreach and engagement activities to have a real and positive impact in informing and inspiring young people about engineering careers.

In addition, understanding the current curriculum and finding out about future changes to it was a challenge for SMEs. Even if this information did exist, participants did not feel it was in an accessible format to small businesses.

When considering whether they would be able to offer industry placements to support T Levels and apprenticeships, many SMEs report financial and resource barriers, the safety and legal status of young learners in safety-critical industries, and lack of awareness and knowledge of what is expected of a business and the support available. Participants expressed a desire for a centrally managed sector specific umbrella organisation to set up a network where SMEs can access resources, advice, best practice and templates (particularly around DBS, safeguarding criteria etc), and have someone to facilitate connecting them to schools in their local area.

Participants also reported a perceived lack of 'buy in' from education providers, students, and parents for technical education routes. The overwhelming feeling was that, traditionally, education providers would encourage students into further and higher education, rather than technical or work-based routes.

Notwithstanding the above-mentioned challenges, some participants shared details of programmes and events they deliver directly with local schools and colleges. This often occurred through having been approached directly by individual educational establishments to take part in activities including careers fairs, work experience, delivering teaching sessions and project-based challenges. This outreach from an enthusiastic teacher was appreciated and at times led to repeat engagements. However, participants also lamented not always being able to respond positively due to other business and time pressures.

Competition and conflicting priorities
A key challenge SMEs reported was their visibility, compared with that of larger organisations. Participants reported having to compete with well-established, larger companies in sectors in which they operate, as well as teachers', young people's and parents' knowledge of those larger organisations. In addition, there was a feeling that schools typically push students towards large corporates rather than SMEs for activities like work experience.

Because SMEs have limited time and capacity, there is less they feel able to do in terms of meaningfully engaging with young people. Because of limited budgets, it can also be difficult to justify return on investment in engagement activities as opposed to core business delivery.

Solutions being implemented to overcome barriers to engagement with young people
As with collaboration for innovation in research and development, participants recognised the positive impact that collaboration with others has in enabling delivery of some of their education engagement activities. Working in partnership with other SMEs and wider networks of organisations[22] to help facilitate connections with education, was seen as key to enable the delivery of activities and to foster greater engagement across local areas. The role of larger SMEs in sharing learning and experiences to help mentor those less experienced through the engagement process was appreciated.

PEIs and other membership bodies report that they signpost their members, many of whom are working in SMEs, to existing programmes such as the Tomorrow's Engineer Code and the STEM Ambassador network as ways to engage with schools. Participants highlighted the importance of joining existing initiatives. Across all 3 workshops participants referenced their engagement with CEC, one as a Cornerstone employer, others as Enterprise Advisors. In addition, working with STEM Learning, supporting their employees to become STEM Ambassadors and becoming a Signatory of the Tomorrow' Engineers Code to access support, resources, and work with like-minded organisations were mentioned.

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[22]e.g. Education Business Partnerships, Chambers of Commerce, local business networks)

Examples of successful initiatives included:

Ford Engineering Academy	Festival of British Engineering & Manufacturing
Established in partnership with a local college to provide traineeships to young people giving a basic intro to engineering and manufacturing and leading to an apprenticeship opportunity. 200 graduates since 2013, now looking to roll out to two additional colleges. The programme is delivered in partnership with a network of SMEs providing placements leading to offers of an apprenticeship. *Iain Oates, Ford Engineering Group*	A collaborative event to showcase engineering and manufacturing to young people. It provides students and teachers from local schools and colleges unique access to the M-CNC manufacturing facility. The festival showcases the latest Industry 4.0 technologies in action, and is an opportunity to engage with a variety of industry professionals, businesses and enterprises. *Leigh Howarth M-CNC*
Made in Chesterfield	**SPIN Space Placements**
An annual campaign designed to bring engineering, manufacturing, property and construction businesses together with schools and training providers. Event introduces thousands of young people across north-east Derbyshire to the wide range of careers available in the STEM sector. *James Brand, United Cast Bar*	Engaging with the UK Space Agency and Satellite Applications Catapult to offer 'Space Placements in Industry' (SPIN). Providing opportunities for young people considering employment in the space sector, connecting space sector organisations to enthusiastic young people to help ensure future success of their businesses. *Paulette Elliott, Huduma Ltd.*

Ideas to support increased SME engagement with young people

Findings from workshops suggest that there is real potential to build upon resources, tools and networks both to expand awareness of engagement opportunities overall but also to extend the range of tailored support and information for engineering and manufacturing employers.

