

Real Apprenticeships

Creating a revolution in English skills

Research by the Boston Consulting Group for the Sutton Trust

October 2013

BCG

THE BOSTON CONSULTING GROUP

**Improving
social mobility
through education**



Contents

Foreword	3
Executive summary	6
Recommendations	7
Our vision for apprenticeships	8
Current policy and consultations on reforms	9
Is there a real demand for apprenticeships?	13
The jungle of low-level qualifications and the education system	16
Improving the quality of vocational education for 14-16 year olds: scale or specialism?	19
Careers information, advice and guidance	21
Supporting business	23
The role of sector skills councils	25
Economic and social benefits	28
Full recommendations	29
Appendix	32

Foreword by Sir Peter Lampl

The mission of the Sutton Trust is to improve social mobility through education. For a growing number of young people – though still less than half the population under 30– gaining a place on a good university course is their route to a better life.

We asked the Boston Consulting Group (BCG) to look at the offering available in this country to those who do not go to university. With some exceptions, they found that it was poor. We also asked them to look at best practice around the world and what we could learn from other countries, as well as what could be introduced in this country. They found the Germanic system continues to have the best system of vocational education. In countries like Switzerland or Germany, whether you want to work in agriculture or banking, an apprenticeship is as much a vehicle of social mobility as a degree.

When I worked in Germany and ran businesses there I was always struck by the quality of people who had chosen an apprenticeship route rather than university. In areas such as banking, an apprenticeship could be as much a route to the top as for an engineer. More recently, when I visited Germany and Switzerland with the BCG researchers in preparing for this report, I was struck once again by the idea that apprenticeships were for professions as much as trades, for white and blue collar jobs alike. With such cross-class commitment comes real support from business and industry for top quality training.

At the Munich headquarters of Webasto, a successful international auto parts company, they actively set themselves the goal of employing 7 per cent of their workforce as apprentices at any one time, which is the norm in Germany. Some were employed making the parts in their factory. But far more were commercial trainees working in jobs from sales to marketing to finance, communicating effectively in German and English. All apprentices experience several aspects of the firm over three years, all have time at college and nearly nine in ten stay on with the company after their apprenticeship.

At the Aprentas training centre in Basel, Switzerland, funded largely by the chemical and pharmaceutical industries, I saw scores of young people training as chemistry and biology technicians in labs equipped with state of the art equipment costing £500,000 a piece, part-funded by government but largely paid for by companies, including some global market leaders as well as small firms. It is not unusual for Swiss employers to commit £20,000 a year over three years to train world-class employees.

The attitude in England is still very different, with limited honourable exceptions. Instead of a clear system of respected vocational routes, as this new analysis from the Boston Consulting Group for the Trust shows, we suffer from a complicated patchwork where too many young people are offered qualifications of little worth in a system that confuses employers and is not valued as it should be by society. When I speak to college principals, they say they want to offer many more level 3 (A level standard) apprenticeships but they find the commitment of employers to real apprenticeship training is far less than in Germany and Switzerland.

Young people who don't want to incur huge debts going to university find themselves between a rock and a hard place. With every apprenticeship being chased by eleven young people, there is clearly something amiss. In the last two years, we have heard a lot about an 'expansion in apprenticeships.' In fact, 75 per cent of these so-called apprenticeships have gone to adults aged over 25, many of them in work, and the majority are below the level 3 standard required for most technician or paraprofessional jobs.

Moreover, unlike the German and Swiss systems, there is no proper link between supply and demand. Colleges have to second-guess what the market needs or respond to student demand. That is why there are five Hair and Beauty qualifications awarded for every vacancy, whereas there are three vacancies for every STEM qualification awarded. In an apprenticeship

This is a cruel deception that has to stop. We need radical reform of apprenticeships, drawing on the imaginative blueprint presented in this report. Three year, high standard apprenticeships must become the norm, and there should be up to 300,000 new places available each year targeted on those areas of the economy where skills are needed most.

The analysis shows that it won't be enough simply to wish these apprenticeships into existence. It will need a radical cultural change accompanied by proper independent careers advice, a well-funded regulatory system to kitemark the best qualifications, wage subsidies to incentivise employers and training agencies to make it easier for small firms to get involved. We also need to develop far more licences to practise so that consumers know which tradesmen are properly qualified to do the job.

But the prize is a great one. We can transform apprenticeships from being a minority pursuit to being a genuine alternative to university for young people at all levels. We can drastically reduce youth unemployment, which with a million NEETs (young people not in education, employment or training) is a disaster. OECD research shows that if a young person doesn't get a job or stay in education, their skill level declines so much that within a few years they are unemployable.

Through real apprenticeships, we can develop within young people skills and attitudes that will stand them in good stead through their working lives, including punctuality, teamworking and communication. We can improve our economic competitiveness, increase productivity and save taxpayers' money. We can give consumers greater confidence in the small business people they employ. Above all, we can transform social mobility.

This would be a transformation in vocational, technical and professional education in Britain. Yet it is a revolution that we need to see embraced by policymakers and by politicians of all parties. Without it, we not only fail our young people, we also fail our own futures. I am very grateful to the Boston Consulting Group, particularly Ian Walsh and Astrid Woloszczuk, who led the team behind this report, for their excellent analysis and for their continued partnership with the Sutton Trust. I am also grateful to Ian Nash and Sue Jones (Nash & Jones Partnership) for writing this report.

Sir Peter Lampl
Chairman
The Sutton Trust and the Education Endowment Foundation

At BCG, we're very proud of our work with The Sutton Trust over many years to help improve education in the UK. We were excited to partner with Sir Peter Lampl and his team on the crucial question of vocational education. The UK has much to learn from other systems and the prize for doing so is considerable. We hope this publication helps further that cause.

The Boston Consulting Group has had a strong relationship with the Sutton Trust since its inception and we are deeply committed to improving education in the UK.

BCG is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients from the private, public, and not-for-profit sectors in all regions to address their most critical challenges, and transform their enterprises. We have a wealth of experience in the education sector globally as a core segment within our Public Sector practice.

We are delighted to be involved in the research and writing of this report.

Ian Walsh
Partner and Managing Director
The Boston Consulting Group

Executive Summary

The problems - why we need to change

- The English education system is failing nearly half its young people by providing inadequate vocational opportunities. Across the population as a whole, more than four in ten people have only low level qualifications – below Level 3 (A-level standard) – with little value in the labour market.
- The UK labour market faces a fundamental skills mismatch. For example, there are five Hair and Beauty qualifications awarded for every vacancy¹, whereas there are three vacancies for every Science, Technology, Engineering and Maths (STEM) qualification awarded. In particular, we train too few technicians.
- With 18,000 qualifications and around 150 awarding bodies, the UK system of vocational education and training is far more complex than in any of the other leading economies and creates a state of confusion and bewilderment among students, parents and employers.
- Sector Skills Councils (SSCs), who are in charge of quality control, remain vastly under-resourced – with only £25m, they have one-tenth the funds of their German counterparts even though they have 18,000 qualifications to oversee, compared to 350 in Germany. They are therefore powerless to implement change.
- Current funding incentives push students onto the academic A-level path, resulting in about a third (31%) of young people dropping out, whereas many of those who drop out would have had much better prospects in apprenticeships.² In addition, too much low-quality vocational education is being taught in schools, where many students receive poor careers advice and guidance.
- With many lasting a single year, apprenticeships are of low quality and too short compared with those in other leading economies, where three years is the norm. Too few employers offer apprenticeships (20% in the UK compared with 50-60% in Germany and Switzerland) and there is too little support for the creation of high quality dual-track apprenticeships combining workplace training and off-site study.
- Sector Skills Councils need more effective employer involvement and control over the form and content of what should be fewer qualifications on offer – there should be no more than five “preferred” qualifications for each occupation.
- Evidence shows that, in order to tackle significant skills shortages, the UK needs to create between 150,000 and 300,000 quality apprenticeships (level 3 or higher) each year. These should be a mix of new jobs for young people aged 16-24 who are at school, college or entering the labour market and be offered directly by employers or be innovative apprenticeships linked to small firms and training providers. But of the 240,000 new apprenticeships created in the past two years, 58% were low level (Level 2 – GCSE standard) and 75% went to people aged over 25 and who were already employed.
- The challenge to match other leading nations is huge: with two-thirds (64%) of UK apprenticeships judged ‘low quality’, Switzerland offers seven times as many high quality apprenticeships for its population size. Also, only 36% of UK apprenticeships are 3 years at Level 3 or higher; this compares poorly with Germany, which not only has a much higher participation rate, but also has 90% of its apprentices in three to four year programmes at Level 3 or higher.
- Government spending is not directed effectively enough. This report argues for a government “kick-start” with apprentice wage subsidies in a twelve year programme (covering nine cohorts of three years each) pooling schemes to help small businesses and information campaigns for employers and students on the cost benefits of apprenticeships. The estimated rewards are considerable – an increase in GDP by around £8bn and reduce government spending by £2.5bn, net of all subsidies.

