



Apprenticeships in the life sciences sector

Improving the supply and utilisation
of skills in the pharmaceutical industry

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An ABPI policy paper

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Summary

The life sciences sector is one of the UK's most valuable national assets. Each year it creates £73.8bn in turnover and generates £104,000 GVA per worker (more than twice the UK average).¹ The sector directly employs 223,400 people through 5,870 companies and, by 2030, has the potential to generate 133,000 job opportunities in the UK.

Life sciences is a crucial part of UK plc; we are world leaders in our sector, attracting £1bn of inward investment a year.² In addition to driving innovation and growth in the UK economy, the life sciences sector also demonstrates significant social benefit through contribution to disease reduction and therapeutic support, of which the successful development of a COVID-19 vaccine is the latest and most prominent example. Our sector has enjoyed a strong relationship with Government, with the Life Sciences Industrial Strategy articulating our shared vision for high-calibre skills and beyond.³

In order for the life sciences sector to deliver on its full potential for the UK, we need to address the skills shortage that our industry faces. The Government's major investments in skills and longstanding collaboration with industry have led to impressive progress on this front, but a significant skills gap in the industry remains. As outlined in the Science Industry Partnership (SIP) *Life Sciences 2030 Skills Strategy*⁴ and the ABPI report *Bridging the skills gap in the biopharmaceutical industry*,⁵ there are longstanding issues of training and suitably skilled labour supply, leading to both skills shortages and skills gaps within the life sciences sector. As part of a wider policy picture, apprenticeships can play a key part in closing the skills gap, producing high-quality jobs for industry-ready employees who have skills and practical experience tailored to their businesses' needs. However, despite best efforts,

the life sciences sector is yet to use apprenticeships to their full potential: in 2020 24% of the sector's levy contribution was recovered.⁶ This is an increase from 2019, but still shows that there is considerable potential for further growth. Our sector is focusing on how to maximise the potential of apprenticeships and how to use the levy more efficiently.

The ABPI hosted a roundtable of 14 life science industry leaders, apprenticeship training providers and education experts in late 2020 to discuss how best to maximise the impact of apprenticeships in the sector. Attendees outlined a number of longstanding issues with the sector being able to deliver life sciences apprenticeships, namely: insufficient flexibility; low-quality provision and delivery; geographical inequality; low awareness – all of which have prevented employers from realising the full potential of the levy.

The roundtable also discussed the impact that the COVID-19 pandemic has had on both the supply and demand for training in our sector. The virus has had a notable impact on our sector's skills agenda, exacerbating existing issues, whilst also providing novel and welcome opportunities for progress:

- **Online training:** Moving training online has allowed training providers and end point assessors to carry on working throughout the pandemic, and has the potential to combat geographic inequality in the future.
- **Visibility:** The successful development of a COVID-19 vaccine has boosted awareness of the industry, demonstrating it as an exciting career path for future recruits.
- **Quality of training:** Apprentice training during this period has stalled, postponing access to specialist equipment and on-the-job training.
- **Employer demand:** Employer demand has plummeted over COVID-19, with apprenticeship recruitment and activity delayed.
- **Employee demand:** Due to the uncertainty created by COVID-19, young learners are opting for the 'safe bet' of a university degree, rather than an apprenticeships.

Following the roundtable, the Spending Review announced various flexibilities and changes to the way in which elements of the apprenticeships policy works. These flexibilities included the ability for levy payers to transfer unspent levy funds in bulk to SMEs with a 'pledge function', as well as a commitment to test methods of supporting apprenticeships in industries with flexible working patterns.⁷ We were interested to note that the policy option of front-loading off-the-job training, which was introduced in the Spending Review

as a construction sector pilot, was also mentioned in our roundtable as a potential pathway. As an industry, we were pleased to see that the Government continues to consider apprenticeships a priority, but it is too early at this stage to analyse the impacts of these latest changes.

We are also encouraged to hear of the upcoming SIP 2030 Apprenticeship Group, which we believe will be ideally suited to take on responsibility for implementing many of the recommendations made in this report.

In response to both recent and longstanding issues with apprenticeships in the life sciences sector, this paper summarises two main areas of work in which we as an industry want to develop, working with Government.

1. Introduce further flexibilities into the way in which the industry can use their existing levy.

- Government should introduce the ability to merge digital accounts and levy pots following M&A activity (which happens frequently in the life sciences sector).
- Government should allow for levy funds to be allocated on an accruals basis, such that there is no danger of multi-year programmes being at risk of a lack of funding through clawback.
- Government should work with the life sciences industry to trial the introduction of additional flexibilities to increase the diversity of apprentices, as a pilot sector. This includes the ability to use levy funds for additional learner support or social/safeguarding needs.

2. Improve the way in which the industry can deliver apprenticeships, through Government collaboration with the SIP 2030 Apprenticeship Group.