There is a plethora of existing programmes and initiatives that SMEs can engage with to help and support them connecting with young people (see Appendix C). The challenge appears to lie in the way these opportunities are communicated. Participants reported either not being aware of the opportunities or opportunities being communicated in a way in which decision-makers in SMEs do not see the relevance to their business and hence do not engage. In the drive to increase more interactions between SMEs and young people, exploring more effective and relevant ways to communicate across clusters of SMEs was highlighted as an important area for development. The idea of a local mentor who could help SMEs take the first steps in engagement, and potentially connect them with other businesses in the area, was seen as a useful approach to this issue.

There was much agreement around the need to communicate better to SMEs the benefits of engaging with young people, aligned to the pain points in their business. Appreciating the time and resource it will take to reach all individual SMEs, participants suggested exploring effective way to communicate across clusters of SMEs, in any given location. Such communication would ideally include information on successful options for engagement, and a framework to guide SMEs through the stages of engagement. The suggestion was that this could be a digital tool.

As key influencers of young people, participants felt that teachers need CPD in industry to ensure that informed messaging about the career opportunities available in SMEs is embedded into the curriculum. Teachers have access to many more students than typically participate in an SME-led workshop. Engaging teachers and career leads by providing them with the opportunity to undertake placements in industry was suggested as a good way to maximise potential careers messaging. This could also help build greater understanding of curriculum links for the employer and lead to co-creation of tangible activities which support contextualised learning.

Exploring the potential if barriers to SME engagement with young people can be removed

Finally, across workshops 2 & 3 participants were given a scenario to explore the potential in the SME community for increased engagement with young people if barriers to engagement were removed.

Scenario - In a world in which there are no challenges/barriers to engagement between SMEs and young people, if you could develop and deliver the activities you'd like to, at whatever scale you'd like to do it, what might that look like through engagement with different age groups?

Workshop outputs included the proposed solutions below, and form part of our recommendations outlined in the next chapter.

Educating the educators

A core theme was the desire to deliver teacher training days to educate educators about career pathways within engineering and manufacturing, and engaging SMEs in parent-teacher events. Another suggestion was engaging local teachers in STEM workshops to enhance knowledge and understanding of newer technologies and the interconnectivity between businesses, for instance, original equipment manufacturer and supply chain networks. Also, participants suggested placements for subject leads in schools to inform delivery of career messaging, particularly around T Levels and apprenticeships.

Raising the profile of SMEs nationally

There was appetite among some of the participants to establish a National SME Week (or Month), with SMEs across the UK, in a coordinated way opening their doors to showcase who they are and what they do to parents and teachers, as well as young people.

Engaging with Primary Schools (Key Stage 2) – generating awareness to ignite a passion

Participants' ambition for engagement with 7-11-year-olds would focus on more delivery of fun, interactive practical programmes, designed to engage young people in positive experiences of STEM at a young age, using real-life examples, with potential to deliver across clusters of schools in local communities supported through collaboration with other SMEs and potentially competition focused.

Building momentum in Secondary Schools (Key Stage 3) - supporting informed decision making

Building on work with 7- to 11-year-olds, there were aspirations to offer follow-on experiences with added complexity and problem solving. In addition, giving 11-14-year-olds access to 'behind-the-scenes' engineering and manufacturing environments through site visits and virtual tours was highlighted. The goal was to engage and inspire young people pre-GCSE choices to support informed decision making.