Recommendations

- Radically expand apprenticeships, with up to 300,000 extra new apprenticeship starts each year the vast majority should be three years at level 3, with some four years at level 4, and no more than 10% at level 2, with a two-year duration. There are fewer than 200,000 level 3 starts each year now.
- The new apprenticeships should be “dual-track”, combining workplace training with off-site study, and lead to an occupational or trade qualification, such as a “Professional Certificate in Automotive Engineering”, which would set the minimum standards required for further education leading to a Licence to Practise in a trade or to open a business.
- Address the gap in supply of quality (Level 3 or higher) apprentices by offering booster STEM (Science, Technology, Engineering, Maths) courses in all Further Education colleges to vocational students who have not achieved the minimum level to pursue STEM qualifications and boosting funding for qualifications in fields such as engineering with skills shortages.
- Simplify the qualifications market by giving re-empowered and employer-led Sector Skills Councils control to filter the existing 18,000 qualifications and select between one and five “preferred” qualifications for each occupation, reducing the total to 200-300. Replace the modular approach to curriculum and assessment with comprehensive, holistic programmes.
- Increase availability of apprenticeships through a subsidy that eventually funds itself kick-started by government subsidies for apprenticeship wages (such as through tax breaks or national insurance contributions). These funds should be channelled through employers, who should shape the training collectively. Simplify funding rules to focus on output-based results and post-apprenticeship employability.
- Use apprenticeship training agencies to manage apprenticeships for small firms, enabling their participation with the minimum of bureaucracy. These agencies would arrange college placements for these apprentices and enable small firms to employ apprentices on a wider basis.
- Ensure transferability back to the academic track – or from the academic to vocational – at every step for young people over the age of 16. In particular, introduce two routes to university to attract academically able students with a bridging year via accelerated A-Levels or a professional degree to give access to university.
- Continue to develop the programme of University Technical Colleges (UTCs), but limit the number of UTCs to 100, so that they maintain a clear focus on meeting demonstrable skills needs. UTCs can become standard-bearers for vocational education.
- Improve student attainment with a stronger focus on English and maths in primary schools and by increasing applied learning to allow students to demonstrate mastery through everyday applications of concepts. All apprentices must have level 2 (GCSE-standard) English and maths to qualify.
- Ensure students are able to make informed choices about future careers based on impartial and relevant information. Introduce a comprehensive programme of careers education in schools and colleges from age 11, backed by mandatory annual training for career advisors.
- Remove incentives for schools to recruit students to inappropriate vocational or AS-level courses by funding further education colleges equally with schools and base funding on students completing courses rather than simply enrolling on them.

Our Vision

Our vision for apprenticeships is that every young person will:

- Have education and training that prepares them for adult life and gives them the skills they need, particularly in literacy and numeracy, to progress to further education and training and the labour market.
- Have information and individual guidance from an impartial careers service that enables them to make choices based on labour market information on opportunities for employment, education and training and likely salary returns.
- Regard a three or four year apprenticeship at Level 3-4 as a standard way to enter the labour market and higher education.

If young people choose the apprenticeship route it should:

- Provide them with training in the workplace as well as a general, professional and technical education at a college or other external training provider.
- Give them a qualification on completion that is recognised and respected and that allows them to progress to further and higher education and training which qualifies them to practice their occupation, open a business and train others.

To achieve this vision we will need to:

- Effect a cultural change so that apprenticeships are regarded as being as good a route for young people as university, if not better, for many jobs and professions.
- Raise the standard of general and vocational education in schools.
- Reform and expand careers information, advice and guidance.
- Clear the jungle of vocational qualifications and establish clear routes into employment, education and training which are understood and valued by the public, employers and young people.
- Demonstrate to employers the advantages of apprenticeships and support them in taking apprentices where necessary.
- Reform the Sector Skills Councils so that they are led by employers and are able to control the content and standard of employers' preferred vocational qualifications.

Current policy and consultations on reforms

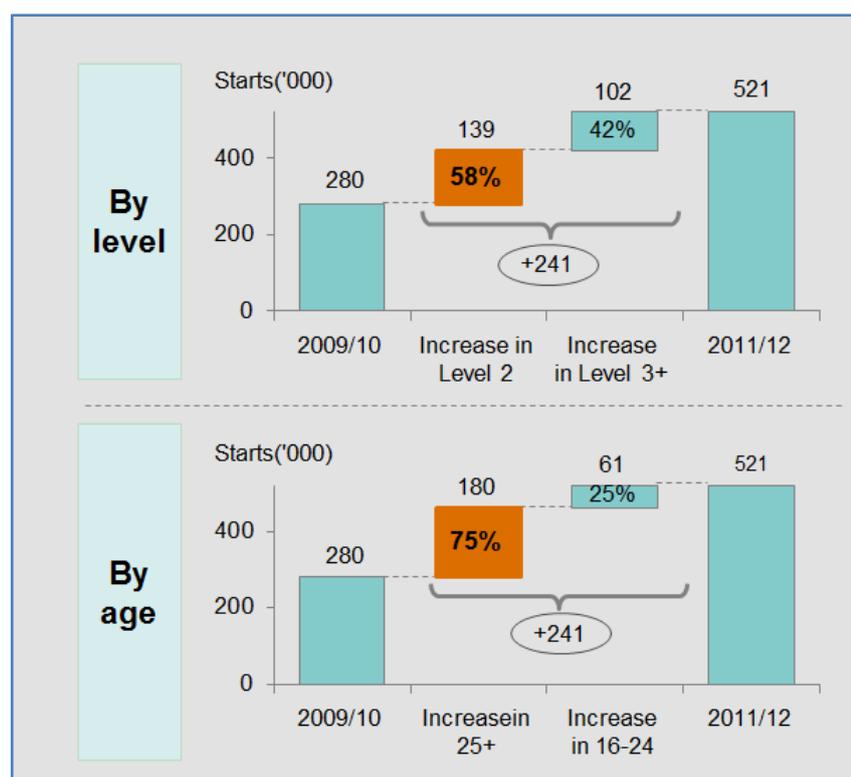
The current state of England’s apprenticeship system dates back to failed efforts in the mid-20th century when the Industrial Training Act of 1964 created Industrial Training Boards with powers to impose a levy on employers to fund such training. By the mid-1980s, following widespread de-industrialisation, apprenticeships were offered by only a handful of manufacturing employers and most of the boards were abolished. The state-subsidised Youth Training Scheme (YTS) had replaced such training with what were often short, low-level programmes of variable quality.

When a Conservative government created the Modern Apprenticeship in the 1990s YTS was their model, which was then developed by successive governments. This partly explains why low-level apprenticeships are so firmly embedded in England.