- The SIP Apprenticeship Group should lead a piece of work looking at the impact of the 2018 levy reforms, and report conclusions to the Office of Life Sciences.
- The SIP Apprenticeship Group should lead on behalf of the industry to explore a pilot sector-wide approach to promoting and advertising all life sciences apprenticeships through UCAS.
- Government and the SIP Apprenticeship Group should pilot a model of 'shadow apprenticeships' in which the necessity for a standard's mandatory qualification is considered alongside recognition of prior learning and is separated from the skills element, such that learners from other education pathways can move into and out of the industry on a more flexible basis. This would significantly increase the flexibility and attractiveness of the industry and improve outcomes and jobs for learners.
- Government should work with the SIP Apprenticeship Group to design and pilot a model to explore digital delivery and assessment of life sciences apprenticeships.
- Government should work with the SIP Apprenticeship Group to conduct analysis on methods to improve the flexibility of apprenticeship delivery, through greater use of Apprenticeship Training Agencies and front-loading of off-the-job training. This would retain positive elements of changes made by the sector in response to COVID-19.



Section 1: Ensuring suitably skilled labour supply in the life sciences sector



In order to contextualise the intricacies of the apprenticeship levy and how it might be reformed, attendees first focused on the other longstanding issues behind the life sciences' skills gap. Like alternative higher and further education pathways, apprenticeships can do a great deal to close the skills gap facing our sector, but must be dealt with as a small part of a wider policy picture. The main issues highlighted were:

- ◆ Flow and relevant skills of STEM graduates
- ◆ Continuing professional development (CPD) and upskilling
- ◆ Hiring and retaining of foreign talent
- ◆ Attraction and perception



Apprenticeships are a piece of the puzzle, but there's a lot of other pieces we need to keep in context.



Lack of STEM graduates with industry-relevant skills

The UK enjoys a large pool of life sciences graduates, with 141,000 students studying life sciences at 118 UK universities in 2016/17 alone.⁸ However, this has not been converted into a sufficient number of industry-ready employees.

For those graduates who do choose to enter industry, their academic education tends to be separated into siloed faculties. Attendees warned that this creates graduates with skills that are often poorly aligned with industry needs, lacking the interdisciplinary approach that life sciences employees require.⁹ Specifically, some of the key skills in need of development identified in the SIP's 2030 Skills Strategy were digital, computational and statistical literacy skills, as well as skills for cross-team and cross-disciplinary working.¹⁰ These skills gaps are limiting the productivity of graduates in the sector, often leaving them struggling to keep up with the rapidly changing technologies and innovations of their working environment.

Inadequate provision of Continuing Professional Development (CPD) and upskilling

The life sciences sector, in common with many other industries, is delivering significant volumes of training and development to its existing workforce.

However, given the speed of developments in the sector, there is a risk of some elements of the workforce being ill-prepared for facing contemporary needs, such as advances in technological developments. For example, without upskilling workers with the digital capabilities that the sector requires, the industry will not be able to leverage new artificial intelligence and big data technologies to their full potential.¹¹ In addition, insufficient professional development can be a push factor away from the sector, discouraging talented recruits from staying in the industry throughout their careers.

Concerns around the ability to continue hiring and retaining foreign scientific talent

We welcome the agreement of a Brexit deal, and the Government's introduction of a post-Brexit immigration system which supports highly skilled immigration and intra-company transfers, and allows global entrepreneurs to establish themselves in the UK¹²

We hope that programmes such as the Global Talent route will continue to facilitate the frictionless international research collaboration that has made the UK a life sciences world leader. However, it remains to be seen as to whether these changes will meet our sector's needs. It will be a particular challenge for the system's skill requirements to keep up with the pace of change in the life sciences industry, so we can keep a constant flow of highly skilled labour exactly where industry needs it. As part of that, the points-based system for allowing highly skilled labour into the UK should be continually reviewed to ensure that it is meeting industry needs.

Irrespective of whether our pool of talented workers shrinks after Brexit, it will be important to maintain our drive for a strong skills base by investing significantly in boosting the UK's domestic STEM workforce. Restriction of the supply of suitably qualified labour will negatively impact the sector, but if business and Government invest now in skills and enabling platforms, we can drive a strong post-COVID-19 recovery.

Our industry suffers from an attraction and perception gap

Whilst COVID-19 has made people more aware of the life sciences sector and has helped attract potential workers, we need to do more to make life sciences an exciting and prominent career path, particularly for young people.

This involves providing people with more information about our industry, and what sort of opportunities we provide. While we already publish information on different academic and vocational routes into our industry, from T-Levels to PhDs, we should explore further avenues to disseminate this information, showing a wider range of people what career paths and earning potential these routes can provide.¹³ This recruitment drive could be accelerated by Government support for a one-stop portal to advertise jobs and career paths throughout our sector. Our industry and STEM industries in general also need to consider an intersectional approach to attracting new talent, as some demographic groups are much less likely to consider a career in science than others. For example, the Wellcome Trust's *Science Education Tracker 2019* found that 56% of boys in Years 10–13 were very or fairly interested in a science career, compared to only 41% of girls in Years 10–13.¹⁴ If we are to properly utilise the UK's talent pool, we must be able to encourage all parts of UK society to work in our industry.