Experiencing the world of work (Key Stage 4 and above) – supporting career readiness

Participants were keen to establish collaborative schemes with other SMEs to support 15-21-year-olds, focused on work experience and insights days. This would involve project assignments based on the needs of a business, leading to real-world outcomes. There was a desire to mentor students undertaking engineering courses, to provide internships and job trials to young people.

4. Recommendations

To meet the future need for engineering skills, the scale and diversity of young people engaged at all stages of education needs to increase. SMEs have a pivotal part to play in helping young people understand what engineering is, be motivated and able to access the educational and training opportunities available.

There are clusters of proactive SMEs across the UK engaging with young people in education. However, there needs to be increased breadth of quality and impactful engagements so that young people from under-represented backgrounds know about and choose engineering careers.

Below we have summarised the key issues that were identified that have clear and actionable recommendations associated with them and make suggestions for the next steps that could be taken.

Issue identified	Recommendation	Suggested next step
Decision-makers in SMEs do not see the business case or relevance of engaging with young people.	1. Develop and test messaging to communicate the benefits of engaging with young people that will help SMEs get on board.	Identify an organisation to take this forward. It may also be helpful to develop a narrative to gain the support of organisations that work with groups of SMEs, e.g., science parks or Chambers of Commerce.
SMEs lack confidence regarding what activities can be delivered, what are appropriate for different stages and how they relate to the curriculum. No unified resource pool for SMEs on options and successful approaches.	2. Create or adapt a resource hub to enable SMEs to access tools and resources to support engagement with young people. 3. Identify, adapt or develop and then test a framework for SMEs to strategically plan their engagement with young people, aligned to business needs.	The Tomorrow's Engineers website provides free resources and guidance to support organisations engaging in engineering and technology activities. The CEC provides resources and support, including in its development of the Employer Standard, on careers engagement in general and also encourages organisations to 'give an hour' to make working with schools and colleges accessible to SMEs. These approaches and resources could be tested to check that they work well for SMEs, with amendments, such as a dedicated landing page for SMEs developed where needed. Identify an organisation to work on a framework for SME STEM engagement.
Teachers felt to have little understanding of careers available in SMEs as well as having a wider STEM CPD need, they may also lack awareness about time constraints in SMEs.	4. Encourage and support SMEs to offer teacher placements to help teachers connect with and understand SMEs, and especially the roles available in them.	ETF, CEC, STEM Learning and the Design and Technology Association already offer teacher placements – these could be tested to check their appropriateness for SMEs and promoted to them.

Partnering with other SMEs and wider networks was seen as key to enable the delivery of activities but few SMEs connect with others. Need to better connect SMEs to organisations that can help them navigate through issues.	5. Better coordinate and strengthen collaboration between SMEs and other organisations across engineering, technology, and engagement.	The Tomorrow's Engineers Code is currently encouraging and enabling collaboration across 250 organisations but has low sign up from SMEs in industry (24). An SME recruitment drive with some tailoring of resources could address this recommendation. Code Connect could be used to help SMEs find a local mentor to take their first steps to engagement. Identify an organisation that could work with larger organisations to understand or develop how they can enable SMEs in their local area or supply chain to engage effectively with schools.
Schools perceived to encourage their students to take work experience in large corporates rather than SME. Desire for a National SME Week to profile SMEs across the UK to young people, teachers, and parents.	6. Raise visibility of SMEs with schools and colleges, providing information to help schools engage with them especially at local level.	CEC and STEM Learning could support this information sharing. There are already several days/events such as This is Engineering Day, National Manufacturing Day, and Tomorrow's Engineers Week already established that could be asked to focus on SMEs.