Too few employers got involved - and this remains the case – though there were exemplary exceptions such as Rolls Royce. So, private providers on contract to the Manpower Services Commission took over the training and Sector Skills Councils were created to ensure quality control. But, with employers turning increasingly to graduate recruitment, apprenticeship schemes struggled. In an effort to boost them, places went to older people already in jobs, while young people seeking entry to work were squeezed out.

The current apprenticeship framework is set out in general terms in the *Apprenticeship, Skills, Children and Learning Act of 2009*. While a rapid rise in reported apprentice numbers followed under Labour and Coalition governments, it was still largely low-level and biased towards older people already in jobs. The Government was forced to act after its claim of a record rise in apprenticeship recruitment was found to include schemes such as that of a large UK supermarket chain; with 52,000 staff training for an average of six months, 85% were aged over 25 and 99% of these would not qualify beyond level 2. Nationally, 58% of new apprenticeships in the past two years are low level and 75% age 25-plus.³ This means that fewer than 200,000 of the 521,000 apprenticeship starts in 2011/12 were at level 3 or above and 61,000 new apprenticeships were created for young people.

Figure 1: The UK created 240,000 new apprenticeships in the last two years, but 58% are Level 2 and 75% are for adults aged 25 and over



In April 2012, the Coalition Government responded by announcing tougher standards for apprenticeships which, John Hayes, the FE and Skills Minister, said, would last 1-4 years. Apprenticeships for 16 to 18-year-olds would last a minimum of 12 months “without exception”. The announcement also triggered consultations on the future shape of apprenticeships. A new ‘enquiry panel’ was established, reporting directly to the Minister, to manage poor quality providers as soon as they are reported.

Table 1: All Age Apprenticeship Participation by Level and Age 2011/12⁴

	2011/12	
	Age	Full Year August to July
Intermediate Level Apprenticeship (Level 2)	Under 19	144,200
	19-24	159,100
	25+	203,000
	Total	506,200
Advanced Level Apprenticeship (Level 3)	Under 19	53,300
	19-24	118,900
	25+	144,800
	Total	317,000
Higher Apprenticeship (Level 4)	Under 19	500
	19-24	2,900
	25+	2,300
	Total	5,700
All Apprenticeships	Under 19	189,600
	19-24	272,100
	25+	344,800
	Total	806,500

As part of the consultations, the Departments for Business, Innovation & Skills (BIS) and Education appointed Doug Richard, entrepreneur, founder of School for Startups and star of the TV series Dragons’ Den to lead an independent review into the future of apprenticeships. His remit was to focus on the changing needs of the economy, ensure high-quality training and qualifications that would meet employment needs and maximise the impact of government investment, which was potentially substantial; according to National Audit Office data, apprenticeships generate £18 for the economy for every £1 spent.⁵

However, research commissioned by BIS suggests that cuts in state subsidies, as proposed in the Government’s consultation document, would jeopardise this. The research says if subsidy is reduced to zero, apprentice numbers will fall by 85%. If it is reduced to 50%, numbers will fall by 73% – from an already low starting point since only 22% of employers invest in apprenticeships.

Already, since August, post-24 apprenticeship subsidies were scrapped and either the employer pays or the apprentice must take an adult loan. There is also concern that over half the lower level (level 2) apprenticeships are in business, retail and health, associated with the lowest returns on investment. The Edge Foundation, in its response to the Government,⁶ warns of big risks including the loss of specialist training in some sectors and geographical areas. Instead, it argues, subsidies should continue but be targeted at areas, such as STEM-related apprenticeships, to achieve best results, boost productivity and overcome market failures.

Meanwhile, BIS announced £1,500 Apprenticeship Grants for small and medium sized businesses that recruit their first apprentice aged 16 to 24, initially to a total of 40,000. The groundswell of interest in apprenticeships among young people is evident in the National Apprenticeship Service (NAS) 2013 report showing an average of 11 people chasing every vacancy (33 per plumbing vacancy and 18 for media and publishing).⁷ In November 2012 the Richard review set out key recommendations to simplify the system, devolve funding and responsibility to employers and streamline the qualification system through a system of competitive tendering.⁸ He recommended:

- A final competency test, with direct employer involvement
- A limit on the number of low-level apprenticeships
- A minimum duration target
- Increasing minimum qualifying standards with compulsory English and maths for those without A-C grade GCSEs
- Purchasing power for employers through tax/NI system
- An employers' contest to create the best qualification design for each occupation

Like the DfE-commissioned Wolf review of 14-19 vocational qualifications – which called for more general education in schools (20% maximum time spent on vocational education to age 16), a radical reduction in the number of vocational qualifications and less emphasis on modular studies – Richard sees an urgent need to improve the reputation of vocational education and training. He also puts trust in the power of the market to encourage greater employer involvement and deliver the goods.⁹ *“Freeing the price of training from public control and having it determined between employers and providers will help prioritise learning that delivers most value.”*

However, while both emphasise the need for more employer engagement, with financial compensation for taking on apprentices at 16, and alignment with industry needs, neither address in detail the skills mismatch or a greater emphasis on STEM subjects.

The government response from BIS in March 2013, in a “plan to redefine apprenticeships”, echoed much of Richard.¹⁰ It stressed the need for employers to set standards for apprenticeships, which should be targeted at a skilled job, involving substantial new learning, and be the foundation of a career and educational advancement. It emphasised the need to spell out what an apprentice should know and be able to do in order to qualify. Under the reforms, all apprentices to qualify would have to reach level 2 English and maths if they lack GCSEs A-C. Also reform of assessment should “move to a final holistic test which has the full confidence of employers”. In an effort to more clearly define what constitutes an apprenticeship, the BIS response said “training and accreditation of existing workers who are already fully competent in their jobs should be delivered separately.”

Options out for consultation on funding are to extend the current system where money goes through training providers, but using payment by results, or direct payment to registered employers, either using a direct claim or going through the PAYE system.

Case study: Apprentices at Webasto, Munich

Isabell Schreck, 22, is an apprentice as industrial administrator in Munich, working for the auto parts company Webasto. The €2.4 billion (£2 billion) German company employs 10,000 people worldwide, including 3,250 in Germany, making and selling heating and refrigeration units for cars. Seven per cent of the company's German employees are apprentices.

Although Webasto has manufacturing employees at one of its German plants (much of the blue collar activity takes place in Eastern Europe or Asia) the majority of its staff and apprentices are in white collar roles. "I could have gone to university, but I decided to become an apprentice instead," Isabell says. While on her three year programme, Isabell has spent blocks of time at a local vocational school. She has worked for up to six months in each of a half-dozen different areas of the company.

The job of industrial administrator involves sales, customer management and use of information technology. Isabell's apprenticeship has seen her work as an IT assistant, a sales administrator, in the logistics team, in the assistant managing director's office, in marketing, purchasing and corporate communications.