Section 2: Apprenticeships in the life sciences sector

Apprenticeships are a key part of the solution to the life sciences skills gap. They provide practical skills and experience that traditional higher education routes tend to lack, offering both new recruits and existing members of the workforce industry-relevant skills

It is therefore extremely encouraging to see that apprentices are experiencing strong growth in the life sciences and industrial sciences sectors, with estimated starts on science-specific apprenticeship standards in 2018/19 over 14 times higher than in 2015/16.¹⁵ These new starts are driven by our ambitious apprenticeship agenda, that delivers high-quality, high-level apprentices to where the industry needs them.

Currently, employers continue to struggle to use apprenticeships to their full potential. Despite trending upwards in recent years, levy recovery is low in the life sciences sector, with the sector spending only 24% of its levy contributions in 2020.¹⁶ This is a significant improvement from the 6% levy recovery achieved in 2018, but more progress needs to be made.¹⁷ Attendees identified a number of limiting factors on life sciences apprenticeships as contributing to the low levy spend, namely the flexibility of the apprenticeship system, quality of training provision for certain courses, geographical inequality, and a lack of awareness among potential learners.



The sector [is] incredibly enthusiastic about the apprenticeship route at the higher levels. Following the sector's early commitment to adopting apprenticeships as a valuable method for growing the talent base, fantastic careers in areas such as bioinformatics, advanced manufacturing and scientific research are now achievable through this route.

Dr Malcolm Skingle CBE, Chair,
ABPI Academic Collaboration, Education
& Skills Strategic Leadership Group



There really is an issue here: employer spend has, in real terms, decreased, and when you take into consideration the massive increase over the last ten years in the number of people in work, it is actually a significant drop.



The apprenticeship system still suffers from a lack of flexibility

Our discussion revealed that many companies still struggle to know what to do with all their apprenticeship money, arguing that they need more flexibility on how they can spend their pots.



We've got a £750,000 levy, we've spent 7% of it, we have a dozen apprentices (we have 800 UK employees), and we are really struggling to know what to do with it. It's just languishing.



Where they [SMEs] do struggle is the infrastructure to support, recruit, bring in, onboard, work with universities, work with providers to build that apprenticeship programme and build that kind of cohort.

Attendees claimed that there are two issues with regard to flexibilities in the system: one is that there are not enough flexibilities to allow companies to spend their levy pots, and the other is that many companies cannot take advantage of existing flexibilities in the system. For example, attendees claimed that companies struggled to identify businesses to which they could transfer levy funding. Attendees attributed this to a lack of awareness of transferable levy sources and destinations from both levy payers and receivers. Suggestions for further flexibilities ranged from small adjustments that allow levy pots to be properly merged when M&A activity occurs, to system changes such as allowing levy contributions to be spent on non-apprenticeship training.



We can't spend it fast enough.

Many attendees also felt that SMEs in particular are unable to fully take advantage of existing flexibilities in the system. For example, levy payers are able to transfer 25% of levy pot funds to other employers, but many of these smaller employers lack the infrastructure to be able to take on apprentices. SMEs often lack dedicated HR or finance staff to manage apprentices, and are therefore not well equipped to engage with the apprenticeship system. These smaller businesses would welcome flexibilities aimed at subsidising the cost of apprenticeship onboarding infrastructure, thus allowing them to take on apprentices.

However, attendees recognised that the system relies on the unclaimed money from levy payers that goes on to support those who do not pay into the levy. If we were to make the system too malleable and allow it to encompass non-training expenses, these smaller companies would not receive any funding.

Life sciences companies can struggle to find high-quality training providers, with apprenticeships held back by weak infrastructure

It is encouraging to see the trailblazers continuously improving and developing apprenticeship standards which cover relevant occupations, as well as developing training courses that match specific industry needs. Providers have also been improving, building and adapting new courses for the industry, as seen in the successful Advanced Therapies Apprenticeship Community.¹⁸

That being said, attendees highlighted that the specialist nature of many life sciences apprenticeships meant that there is a lack of choice of quality training providers to deliver exactly what the sector needs. Thanks to the upper limit set by apprenticeship funding bands, there are low incentives for providers to run high-cost training courses in STEM, leading to many high-quality apprenticeships in these subject areas lacking adequate choice between quality training providers.¹⁹ These effects are being felt in our industry; in the SIP's 2018 Apprenticeship Survey, 29% of respondents who are not currently training any apprentices stated that it was because there was a lack of applicable apprenticeship frameworks and standards available for their needs.²⁰ Despite significant progress, providers are still struggling to deliver all the courses that our industry needs.



There are very few quality training providers who can deliver what we want and very few do the specific training programmes that we ask for

Not only were attendees concerned about the courses themselves, they also identified structural weaknesses in how the courses were delivered. Attendees highlighted that the infrastructure within apprenticeship delivery organisations is not as robust as it should be, with providers tending to be reliant on a few key staff, most of whom are overworked. A lack of apprenticeship infrastructure is also found in employers themselves, with 46% of respondents who do not currently train any apprentices in the SIP 2018 survey claiming that they did not take on apprenticeships because they did not have adequate staff and resources to offer training.²¹ In contrast, only 25% said that the reason for not hiring apprentices was because no recruitment was required. As such, there is a certain administrative weakness for both training providers and employers in the way apprenticeships are delivered, which does not make the most out of otherwise well-constructed courses. This administrative fragility means that apprenticeship courses risk diminishing their key advantage: their ability to design courses that are tightly focused on evolving industry needs.