5. Appendices

Publisher	Title	Date
Department for Business & Skills	A report to Government by David MacLeod and Nita Clarke Engaging for Success: enhancing performance through employee engagement https://dera.ioe.ac.uk/1810/1/file52215.pdf	2009
Department for Levelling Up, Housing and Communities	Levelling Up the United Kingdom https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052708/Levelling_up_the_UK_white_paper.pdf	2022
Education and Employers	The case for employer engagement in state schools https://www.educationandemployers.org/wp-content/uploads/2019/04/Research-summary-website-version.pdf	2019
EngineeringUK	Further Education and Apprenticeship Pathways into Engineering Briefing https://www.engineeringuk.com/media/318395/chapter-3-fe-and-apprenticeships-summary.pdf	2022
EngineeringUK/Make UK	Unlocking Talent: Ensuring T Levels Deliver the Workforce of the Future https://www.engineeringuk.com/media/318614/unlocking-talent-ensuring-t-levels-deliver-the-workforce-of-the-future-fv.pdf	2022
EngineeringUK	Securing the Future: STEM careers provision in schools and colleges in England https://www.engineeringuk.com/media/274342/euk2535_careers_provision_report_lr.pdf	2021
EngineeringUK	Levelling up engineering skills: widening opportunities for young people https://www.engineeringuk.com/media/286299/levelling-up-engineering-skills.pdf	2021
EngineeringUK	Key facts & figures: Highlights from the 2019 update to the Engineering UK report https://www.engineeringuk.com/media/156186/key-facts-figures-2019.pdf	2019
Federation of Small Businesses	Scaling Up Skills https://www.fsb.org.uk/resource-report/scaling-up-skills.html	2022
Institution of Engineering and Technology	Skills and Demand in Industry Survey https://www.theiet.org/media/9234/2021-skills-survey.pdf	2021
National Foundation for Educational Research/STEMNET	Exploring the engagement of STEM SMEs with education https://www.nfer.ac.uk/publications/smes01/smes01.pdf	2012
OECD	Meet the Future https://issuu.com/oecd.publishing/docs/meet-the-future	2018
Sutton Trust	Bridging the Gap www.suttontrust.com/wp-content/uploads/2022/02/Bridging-the-Gap.pdf	2022
We Are Futures	Gen Z: Face the Future Today: 7 guiding principles to inspire better connections with young people. https://wearefutures.com/report/	2021

Business	Sector
3D Web Technologies	Technology - Interactive 3D solutions and multi-media
Adopstar	Technology – Digital Marketing Consultancy
Alderman Tooling	Manufacturing – Sheet Metal Fabrication
Alpek Polyester	Manufacturing – Polyester Products
Calm Engineering	Built Environment - Engineering Consultancy
Core Haus	Manufacturing – Built Environment
Ford Engineering Group	Manufacturing -High Precision machining, Pressing & Sub Assembly
Fuzzy Logic Studio	Technology – Augmented Reality & Virtual Reality
Giganeer	Engineering – Cloud-based Freelance Engineering
Huduma Ltd	Technology - Consultancy
Hydraulics Online	Engineering – Hydraulics Design Consultancy
M-CNC	Manufacturing – Precision Engineering
Obatec	Technology – Digital Transformation, BIM
PJD Limited	Engineering – Specialist Mechanical Engineering Services
STM Quality Ltd	Engineering – Quality management & Engineering Services
Tenent	Engineering – Engineering & Design Consultancy
Thakeham	Construction Engineering
United Cast Bar	Manufacturing – Cast Iron
Wave Utilities	Business Water Supplier

Appendix C: Examples of Existing Initiatives

There are a range of successful existing initiatives to support SME's engaging with schools, the most impactful of which are managed by central organisations making it is easy and efficient for SMEs to get involved.

The Education Landscape for Employers - An impartial resource to help businesses navigate and make the most of the education and skills system in England. Developed in partnership with the British Chambers of Commerce, Confederation of British Industry, Federation of Small Businesses, Institute of Directors, Careers & Enterprise Company, and the Department for Education, the Guide is an overview of the education system as a whole and explains how employers can work with schools, colleges and universities, and the wider skills system, to benefit their business.
www.educationlandscape.org.uk