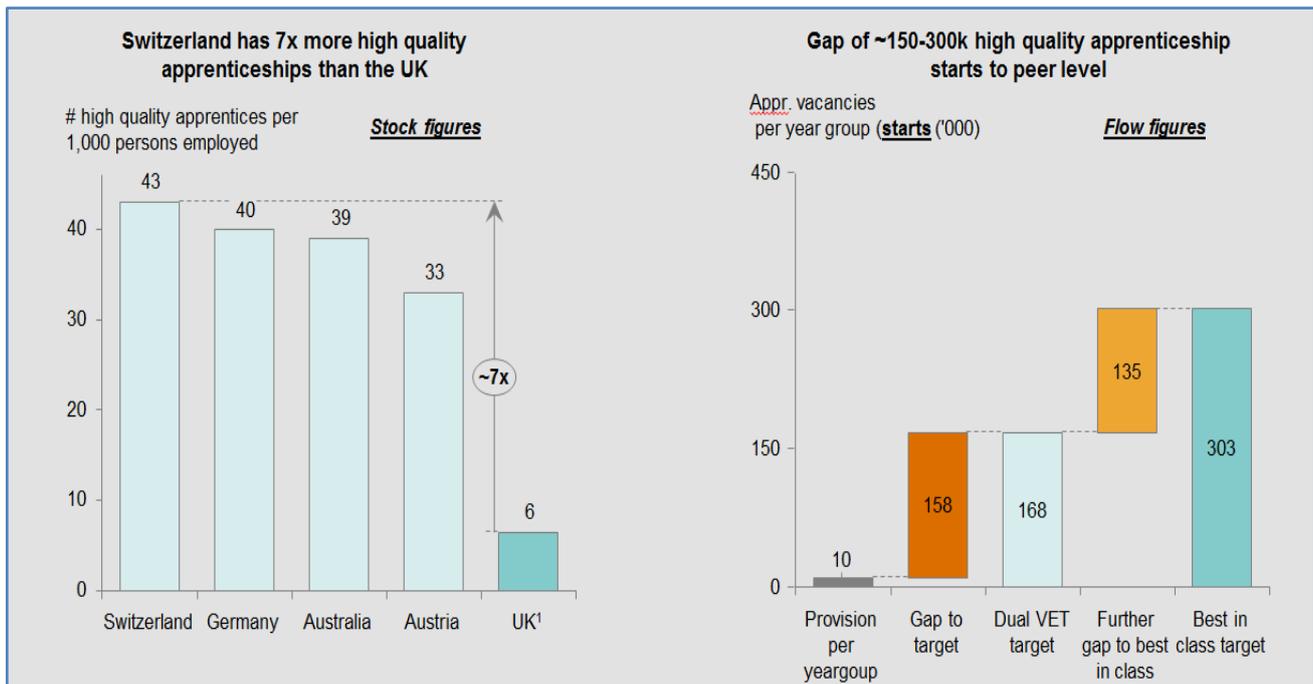
In each role, she has been expected to work for one to six months. During her apprenticeship, she has also spent days or weeks at a time learning theoretical aspects of her role at the vocational college. At the end of her three years, she must sit an externally marked exam in accounting, business studies and social studies, alongside an intermediate exam she passed after 15 months' training.

The Chamber of Commerce ensures quality control in her apprenticeship, and like a growing number of apprentices, Isabell has the option of going on to study at university for a degree supported by the company while still working at Webasto.

Is there a real demand for apprenticeships?

Apprenticeships are far less common in the UK than in other advanced economies. For example, Switzerland has 43 apprentices at level 3 for every 1,000 staff employed compared with six in the UK; Germany has 40, Australia 39 and Austria 33.¹¹ In the UK, only 6% of around two million 16 to 18-year-olds are in “dual” apprenticeship programmes – combining workplace training and off-site study – with two-thirds of these doing low level 2. Some 27% are in other training or jobs without training, while 10% are NEET (not in employment, education or training).¹² To match the best of these countries and recruit the same proportion of high quality apprentices, the UK would have to increase the number of starts per year by between 150,000 and 300,000.¹³

Figure 2: The UK needs up to 300,000 high achieving apprenticeship starts to offer similar provision as Switzerland



Why is there so little demand, both from employers and, in many cases, high achieving potential apprentices? While there are exemplary exceptions, most employers simply do not wish to offer apprenticeships. In the UK just 20% of employers hire at least one apprentice compared with 51% in Germany, according to a BIS survey of employers with more than ten employees.¹⁴ The reasons employers give for not employing apprentices range from “don’t need them” and “no vacancies” to “too expensive” and “prefer to recruit fully trained”. Many also believe that it is costly and disruptive to the business, that their own internal training covers everything they need or that apprenticeship frameworks are not available for their industry – even though they may be. Young people and their parents see the academic route as the gold standard and are often unwilling to consider alternatives (apart from, for example, infrastructure industries, such as gas and electricity national grids and rail network engineering, which are heavily oversubscribed), believing that apprenticeships went out with heavy industry or associating them with low level training schemes that lacked progression. In addition, teachers and careers advisers are often poorly informed about apprenticeships.

To increase demand for apprenticeships, we need to improve their reputation by raising their quality and marketing them effectively.

Apprenticeships could be supported by requiring a licence to practise for selected occupations, issued by Sector Skills Councils on completion of an apprenticeship and further training, similar to systems in Germany, Austria and Switzerland, which would ensure a well-rounded education covering theoretical and practical training in the occupation, plus business and legal training. UK employers in the CBI argue that there is no evidence of such licences leading an increase in productive skills, while the bureaucracy would be costly and counterproductive, particularly for small companies. However, we believe that compulsory membership of an

organisation of skilled craftspeople would confer public confidence and status and improve employment prospects because firms may prefer to hire master craftsmen rather than university graduates as technical (mid-level) managers, because their education is more practical.

There would need to be a major reorganisation of vocational qualifications so that they were drastically reduced in number and more clearly understood. The quality of technical and vocational education in schools could be improved by offering only those courses that provided a coherent two or three year programme, valued by employers, universities and colleges, with clear progression routes into employment or further learning. Professor Wolf believes this can be achieved while limiting vocational studies for young people up to the age of 18 to 20% of the timetable. University Technical Colleges, which provide education with a strong vocational emphasis for 14-18 year-olds, could play a leading role as elite vocational institutions offering close links with employers and combining vocational qualifications with A-Levels and work experience.

Employers would need to be persuaded that there is a good business case for apprenticeships. Warwick University research shows that apprenticeships can be profitable, recouping training investment in as little as one to two years after completion in areas such as social care and two to three in engineering. Further advantages are that apprenticeships can be a hiring tool to enable them to train apprentices specific to company's needs, select the most able apprentices at the end of their programmes, minimise the risk of hiring incapable people and avoid high staff turnover.

There would also need to be a sustained marketing campaign to ensure these reforms were widely understood. Examples could include giving successful vocational students and apprentices the same kind of local and national media prominence enjoyed by GCSE and A-Level students, and encouraging politicians to give equal attention and importance to both vocational and academic streams.

Case study: Training technicians at Aprentas, Basel

In Basel, a tripartite system helps ensure trainees have the right skills to be technicians in the firms that employ one in six people in the city. As well as learning on the job and spending time at a local professional school, trainees spend a third of their time at a specialist training facility.

The Aprentas laboratories, funded largely by industry but working with a national and Basel curriculum, are equipped with the latest technology. The firms pay the training facility per trainee, in addition to the support they get in their companies and a trainee wage, allowing such investment in well-equipped laboratories.

Aprentas was initially established by companies like Novartis, Syngenta and BASF to fill a gap in their own training programmes, but now has dozens of firms of all sizes who pay a low membership fee alongside the cost of training each young person. The result of this commitment is exceptionally well-trained technicians in biology and chemistry that help keep their companies – and the city of Basel – at the cutting edge of their industry.

Case study: Switzerland

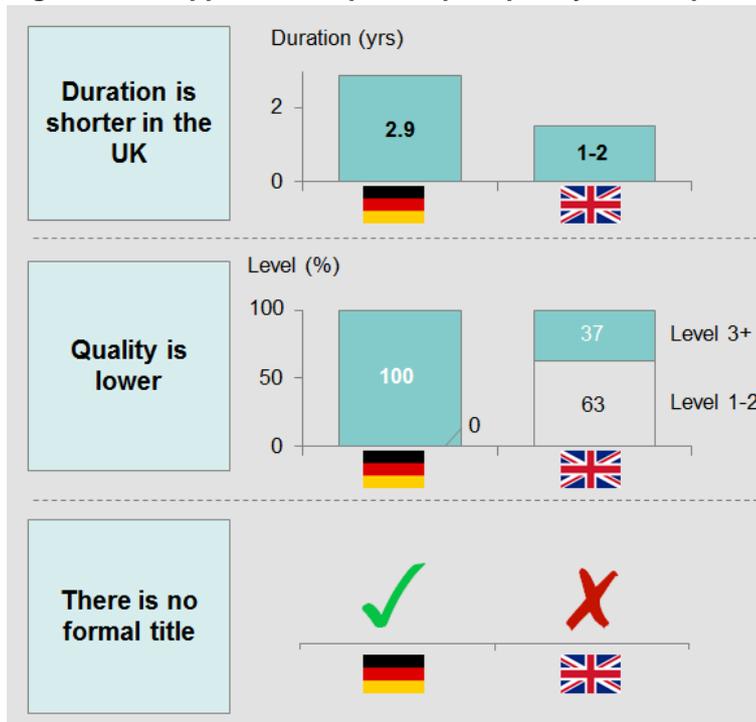
In Switzerland, considered to have one of the best of “World Class” apprenticeship systems and where two-thirds of young people do work-related programmes, schemes generate net benefits for employers averaging 8,800 Swiss Francs (around £6,000) per apprentice during a three-year apprenticeship. In Switzerland, however, the system is well established and clearly understood and respected by both public and employers.