When we talk about quality, it's not just what they deliver, but how well embedded that is in their organisation as a delivery model, otherwise you're just following around the person who's good

There is significant regional inequality in the provision of high quality life sciences apprenticeships

In addition to a differing level of choice and quality between specific apprenticeship courses, attendees also agreed that there are huge regional variations across the country in the number of relevant, quality training providers. In contrast with other common patterns of socio-economic opportunity, an emerging trend in the discussion was that the further south you go in the country, the less choice there is in apprenticeship training provision. This was not due to the fact that the bigger providers did not offer any courses in the south, but rather because, with the exception of the Golden Triangle of Oxford, Cambridge and London, there is often simply not a commercially viable size of cohort in the south of England to make it attractive for providers to run a variety of courses. This is particularly true for courses that involve high costs and expertise, such as life sciences apprenticeships that require specialist lab equipment.

Attendees agreed that this regional variation in prospective learners was due to the north of England containing several industrial clusters, which put a large science population very close together, essentially guaranteeing providers that there will be enough people taking their courses.²² These clusters provide the critical mass for courses which require intensive face-to-face delivery, with courses such as Science Industry Maintenance Technician and Science Manufacturing Technician identified by attendees as examples of this. However, companies in the south who do not lie in a cluster have to use more generic standards and then support their apprentices with further on-the-job training.



It's really difficult to get that critical mass down south; the quality might be there if they started to deliver it, but they just can't see the business benefits because they just don't have that size of cohort.

This is not an issue for every STEM apprenticeship standard; attendees were able to identify courses such as the Laboratory Technician apprenticeship that are in high demand throughout the country, whilst most degree and masters-level apprenticeships are delivered virtually through a one-week residential, thus circumventing geographical issues.

Several attendees also highlighted that there may be cultural differences between the north and south of the country with regard to attitudes towards apprenticeships. It was speculated that people and universities in the north of the country may be more open to the idea of apprenticeships (or may be perceived to be this way by training providers), whereas in the south families tend to be more interested in the traditional university route. This issue may then be compounded if it is applied to non-traditional apprentice industries such as life sciences, which are not well known, even by those interested in apprenticeships. This results in training providers believing that the south may not be a commercially viable place to run many courses and invest resources in, further accentuating this divide.



It's a case of there is less choice of provider down south so it's very dependent on the standard being delivered

Life sciences apprenticeships suffer from low public awareness



Traditional pathways into the life sciences industry are really well understood... really well established, it's what all careers advisors talk to you about.

This varied perception of apprenticeships across the country is itself perpetuated by a general lack of awareness of what apprenticeships in the life sciences sector consist of, and what potential career pathways they might enable.

All attendees argued there was a lack of awareness of career paths in the life sciences sector, especially from schoolchildren, created by the absence of a clear and comprehensive academic and professional progression pathway laid out for students. Additionally, traditional academic pathways such as university degrees are well established and understood, whilst non-traditional routes such as apprenticeships are less well known. This low visibility, it was argued, led to a particular lack of understanding of non-traditional routes into the life sciences. Information provided on Government websites is not user friendly and is very disparate, whilst training providers only release information on courses that they operate themselves. None of this contributes to ease of comparison, nor for making informed choices. As such, it is no surprise that the SIP 2018 Apprenticeship Survey revealed that this lack of information is impacting apprenticeship uptake, with 25% of employers who are not currently training apprentices claiming that there is a lack of information and support.²³

Even if we can boost the general awareness of apprenticeships, there still remains the issue of their perception, whereby apprenticeships and other vocational routes into the sector struggle to achieve parity of esteem with academic paths.²⁴ This means that apprenticeships are considered less attractive than more traditional routes into industry, limiting the number of talents learners interested in taking on an industry orientated apprenticeship.



Section 3: The impacts of COVID-19 on apprenticeships in the life sciences sector

The unique role of the life sciences industry in developing a vaccine has not spared it from the impact of COVID-19. Roundtable attendees unanimously agreed that COVID-19 has harmed the sector's skills agenda. The pandemic has highlighted and exacerbated existing weaknesses in the provision of apprenticeships, while employer demand for apprenticeships has plummeted since May 2020.²⁵ However, attendees were also able to identify opportunities created by COVID-19, both in enhancing awareness of apprenticeships in the life sciences sector, and in innovating the way in which apprenticeships are delivered.

Opportunities

Despite the severe challenges created by COVID-19, both the life sciences industry and apprenticeship training providers have worked hard to mitigate the impact of the pandemic, and have even identified and built on opportunities created in this period. These benefits have come not only from the enhanced public awareness of jobs in the life sciences created by the industry's successful development of a COVID-19 vaccine, but also in the accelerated uptake of online learning in apprenticeship delivery.



Life sciences' profile boost from COVID-19 is an important recruitment opportunity

Since the start of the pandemic, COVID-19 has placed 'experts', and the life sciences industry in particular, at the centre of public health and public policy debates.