Tomorrow's Engineers Code – The TE Code is a community of over 250 organisations working towards common goals to increase the diversity and number of young people entering engineering careers. The community, of signatories and supporters, share knowledge and best practice to collectively improve their engineering outreach programmes. They have access to resources and support to help them meet the four pledges of: Inspiring Connection, ensuring programmes contribute to a sustained and rich STEM journey for all young people; Driving Inclusion, ensuring all young people have opportunities to engage in engineering-inspiration activities and no one is left behind; Showcasing engineering, promoting a positive, compelling and authentic view of engineering, showcasing the breadth of opportunities; and Improving Impact, Improving monitoring and evaluation of programme activities to develop a shared understanding of what works.
https://code.tomorrowsengineers.org.uk/

Employer Standards for Careers Education - The Careers & Enterprise Company have developed a set of Employer Standards that provide a rigorous framework to enable businesses to understand what good careers education outreach looks like. Self-assessing against the framework enables businesses to plan and structure engagement, ask the right questions, connect, and share peer expertise and engage effectively with young people in schools, colleges, and alternative provision. It also enables them to benchmark themselves against others and access resources to support their progress. Register your interest to access the forthcoming *Employer Standards* which will be available nationally autumn 2023 to support you to ensure your work with schools and colleges is having the most impact.

Neon - Brings together the UK's best engineering and tech experiences and inspiring careers resources and stories to help teachers bring STEM to life with real world examples. It is an opportunity to connect schools, businesses, educational establishments and students. Neon connects schools to experiences in their local area, ensuring that teachers can find experiences that are right for their students. Employers can submit their careers activities and target their audience by specific postcode to a town, local authority, region or the whole of the UK, all free of charge.
https://neonfutures.org.uk/

Tomorrow's Engineers Website – Designed to help organisations to get the most from their engineering engagement activity, the Tomorrow's Engineers website hosts free resources to support improved practice, with guidance and information drawn from across the STEM community, including 20 resources designed to support careers inspiration, 24 resources designed to support delivery of inspiration activities, 12 resources provide guidance on Equality, Diversity & Inclusion, and 13 resources to provide support around research and evaluation. Since April 2022 the site has logged

15,095 Users, received 48,505 page views and 2,031 resource downloads.
https://www.tomorrowsengineers.org.uk/

Primary Engineer – With a vision to ensure all children and pupils achieve their full potential through engagement with engineering, Primary Engineer have developed an engineering curriculum that spans Early Years, Primary, Secondary and Further Education institutions. Its core aims include:
- the development of children and young people through engagement with engineering,
- the promotion of engineering careers through inspiring programmes and competitions,
- the development of engineering skills for teachers and practitioners addressing the inequalities in engineering.

Strong links to engineers and the industries they work in provides an opportunity for both pupils and teachers to expand their knowledge of careers, career paths and opportunities.
https://www.primaryengineer.com/

STEM Ambassadors Network – STEM Ambassador Hubs co-ordinate the volunteering opportunities of over 30,000 volunteers from around 7,000 employers. STEM Ambassadors share knowledge and experiences free of charge to help young people of all ages achieve more and progress further in STEM subjects and demonstrate their value in life and careers. STEM Ambassadors volunteer their time to visit youth and community groups, attend events at other venues or host visits at their place of work, and deliver a range of activities such as career talks, mentoring, practical workshops and exhibitions. STEM Ambassadors help employers connect with young people, inspiring them to become the next generation of STEM professionals. Through outreach programmes in schools, colleges and out-of-school groups, employer support can help grow the UK's workforce with talented and passionate individuals. https://www.stem.org.uk/stem-ambassadors

National Manufacturing Day - Annually Make UK facilitates, on behalf of its manufacturing members, an opportunity for them to showcase the range of highly skilled and well-paid jobs they have on offer by throwing open their doors in a UK wide Open House. Local communities have the chance to see the potential careers and jobs on offer within the diverse manufacturing sector - opportunities for school leavers, graduates and people looking to reskill at all levels. They demonstrate the value of a manufacturing apprenticeship as an alternative route post school or college, helping to attract new talent for businesses looking to develop their future skills pipeline. National Manufacturing Day helps show the reality of modern manufacturing careers, engaging with students, parents, teachers, community leaders and local residents. By holding a National Manufacturing Day event they showcase modern manufacturing jobs and technologies but also highlight the benefits that manufacturing provides to their communities, and the country as a whole.
https://www.nationalmanufacturingday.org/