Other reasons for its success are:

- better prior school attainment, particularly in maths, drives down training costs
- apprenticeships are seen as the predominant route into employment and an established alternative route to higher education, making them more attractive – 70% follow apprenticeships in industries ranging from agriculture to banking
- higher public funding per head and an effective industry sector levy
- efficient balance of classroom and work-based learning – more vocational schooling at the start of the apprenticeship helps limit the amount of lost productivity¹

The jungle of low-level qualifications and the education system

Figure 3: UK apprenticeships compare poorly to best practice examples such as Germany



The best-practice systems internationally that we have looked at provide clarity through simple paths and give real status to vocational education and training. In the most successful countries, there is a narrow range of high-quality qualifications (few in number) and three-year apprenticeships are considered the norm. Reputation is sustained through a long-standing history and marketing campaigns that highlight the advantages of vocational training. The quality comes regardless of the type of education system in place. Some countries stream relatively young into distinct schools (Germany, Switzerland); others keep people in the same school but have distinct paths (Australia). This suggests, and is borne out by evidence, that it is the sustained and widespread support – particularly strong employer backing – for the ‘dual’ apprenticeship that makes the difference.

UK apprenticeships are of a low standard compared with best practice elsewhere. For example, Germany has a minimum duration of three years for most apprenticeships, apart from those for lower-skill jobs (about 10%, which can be completed in two years) and, while there is no differentiation of ‘levels’ it is reckoned that German apprenticeships are comparable to the UK’s National Qualifications Framework level 3/4. There is also a clear title “Geselle” on completing an apprenticeship, which is recognised as meaningful. To open a business and take on apprentices requires a “licence to practise” which in turn requires further education towards a “Meister” title. “The Meister title also automatically enables you to study at university a related subject.” (it is your automatic “bridging” to the academic track). This compares with the UK’s average duration of 1 to 2 years with 63% at level 1-2, no formal title and no specific licence or training requirements of participating businesses.¹⁵

Furthermore, the recent expansion of apprenticeship places has emphasised a trend towards low-level attainment, with little emphasis on recruiting the young. The UK created 240,000 new apprenticeships in the past two years but 58% are level 2 and 75% (180,000) are age 25-plus. Until recently, many so-called ‘apprenticeships’ lasted a matter of months, and amounted to little more than low paid, low level work experience.

Some of this growth of low-level apprenticeships was driven by inadequately targeted efforts of individual companies. Although the government is in the process of introducing a minimum of one year for funded apprenticeships, this situation raises questions for the Government that urgently need addressing.

So, is the apprenticeship currently designed to achieve its main aim – an educational policy supporting primarily young people into high-quality work-based training leading to long-term meaningful employment? Or is it aimed at helping the general labour market? Also, is the apprenticeship framework targeting the right standards?

Figure 5: The number of qualifications and awarding bodies is increasing constantly



Proliferation of qualifications has a negative impact on standards. Between 2007 and 2012, Ofqual says that the number of qualifications increased from 6,849 to 18,529 and the number of awarding bodies from 79 to 122.¹⁶ In many cases the laudable intention was to allow adults to access or update workplace knowledge and competence in manageable chunks without undertaking lengthy, complete courses but, overall, it has had a detrimental effect on the quality and public perception of qualifications. Low-level qualifications have proliferated without leading to progression in education or the workplace (45% don't achieve level 3 by 19). The number of qualifications promotes confusion which decreases perceived value. 64% of the general public and 30% of teachers report a poor understanding of vocational education and training.

In Germany, strong employer involvement in the *Industrie- und Handelskammer* (IHK), which have a role similar to our Chambers of Commerce and Sector Skills Councils combined, has limited vocational education and training to a few high-quality qualifications. Regional ministries of education are responsible for setting broad parameters and the legal framework on things such as the number of hours of teaching. The IHK are responsible for the curriculum and minimum requirements by industry or trade; they award qualifications and are largely self-funded through an employer levy. Therefore, the vocational schools all offer the same set of qualifications and there is only one nationally recognised qualification for each of the 350 training occupations.

The government's plan is for DfE and BIS to filter out up to 90% of low quality qualifications from league tables. To qualify, classroom-based qualifications would have to include grading, external assessment, have a proven track record and offer progression to further study. Apprenticeship-based qualifications would need employer endorsement and assessment, and ensure progression to employment or further study; but they would not require external assessment.

However, these minimum requirements are unlikely to be an effective filtering tool for apprenticeships because without a final assessment it is very difficult to set a concrete minimum standard. We also doubt that the DfE has the capabilities or resources to conduct such a review. This lack of a clear final assessment was also criticised in the Richard review.

Improving the quality of vocational education for 14-16 year olds – scale or specialism?

Schools have a financial incentive to keep as many 14-19 students on roll as possible so they try to offer vocational as well as the traditional academic courses. Many young people who are more motivated by a practical rather than an academic approach enjoy taking such courses and schools have found it advantageous to offer them because they also contribute to league table success. They also cross-subsidise A level courses, as schools are funded on the assumption that all students study towards costly A levels. However, as the Wolf report showed, few of these qualifications have any currency with employers or allow progression to further learning, so the young people have neither improved their opportunities for employment nor qualified to take a course at the next level.

Most secondary schools are too small to have the facilities or the specialist staff to teach the whole range of vocational courses they offer to a good standard. Young people would have a better experience if they spent no more than one third of their time on such courses, were offered only those that enable progression or lead to employment, and if these courses were taught by expert staff in high quality facilities.

This level of staffing and facilities can be obtained either in large institutions able to exercise economies of scale, or in smaller but specialist institutions. Both have their disadvantages: merging secondary schools would be disruptive and unpopular, while the introduction of University Technical Colleges (UTCs), Studio schools and Career Colleges allowing further education colleges to recruit 14 year-olds raise concerns about streaming, social mobility and equity.

Yet, both methods are used in other countries. Australian secondary schools are usually much larger than ours and students follow a different route within the same school. In Switzerland vocational and academic schools are completely separate, but such is the reputation of vocational education, with its clear route into higher education that this is not regarded as a lower quality offer.

Assuming the current structure of schools and FE colleges is to be retained, however, we would recommend the following division of role and functions.

Students should be taught vocational qualifications in facilities that enable an effective delivery to a high standard; therefore, 'full' vocational courses should be taught only in FE colleges, UTCs or Studio Schools rather than mainstream schools. The DfE should refocus schools on teaching an academic curriculum and greatly reduce the number and type of vocational qualifications that can be taught in schools to reflect their limited access to high quality facilities and teaching expertise. Students should spend no more than one third of curriculum time on vocational education and every student in a school sixth form should study towards at least 2 A Levels.

UTCs and Studio Schools could set a standard as elite institutions for school-based vocational education. In particular, while there is room for more growth in the number of UTCs – the Government has plans for 20 a year – their expansion should be more closely matched to national skills needs. Rather than focusing on rapidly increasing the quantity of UTCs, there should be a strong focus on quality. We believe that 100 should be the maximum number of UTCs to ensure high standards and status, as well as a good geographic spread.