More recently, the successful development of a COVID-19 vaccine has provided a tangible and prominent example of how the life sciences industry's work benefits not only their employees and the economy, but also the people of the UK and the rest of the world. Attendees agreed that these developments, and the vaccine in particular, have highlighted the pharmaceutical industry as an exciting potential employer, in the case of many people for the first time. This is not a phenomenon limited to those with undergraduate or postgraduate degrees – attendees highlighted that there have been apprentices working on COVID-19 vaccines in the UK and their stories provide an excellent opportunity for the industry to demonstrate that it is an attractive and impactful career path for people with a broad range of educational backgrounds.



Rather than just going to the pharmacy and getting your prescriptions, people are now thinking, 'I can work in this, and I could find the cure for COVID-19.'

Some training providers have already been working to capitalise on this opportunity. Attendees noted that for a portion of training providers, COVID-19 has reduced the workload of some staff who are unable to carry out their normal responsibilities. We have seen many of these staff work to accelerate the design of upcoming sciences apprenticeship courses, so they will be ready to recruit the next generation of life sciences workers who have been drawn to the industry.



We have apprentices who are working on the cure for COVID-19... if that's not a case study that [we] can get in front of schoolchildren to say they can do these things, then I don't know what is.

Online training has the potential to remove geographical constraints for apprenticeship training and end point assessments

The coronavirus has, like in higher education institutions, moved the academic portion of apprenticeships online.²⁶

The challenges of this transition will be detailed below, but attendees emphasised that they have seen a vast improvement in the quality and quantity of training delivered online since the start of the pandemic. In fact, the success of this digital delivery has highlighted the potentially transformative role that digital learning could play in the apprenticeship system's future. Delivering learning online allows more people to take up apprenticeships, and helps avoid issues where training providers cannot obtain a critical mass of students to run a course in their region. There are limits to these potential benefits, of course, the most serious being that some training requires the in-person use of specialist equipment, and thus cannot be moved online.

It was really good to hear about some of the advantages of moving to digital that have opened up opportunities, either for different people to engage in apprenticeships or for the delivery to be more effective. I think we really need to capture some of that so that as we go back to whatever normal is, we embed that into the system



That [digital EPAs] really helps with workflows and booking timings, and also where we can have our assessors from. In the past it was quite regionally locked, we needed an assessor nearby whereas now we can get specialist assessors from all over the country

Apprentices' End Point Assessments (EPAs) have also been moved online during the pandemic, and attendees noted that this change has been very beneficial for the workflow of assessors.²⁷ Before the pandemic, specialist assessors for some courses were in very high demand, but geographically constrained in their ability to assess apprentices. By moving EPAs online, these assessors have been freed from these geographic limits, and have been able to help apprentices throughout the country, dramatically improving their workflows.

In helping to update and digitise apprenticeship training, attendees claimed that COVID-19 has also seen employers take a more active role in quality assessments. This is a positive change, further cementing apprenticeships' key advantage of being tightly focused on, and driven by, employer needs. Attendees were optimistic about the potential for the advancements made in digital and employer-led training during COVID-19 to be carried over as permanent improvements, even when the threat of the pandemic has receded.

Negative impacts

Despite being very positive about the efforts of Government, employers and training providers, attendees agreed that COVID-19 has raised a number of challenges for life sciences apprenticeships, whilst also exposing and exacerbating existing weaknesses in the apprenticeship system. These issues are focused on the issues of employer and employee demand for apprenticeships, as well as the quality of training provided by apprenticeship courses.

The quality of training for apprenticeships during COVID-19 has fallen

All attendees expressed concern that the quality of training given to apprentices in this period may not live up to the standards set by previous intakes.



Work experience has moved online, so that's less people going on-site and less people learning about the science industry

Whilst the transition to online learning has been managed well, many life sciences apprenticeships require access to specialist equipment and time in labs that cannot be replicated online.²⁸ Several attendees pointed out that this issue was more pressing for high-quality life sciences apprenticeships than other apprenticeships with lower wage expectation outcomes that did not necessitate access to labs and equipment.

Even when the transition online has been managed well, attendees mentioned how apprentices who work remotely have missed out on time spent with their colleagues on their employer's site. While apprentices still may be able to pick up the necessary knowledge and skills for their role, they will be missing out on learning about the reality, culture and expectations of being in the workplace. This real experience of working life is one of the key elements that prepare apprentices for work in the industry, and missing out on this is a significant loss. Attendees pointed out that in these situations, it is employers that will have to plug the gap left in apprentices' educations.

Employer demand has fallen significantly

Attendees unanimously agreed that the most immediate impact of COVID-19 on life sciences apprenticeships is that employer demand has significantly decreased.