STEM Learning, Careers and Enterprise Company, Education and Training Foundation and the Design and Technology Association all run teacher placement schemes:

Careers & Enterprise Company Teacher Encounters - provides an opportunity for teachers to engage directly with employers to see and learn about the different career pathways relevant to their subjects, and to observe how their subject is applied practically in business. Teachers can then meaningfully use these insights to enrich their curriculum teaching, helping their students build a deeper understanding of opportunities, connections between learning and industry and the essential skills that need to be honed for different roles. The Careers and Enterprise Company have now awarded funding to areas across the country that are running pilots to test and evaluate the effectiveness of different approaches over this academic year.

You can read more about the potential of teacher encounters in the CEC's insight briefing.

STEM Learning's ENTHUSE Placements - provide a unique opportunity for teachers, technicians and support staff to experience life at a STEM employer site. Described as professionally life-changing, ENTHUSE Placements equip teachers, technicians and support staff with real-life knowledge and experience, helping to bring careers to life in the classroom. Currently, 82% of teachers report that they don't feel confident advising students about the breadth of STEM and related careers. By hosting a placement, employers can play a vital role in supporting both teachers and students understand the diverse range of STEM careers available. More information can be found here Host a placement (stem.org.uk)

Education and Training Foundation Industry Insights **-** provides teachers with the opportunity to develop their skills and update their industry knowledge by taking part in a range of industry related activities. The Industry Insights programme offers several opportunities:

- Industry Insights Placements
- Group Industry Placements
- Industry Workshops
- Employer Partnerships and Industry Insights online course

https://www.et-foundation.co.uk/professional-development/t-levels/industry-insights/

Design and Technology Association - Offers teachers in their network the opportunity to take part in a three-to-five-day internship with a UK-based design, engineering, manufacturing, or construction business, to get an in-depth understanding of modern industry and the knowledge, skills and personal attributes sought by employers, and identify opportunities for ongoing collaboration. This is a free programme that is managed by the Design and Technology Association and supported by the Institution of Engineering and Technology (IET) and the Institution of Mechanical Engineers (IMechE). https://www.designtechnology.org.uk/for-partners/blueprint-1000/teachers-in-residence/

STEM Learning Enthuse Partnerships - ENTHUSE Partnerships improve young people's attainment and engagement in STEM subjects and develop awareness and understanding of STEM careers, contributing to the Gatsby Careers Benchmarks. A two-year collaboration between STEM Learning, a funder and 8-10 schools or colleges, partnerships target pupils in the greatest need of support, working with their teachers and wider influencers to increase attainment and raise aspirations for STEM careers. By sponsoring a Partnership, employers can help to tackle the barriers to young people's engagement in STEM and encourage a more diverse and inclusive talent pipeline. https://www.stem.org.uk/employers/invest-in-enthuse-partnerships

Education Business Partnerships – various organisations across the UK fostering links between Business and Education with activity delivered at a local level. For example, Tower Hamlets Education Business Partnership offer volunteering places to SMEs from an existing calendar of events and provide them with briefing packs and resources to enable them to engage with young people with their support. https://theswitch.org/

Worcestershire Growth Hub - 'Opening Doors' project encourages local businesses to hold site visits, co-ordinating engagement with local schools to attend for tours and to get an understanding of the local labour market, industries and opportunities. https://worcestershiregrowthhub.co.uk/great-reception-opening-doors-business/

Prime Commitment - PRIME is an alliance of law firms across the UK and Republic of Ireland determined to improve access to, and socio-economic diversity within, the legal profession. There are over 60 law firms involved in PRIME providing legal work experience with a mission to give young people from less privileged backgrounds the chance to excel in the legal profession. When it comes to making real social change they believe that it takes a real effort; not just one voice or one action, but a whole movement making a long-term commitment. To help member firms keep up best practice they issue guidance on areas relating to work experience and social mobility. https://primecommitment.co.uk/