Student attainment should be improved by increasing classroom time dedicated to English and Maths in primary schools. There should also be more applied learning and attainment level testing amended to allow students to demonstrate mastery through everyday applications of concepts.

Perverse incentives arising from school and college funding differences and league tables should be removed by extending the league table review of vocational education and training qualifications to age 19 and funding schools and colleges by the same rules based on qualifications studied and completed. This would prevent schools recruiting students for inappropriate AS level and A level courses, for example, and ensure that only

valuable vocational qualifications are rewarded. Recent changes have been announced to tackle this problem but may need to be taken further to address issues such as repayment for non-completion of the course.

Skill shortages should be addressed by offering booster Science, Technology, Engineering and Maths (STEM) courses in all FE colleges to vocational students who have not achieved the minimum level to pursue STEM qualifications and by boosting funding for qualifications in other fields with skills shortages.

Case study: Australia

The Australian state of Victoria has a comprehensive system in which each student's aim is to finish with a high school diploma, of which there are two types: the Victorian Certificate of Education (VCE), which serves as a university entry qualification, and Victorian Certificate of Applied Learning (VCAL), or vocational qualification. Students enrolled in the general route have the option to take vocational courses that will count as credit towards the VCE. At age 16, students can decide to pursue the 'hands on' VCAL path with an option to transfer credits and switch to the general route after one year. Vocational education and training is not formally entered until high school graduation at 18.

Also after secondary school clear branding facilitates choices and gives credibility to both tracks. Graduates from secondary school wishing to pursue a vocational training will study towards a 'Diploma' whereas those wishing to pursue an academic education will study towards a 'Degree'. Throughout both secondary school and further education, vocational or academic, there is a highly flexible system of credits that enables students to switch paths without having to start over again.

Careers information, advice and guidance

Because of the complexity of vocational education in England, students need expert and impartial advice, but very little is available to them. Surveys by Chrysalis for City and Guilds in 2011 and for Careers England in 2012 showed that 28% of vocational students received no advice at all and that two thirds are dependent on teachers and school careers advisers, in whom they have little confidence on this subject.¹⁷

This is not surprising when 80% of teachers claim they do not have enough knowledge to give advice and about half admit they have given poor advice. Moreover, 57% said that they feel pressured into advising students to stay at school post-16 in order to gain funding, even though more appropriate options may be available elsewhere, such as in a further education college or an apprenticeship scheme.

Under the Education Act 2011, responsibility for careers advice was transferred from local authorities (which had used the Connexions careers service provider) to schools. Schools are now legally required to provide external and independent careers advice by someone not on their payroll, but at the same time the education budget is being cut by £1 billion by 2014. A survey by YouGov in 2013 for Pearson found that 83.5% of schools had cut back on their careers service, some by as much as 75%, leaving them feeling ill-prepared to deliver careers advice.¹⁸ Only 14% thought they had enough money to deliver the service, and where schools had hired careers advice, only a quarter of these advisers held a Level 6 qualification, promoted by Career England as a minimum requirement.¹⁹

Outside school, students must therefore rely on parents, friends, TV and even celebrities for advice. Only one in ten had received advice from business sources, despite nearly a third saying that this would be their first choice and, of those who had received such advice, 90% found it “most useful”.²⁰

What can we learn from other countries? In Australia, careers advice is seen as a crucial part of education provision. It aims to make students responsible lifelong learners and decision makers through gaining competency in personal management, understanding about future learning and work, and career building. This is done through talks from school careers advisers, written materials, group discussion, individual talks with career advisers, online search for material and talks from representatives of employers and universities. The role of the careers adviser is to co-ordinate activities involving outside speakers, support activities such as group discussions, provide individual advice and help design career development programmes. The service reaches all students and has a high impact with students rating individual talks with the careers advisers as the most useful activity.

We need a comprehensive advice service that is efficiently funded and governed and has three main elements:

- Individual time: at least one session with each student in Years 10 and 12 that is student centred and not only information-based. Students can inform advisers about career preferences beforehand and the adviser must show students trusted data, including employability statistics for relevant vocations and qualifications preferred by employers. Some career advice should start from the beginning of secondary school.
- Presentations and talks by the careers adviser, including trusted data and making a case for apprenticeships, and by employers, which will necessitate forming relationships with local businesses and building on existing initiatives such as “Inspiring the Future”.
- Group events such as these should be provided for students from the age of 14 onwards.
- Information, both written and online: digital information should be actively managed; information should go not only to students but also to parents; and teachers should include trusted data such as employability statistics and a list of subjects relevant to skills shortages.
- Advisers should make clear the existence of the ‘preferred list’ of vocational qualifications and its significance for future employment and progression.

All this needs to be supported by:

- Increased funding to schools, sufficient to meet a minimum student/adviser ratio.

- Free relevant mandatory training to attain certification and keep up to date, focusing on both general and vocational streams with input from SSCs
- Strong governance: i.e. mandatory qualified professional qualification for careers advisers, schools to be accountable for providing minimum standard of careers advice (monitored by local authority) and a minimum of one adviser per average-sized school.

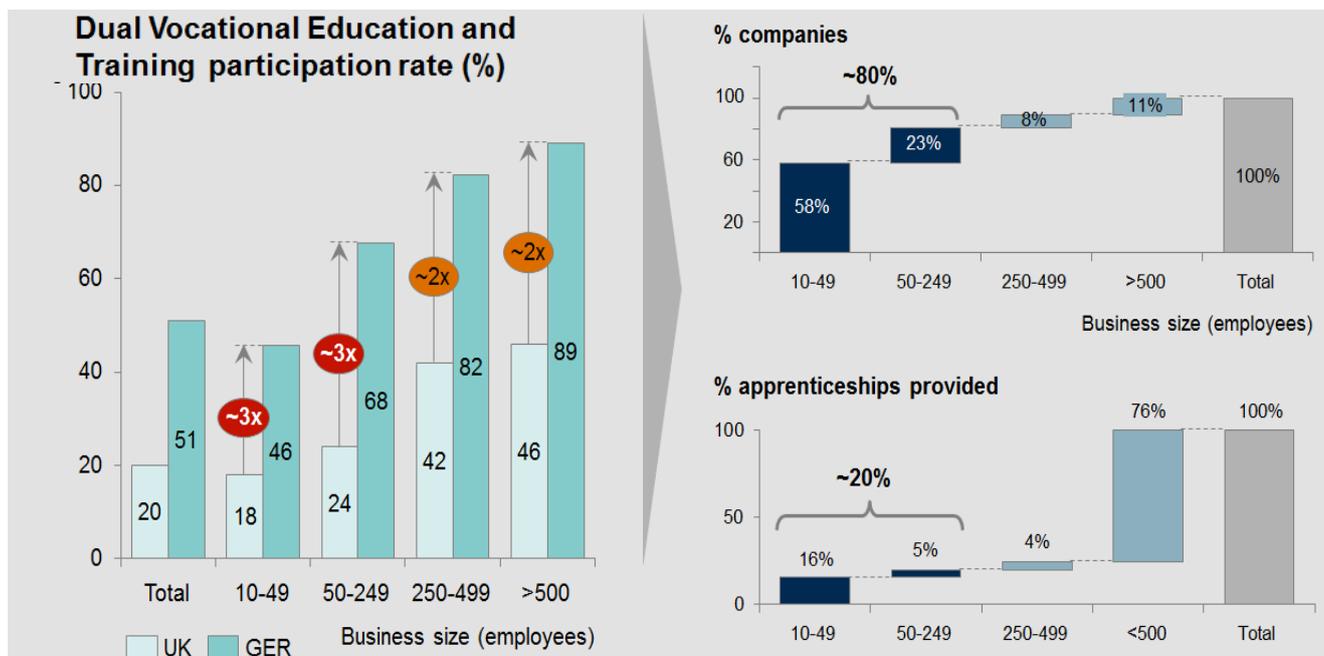
There are two possible models that could be adopted, each with their own advantages and disadvantages. In the first, the school is responsible for careers advice and appointing their own adviser. The advantage is that this is easily monitored by the head teacher and students can get to know a long-term adviser, but if league tables and funding regimes continue to encourage staying-on rates, then a conflict of interest could arise if the student's best interests could be served elsewhere. In the alternative model, the service is supplied by the local authority and advisers are dedicated to one or two schools but managed centrally. This model avoids the danger of conflict of interest, but quality is more difficult to monitor, advisers could change more frequently between schools and it would be more expensive to run, especially if the service is out-sourced.