Attendees, as well as respondents to the SIP 2020 Apprenticeship survey, reported significant delays in recruiting new apprentices, leading to a temporary drop in apprenticeship starts.²⁹ However, life sciences companies appear to be poised to recover, with respondents to the SIP 2020 Apprenticeship survey forecasting a 3% increase in life sciences apprenticeship starts over the next 12 months, compared to the previous year.³⁰ These life sciences apprenticeship delays have to be put in the context of the national average for apprenticeships, which dropped by almost 50%.³¹ Attendees suggested that this general drop in employer demand has made

training providers, even in the life sciences, very nervous about running courses for fear of under-subscription. Attendees also worried that this situation would further discourage universities from carrying out degree apprenticeships, to which, attendees claimed, some members of the sector have already shown a disinclination. The dramatic drop in numbers of apprentices over this period led attendees to highlight the need for the apprenticeship training market not to be entirely reliant on employer demand, so that in times of hardship, such as recessions, we would not see apprenticeship levels plummet.



When you build a skills system that relies heavily on employers being able to offer jobs or placements, then what happens at the point where employer capability to do that reduces, say in a recession, when you have more young people wanting to take those opportunities?



That's been the major impact we've seen – not scientific companies furloughing people, but providers furloughing them.

Even when employer demand remains, we have seen issues where the training providers have been unable to continue apprenticeship courses during the pandemic as their staff have been on furlough, even in situations where courses are full and there is demand.³² This has caused disruption for apprentices currently in training, stalling their academic and professional development.

Employee demand has also fallen

Several attendees highlighted the impact of COVID-19 on young people's education choices.

During this period of extreme uncertainty, attendees argued that young people have opted for the 'safe bet' of a traditional university education, rather than applying for an apprenticeship. Demand for higher education has increased during the pandemic, with 4% more accepted applicants from the UK in 2020 than 2019, despite three years of decreases beforehand.³³ In contrast, apprenticeship starts have fallen by 50% from 2019 to 2020.³⁴ Despite faring better than the national average, life sciences apprenticeships have still experienced severe delays in apprenticeship starts and recruitment, losing significant ground to higher education pathways. An interesting caveat to this is that several attendees provided anecdotal evidence that demand for apprenticeships from current undergraduate students is rising fast, as they have been dissatisfied by the offerings of a purely academic education, and want practical industry experience with a clear path to employment. Attendees suggested that the decrease of sandwich placements in undergraduate degrees resulting from the coronavirus is only increasing this desire for on-the-job experience as part of education.³⁵



We have seen no dip at all in demand for HE, in fact, applications are as high as ever because it seems like a safe bet... that option isn't available for FE and apprenticeships.

Attendees also noted that the issue of recruitment has been exacerbated by the curtailment of face-to-face recruitment this year, on which apprenticeships are far more reliant than traditional higher education pathways. Until the status and profile of apprenticeships, particularly in the life sciences, are raised, this reliance on face-to-face recruitment will continue to be an issue.



We used to do about 400 events in schools each year, we just can't do that anymore. We run virtual events instead, but they're less well attended

On top of the drop in overall employee demand for apprenticeships, attendees pointed to noteworthy trends in demand for different types of apprenticeships. Even during COVID-19, the life sciences sector has been able to maintain its focus on hiring young, new recruits through apprenticeships at a time when, nationally, many industries have instead switched to upskilling existing workers. For all apprenticeships, the proportion of apprentice starters over 25 years old has increased from 55.1% in 2019 to 62.5% in 2020.³⁶ In comparison, the proportion of life sciences apprentice starters over 25 years old has remained steady, changing from 21% in 2018 to 22% in 2020.³⁷

Meanwhile, the proportion of life sciences apprentices hired as new recruits, rather than existing employees, has not fallen, changing from 72% new recruits in 2018 to 71% in 2020.³⁸ Despite COVID-19, our sector is maintaining our ambition to use apprenticeships to open up the life sciences industry for a diverse new generation of recruits.

Despite a strong performance with regard to young and new recruit apprenticeships, the life sciences sector has seen the number of low-level apprenticeships fall dramatically. Since 2018, the volume of Level 6 and 7 apprenticeships has increased from 11% to 29% of total apprenticeships.³⁹ While higher-level apprenticeships are certainly a good thing, our sector is keen to maintain the appropriate balance between different apprenticeship levels, so that we can use this tool to recruit people from a variety of educational backgrounds.



There's been a real downturn in enrolments, and interesting, what has held up most within that is degree apprenticeships.

Since 2018, the volume of level 6 & 7 apprenticeships has increased from 11% to

29%

of total apprenticeships.



There's been a big shift towards giving apprenticeships to existing employees versus new employees.

Section 4: Recommendations

It has never been more important that we have a flourishing life sciences sector.

This sector is enjoying an unprecedentedly high public profile and is exciting for existing and prospective workers alike. Life sciences can provide an attractive offer of high-level apprenticeships as an alternative to higher education, but at present we are not spending as much of our levy pot as we would want, and we run the risk of not using the apprenticeship levy to its full potential.

The Government has already shown an impressive commitment to apprenticeships, making available £2.5 billion of funding, and introducing further flexibility for employers in the recent Spending Review.⁴⁰ We firmly believe that with select changes to the system, our sector can begin to utilise the levy and the apprenticeships system to its full potential.

In response to both recent and longstanding issues with apprenticeships in the life sciences sector, this paper summarises two main areas of work in which we as an industry want to develop, working with Government.