Whichever model is adopted, we would need at least one dedicated careers adviser per secondary school with larger or smaller than average schools sharing advisers on a per capita basis. This would total 3,300 advisers and would cost an estimated £149 million. Meeting the best in class ratio (Australia) would require 1.7 advisers per school, leading to a total of 5,600.²¹

Supporting business

We need increased involvement by business, especially small and medium-sized enterprises (SMEs), to meet the need for more apprenticeships. In the UK only 20% of firms with ten or more employees hire any apprentices compared to 51% in Germany.²² A nation-wide apprenticeship pooling system would enable small or specialist businesses which could not offer the whole range of experience necessary for a full apprenticeship to share apprentices, thus creating more apprenticeship places and allowing more businesses to take part.

Figure 6: Business participation is low compared to Germany particularly for smaller businesses



Apprenticeship Training Agencies already have a natural role as the middleman between apprentices and employers. The Confederation of ATAs (COATA) should work alongside Regional Pooling Associations (RTAs) while the NAS, working with COATA, should ensure consistent standards. The NAS should also introduce regional pooling associations to supplement geographical areas and industries not already covered by the agencies.

Incentives for employers, training agencies and pooling associations could include a £1,500 grant split between the small employer and pooling association and based on post apprenticeship employment rates. There should be a tailored information campaign towards employers which would target businesses less likely to participate; have SSC publications to market the benefits of dual vocational educational and training, tailored by industry and size of business and include lessons learned from international best practice. There should also be positive publicity for participating employers, such as introducing an employer badge certifying participation in apprenticeship programmes, publishing an annual list of top employers for employing apprentices alongside examples of successful apprentices and introducing a DfE/BIS award for the best dual employer in various training and apprenticeship categories.

Although some attempt has been made to market apprenticeships to SMEs, there are no formal initiatives in place across the country. What activity there is has limited focus and lacks a formal structure. Apprentice Training Associations (ATAs) connect apprentices with employers and there are also regional initiatives; for example, *Building Skills for the Future*, a shared apprenticeship scheme for the construction industry initiative in Merseyside and Cheshire. Employer-led initiatives include the North West Universities Consortium where apprentices are pooled between various institutions. These are good examples which could be extended.

Case study: Australian support for SMEs

In Australia, where the problem for SMEs was particularly acute and companies were too small to give a full range of education and training, the Government set up a system to meet their needs. It created a National Standards Group for Training (NSGT) to ensure consistency and quality in apprenticeship training. Group training Organisations (GTOs), specialising in particular industries or entire regions, register with the NSGT and apply for funding. They are the *de facto* employer responsible for wages, allowances, sick days, holidays etc. All potential and existing apprentices work under contract to the GTOs and may work with “host” SMEs who would otherwise lack the funds, time and scope to recruit an apprentice full time.

Case study: Singapore

When Singapore decided to raise the status of vocational education it rebuilt and rebranded its ‘vocational institutes’ as ‘educational colleges’ with the title Institute of Technical Education (ITE) and taking 25% 16 year-olds for two years. The ITE system has run four major campaigns over fifteen years to improve public perception entitled “Make Things Happen” (1998-2000), “ITE – A Force Behind the Knowledge-Based Economy” (2001-2003), “Thinking Hands Create Success” (2004-2006) and “We Make You Shine” (2007-2009). ITE’s Brand Equity Index improved from 34% in 1997 to 60% in 2006 and ITE students are now better regarded and seen as ‘creative’ and ‘innovative’, an advantage in a country whose education system is sometimes criticised for excessive rote learning.

The role of sector skills councils

The 21 Sector Skills Councils are the employer-led bodies currently charged with quality control in vocational education and training in England, Scotland and Wales. The responsibility for solving many of the dysfunctions in the vocational education and training system in England should lie with a re-invigorated and more powerful Sector Skills Council (SSC), firmly led by employers. Although SSCs currently serve a similar role in England, Scotland and Wales to the IHK in Germany (described above in Chapter 3) they have a limited impact because their remit is too complicated and their funding is too low.

At present, SSCs' key roles are to:

- Reduce skills gaps and shortages
- Improve business productivity
- Improve employer investment in skills
- Improve training opportunities, including apprenticeships
- Provide labour-market intelligence to business

However, they have a low impact because

- Their mandate is too ambitious for the size of the organisation
- They get only £25m annually with no employer-based funding
- Their impact is restricted because of their dependence on BIS and the DfE
- They do not develop organically like other professional bodies because their configuration is determined centrally rather than evolving from the labour market
- They are subject to frequent change of legislation in areas such as name, role, funding levels, which decreases business confidence and involvement.

Sector Skills Councils are under-funded and powerless to implement change compared with the German IHK, which has ten times the level of funding – £250-300m compared with £25m.²³ SSCs should be given greater funds, either directly from government or by introducing an industry levy, in order to focus on two key tasks: reducing the number of vocational qualifications in the first year and then concentrating on improving their quality – narrowing the range to between one and five “preferred” options per occupation. To manage this, we estimate that they need three times the current level of funding, with £100m in first year and £40m to £50m subsequently.

With quality of qualifications as top priority, the SSCs' mandate should focus on skill development, which means stripping their remit of everything not linked to this. They should publish a list of preferred qualifications annually – distributing them to businesses, schools, colleges, students and parents.

SSCs failed to develop organically because they have been too constrained; hence, being seen as unsuccessful, they have also suffered successive funding cuts. However, the BCG analysis suggests that they could be very successful if strengthened under the current SSC Alliance, the Federation for Industry Sector Skills and Standards (representing all 21 SSCs) whose job it would be to ensure business needs are met by the SSCs in a way that accurately reflects the labour market. The existing Alliance is appropriate for this expansion and it, not government, should be responsible for creating, closing or merging SSC sub-functions to reflect the labour market. Employers will be in contact with their own SSC and Alliance through regional and trades associations.