1. Introduce further flexibilities into the way in which the industry can use their existing levy.

- Government should introduce the ability to merge digital accounts and levy pots following M&A activity (which happens frequently in the life sciences sector).
- Government should allow for levy funds to be allocated on an accruals basis, such that there is no danger of multi-year programmes being at risk of a lack of funding through clawback.
- Government should work with the life sciences industry to trial introducing additional flexibilities to increase the diversity of apprentices, as a pilot sector. This includes the ability to use levy funds for additional learner support or social/safeguarding needs.

2. Improve the way in which the industry can deliver apprenticeships, through Government collaboration with the SIP 2030 Apprenticeship Group.

- The SIP Apprenticeship Group should lead a piece of work looking at the impact of the 2018 levy reforms, and report conclusions to the Office of Life Sciences.
- The SIP Apprenticeship Group should lead on behalf of the industry to explore a pilot sector-wide approach to promoting and advertising all life sciences apprenticeships through UCAS.
- The Government and the SIP Apprenticeship Group should pilot a model of 'shadow apprenticeships' in which the necessity for a standard's mandatory qualification is considered alongside recognition of prior learning and is separated from the skills element, such that learners from other education pathways can move into and out of the industry on a more flexible basis. This would significantly increase the flexibility and attractiveness of the industry and improve outcomes and jobs for learners.
- Government should work with the SIP Apprenticeship Group to design and pilot a model to explore digital delivery and assessment of life sciences apprenticeships.
- Government should work with the SIP Apprenticeship Group to conduct analysis of methods to improve the flexibility of apprenticeship delivery, through greater use of Apprenticeship Training Agencies and front-loading of off-the-job training. This would retain positive elements of changes made by the sector in response to COVID-19.

Government should introduce the ability to merge digital accounts and levy pots following M&A activity (which happens frequently in the life sciences sector).

Currently, when a company is acquired, its digital account cannot be merged into the acquiring company's account.

The only solution is for apprenticeships to be funded out of the old company until the balance is exhausted. This creates multiple issues: it is administratively over-complex for an L+D department to manage multiple accounts; it often means keeping a legacy company legally open solely for the apprenticeship account; and it means that balances in an account insufficient to pay for a suitable apprenticeship are left languishing because they cannot be combined. It also means that after 24 months, such balances will be clawed back and lost. A straightforward flexibility would be to allow for greater merging of accounts when they are run by the same legal company entity.

Similarly, at the moment local enterprise partnerships (LEPs) and local councils are responsible for running levy transfer services. This means that multi-sited companies – even those who are geographically next to each other, such as in Leeds and in Harrogate – have to apply to transfer their levy pot funding between local councils to allow an apprentice at a different site to start their apprenticeship. These artificial barriers are an unnecessary administrative and cost burden, which could be avoided if the Government were to consider levy transfers at a national level, conducting levy transfers through national intermediaries rather than local councils and LEPs.

Government should allow for levy funds to be allocated on an accruals basis, such that there is no danger of multi-year programmes being at risk of a lack of funding through clawback.

Presently, when an apprentice starts a course, the funds to pay for that are drawn down as needed – and much of the payment is backloaded to the end of the programme.

This means that for apprentices being enrolled on multi-year courses, there is a risk that the digital account, although it could be in sufficient credit when the apprenticeship starts, will not be by the end – for example, as with many life sciences companies who hover around the £3m paybill and therefore move in and out of being levy payers, or because the 24-month clawback means that funds which are nominally allocated to an apprentice but not yet spent then are taken away. A simple flexibility would be to begin to account for levy funds on an accruals basis – which is to say that when an apprentice begins a programme, the funds to cover that programme are allocated within the digital account and not susceptible to clawback because they are nominally unspent.

Government should work with the life sciences industry to trial additional flexibilities to increase the diversity of apprentices, as a pilot sector.

One question raised in the roundtable was how to ensure a diverse range of people take up apprenticeships within the life sciences sector.

Currently, employers of apprentices who have additional learning support or social/safeguarding needs cannot use their levy pots to pay for extra support needed for these workers. Whilst there are other funding options available for apprentices, a 2018 study found that many employers were concerned that the process of applying for this funding was complex and off-putting, leading to some providers failing to claim all the support they are due.⁴¹ Allowing additional learning support to be funded by the levy pot, with a clear list of eligible criteria, would make it easier for companies to take on apprentices with additional support needs, further opening this education pathway for them.

The SIP Apprenticeship Group should lead a piece of work looking at the impact of the 2018 levy reforms, and report conclusions to the Office of Life Sciences.

As an industry, we recognise the need to reflect on changes that have been made to the apprenticeship system and offer constructive feedback to the Government.

The industry has had a positive relationship with the Office of Life Sciences and is keen to support ongoing work. This paper recommends that the industry, through the SIP Apprenticeship Group, carry out detailed analysis of the 2018 reforms and flexibilities introduced by the Government to the apprenticeship system, and produce a report detailing what has worked and what has been less successful, reflecting on how user experience of the apprenticeship system has been impacted. This report would be delivered to the Office for Life Sciences, for the OLS to consider and respond to.

The SIP Apprenticeship Group should lead on behalf of the industry to explore a pilot sector-wide approach to promoting and advertising all life sciences apprenticeships through UCAS.

Currently, the apprenticeship market lacks an equivalent sector-wide hub for apprenticeship advertisements and information of the same capacity and visibility that is enjoyed by the HE sector via UCAS. UCAS data suggests that a high number of applicants to HE also express an interest in high-level apprenticeships – 47% in the last cycle.⁴² The life sciences sector should work with UCAS and offer itself as a pilot sector for providing a streamlined way for talented students to apply for life sciences apprenticeships at Level 4 and above through the UCAS portal. This would allow apprenticeships to offer the same ease of access to prospective learners as universities, increasing their appeal.

Government and the SIP Apprenticeship Group should pilot a model of ‘shadow apprenticeships’ in which the necessity for a standard’s mandatory qualification is considered alongside recognition of prior learning and is separated from the skills element, such that learners from other education pathways can move into and out of the industry on a more flexible basis. This would significantly increase the flexibility and attractiveness of the industry and improve outcomes and jobs for learners.

Currently, and accidentally, the system is insufficiently flexible for students coming into life sciences apprenticeships from an academic path. For example, attendees at the roundtable detailed how university and T-Level graduates who want to join the life sciences workforce have a strong knowledge base, but lack the skills and behaviours taught in an apprenticeship.

They are, however, not allowed to apply for an equivalent level apprenticeship, as they already have the relevant qualification and cannot be funded. However, when looking at a more advanced apprenticeship which they could be funded for, they are likely to be less skilled than peers who have completed a level 3 apprenticeship and have skills and behaviours for the industry as well as core knowledge. Employers could create an equivalent standard, thought of conceptually as a ‘shadow apprenticeship’ that offered an accelerated top-up of the skills and behaviours learned on an apprenticeship. These ‘shadow apprenticeships’ would consider the necessity for a standard’s mandatory qualification alongside recognition of prior learning; a significant change as it currently excludes many learners from accessing levy funding. This would be of huge benefit in increasing the supply of labour, by enabling graduates or T-Level graduates to gain the skills needed to progress on to higher-level apprenticeships.



Government should work with the SIP Apprenticeship Group to design and pilot a model to explore digital delivery and assessment of life sciences apprenticeships.

COVID-19 has shown how it is possible to create high-quality blended learning for apprenticeships – which recognises the need for significant practical laboratory time, academic study, on-the-job training, and certification and end point assessment.

However, such reforms have been by necessity ad hoc and not standardised across providers or across apprenticeship standards, and there remain some regulatory barriers around digital end point assessment. Furthermore, the need for life sciences apprenticeships to consistently have laboratory placements should not be underestimated. Given this, this report recommends that life sciences apprenticeship standards are an ideal candidate for a more formal programme to be reworked – when the trailblazers need to be refreshed in the coming time period in any case – to design the highest-quality standardised approach to blended learning and digital end point assessment. The impact of this model will be measured to determine the effect of online learning and assessment on longstanding issues within the apprenticeship system, such as overall volume of learners, social composition of learners, and their geographic location.

Government should work with the SIP Apprenticeship Group to conduct analysis on methods to improve the flexibility of apprenticeship delivery, through greater use of Apprenticeship Training Agencies and front-loading of off-the-job training.

Similarly, the last year and the COVID-19 period has led to enforced flexibilities with the front-loading of off-the-job-training for current apprenticeships.

In collaboration with the SIP Apprenticeship Group, we suggest the Government conduct a detailed piece of analysis exploring methods to improve the flexibility and adaptability of apprentice training. This would help ensure that apprentices can still be taken on during times of economic uncertainty, when employer demand falls. This research could examine the potential role of Apprenticeship Training Agencies (ATAs) and the impact of front-loading off-the-job training in increasing flexibility to the apprenticeship system. The model examined in this report would not be a programme-led apprenticeship: it would still revolve around an employer link, be levy funded, ensure practical skills, and provide a distinct, employer-orientated alternative to a traditional degree.

Section 5: Conclusion

The life sciences sector plays a crucial role in keeping the people and economy of the UK healthy. By driving R&D, encouraging inward investment and creating jobs, our industry helps drive the productivity and growth of UK plc.

We are grateful to enjoy an excellent relationship with Government, closely collaborating on issues including the skills agenda. As a sector, we directly employ 223,000 people, and have enormous potential to keep growing, offering many more high-quality jobs to UK workers.⁴³

Apprenticeships form a key plank of our ambitious skills agenda and we are working hard, in conjunction with Government, to take full advantage of the opportunities they present. We have already made an enormous amount of progress, but challenges remain before we can achieve apprenticeships' full potential. COVID-19 in particular has highlighted structural weaknesses in the apprenticeship system, particularly the fragility of both employer and employee demand, as well as apprentice training infrastructure. However, innovations triggered by the pandemic, such as online learning and assessing, have also presented novel opportunities for progress.

With the policies we have suggested in this paper, we believe we can use the recovery from COVID-19 as a springboard to accelerate the skills agenda, allowing life sciences and other sectors to use apprenticeships more effectively and lead the UK's efforts to build back better.



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