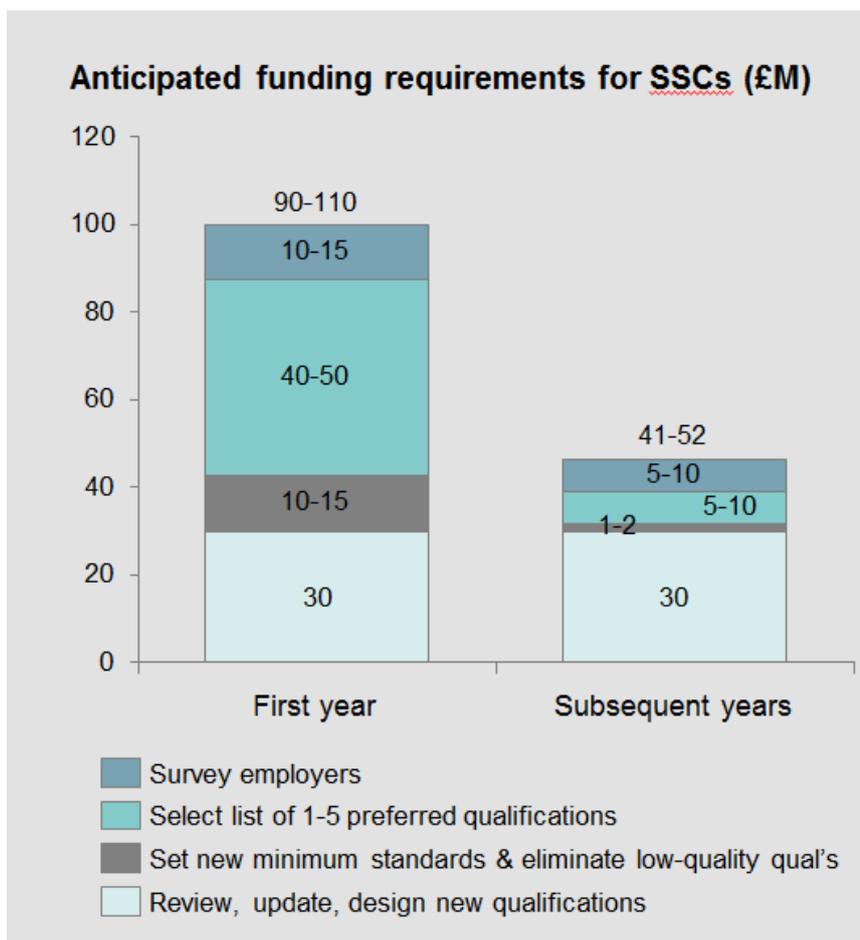
There would be a need to subdivide SSCs by function, or broad category of occupation (financial services, media, construction), maintaining the SSC umbrella organisation but separating each function within the SSC to ensure appropriate employer representation. Each function would be responsible for vocational education and training development and accreditation in related occupations.

We recognise that this may be contentious because SSCs could be seen as a “tried and failed” approach and there would be strong resistance and lobbying from awarding bodies. However, we believe that such

resistance could be alleviated with more employer involvement in SSC appointments and performance review. Although employers can influence content through the SSCs, their choice is currently limited by complexity of the qualifications jungle – around 150 awarding bodies control 18,000 qualifications – and by government regulation and funding rules.

Moreover, as the Wolf Review indicates, in addition to the proliferation of vocational qualifications, league tables and funding incentives have pushed students towards as many easy qualifications as possible, creating a “race to the bottom” for around 50% of students. Young people are baffled by the choice available to them and there is limited guidance available. Meanwhile, the number of qualifications and awarding bodies continues to grow.

Fig 7: Funding for Sector Skills Councils should increase to enable their role in quality control



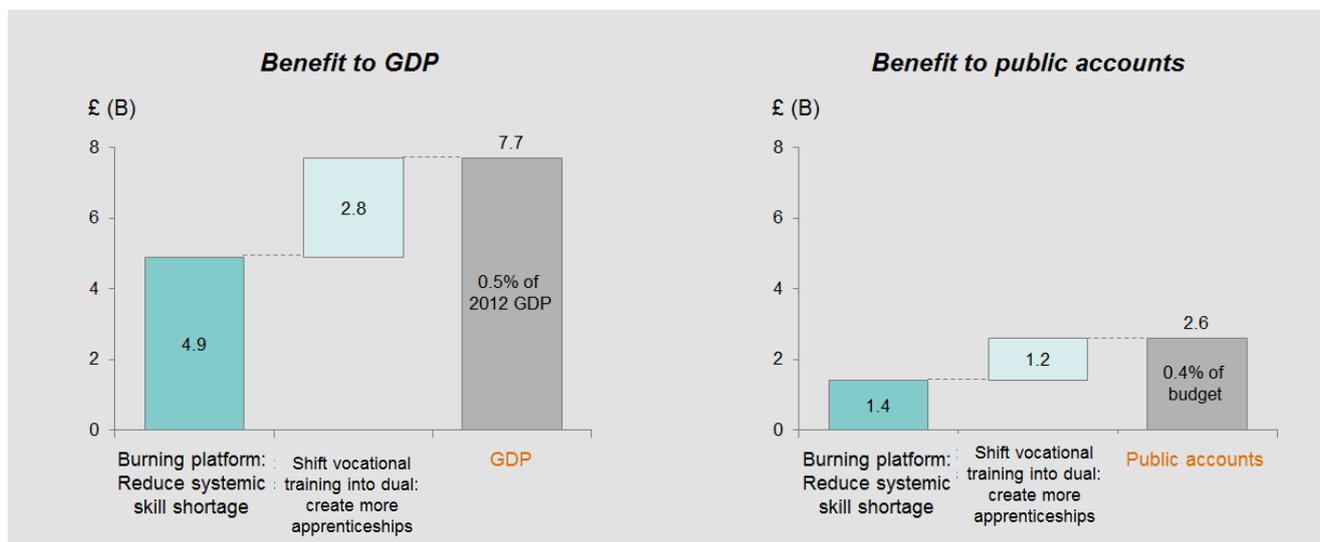
SSCs face practical difficulties in representing the whole UK labour market. Also, A-levels are still seen as the gold standard so the SSC’s ‘preferred course’ list will need strong marketing aimed at colleges, parents and students. Given more control over the qualifications, SSCs would be better placed to encourage employer involvement and, since they already know better than the civil servants which courses lead to employability in a specific trade or industry, they should be able to exclude general courses of study that do not prepare young people for the workplace. The aim would be to cut the present 18,000 qualifications to between 300 and 400. A 0.05% levy on the profits of the 500 largest employers would raise about £100m. This would increase employer engagement, ensure more organic representation of businesses and decrease the financial burden on the government. Although a levy would be likely to face significant opposition from policy makers and businesses, it would give employers a stronger stake in the system than they currently have.

The process of selecting preferred qualifications would be very expensive at first but costs would fall. BCG estimates show, initially, it would cost £30m to review, update and design new qualifications; £10-15m to set new minimum standards and eliminate low-quality qualifications; £40-50m for each SSC function to select its list of 1-5 preferred qualifications and £10-15m to survey employers for each SSC function, pool their views on the selected list and adjust where needed – total £100m. Subsequently these figures would be £30m, £1-2m, £5-10m and £5-10m. Total £40-50m.

Full Recommendations

A radical expansion of real apprenticeships would bring substantial benefits to the UK economy. This could improve our annual GDP by nearly £8 billion and reduce the national deficit by £2.6 billion. Considerable social benefits would also accrue, with apprenticeships providing young people with a clear flexible route of entry into further and higher education and the labour market.

Figure 8: Overhauling the apprenticeship system could address the systemic skills shortage and would benefit GDP by £7.7B and public accounts by £2.6B



Around 125,000 vacancies in the UK are hard to fill because of skills shortages. Were they to be filled, increased economic activity estimated at around £40,000 per vacancy would benefit the UK economy by £4.9bn²⁴. Moreover, creating more “dual” apprenticeships, mixing on-the-job training with off-site learning, adds a further £2.8bn to GDP since students are more productive while training in the workplace. The public purse would also gain £1.4bn²⁵ from reduced unemployment and other benefit payments and estimated annual savings of £1.2bn from a cut in college education costs averaging £2,500 per apprentice.²⁶ Hard-to-fill vacancies in the UK remain stubbornly around one in five of overall vacancy rates, regardless of the state of the economy. With average vacancy rates of 564,000 every year from 2007 to 2011, the economic and social cost is therefore very high.

To increase the number of high quality apprenticeships, a “kick-starting” wage subsidy from the Government would be needed. Examples of such schemes include Austria which pays 50-66% of wage costs in the first year.²⁷ Such a subsidy would be paid through the tax/NI system, similar to the system proposed in the Richard review, with repayment where apprentices fail to complete.

Benefits from increased apprenticeships outweigh the costs, with productivity gains playing a significant part. Over several years, increased productivity gains would eliminate the need for subsidies as apprenticeships would become self-financing. (For details see appendix A).

Apprenticeships

1. Shift towards many more high quality apprenticeships based on new minimum standards centred on a 3 year apprenticeship programme that leads to a Level 3 qualification.
2. Drastically reduce the number of apprenticeships below level 3 to no more than 10% at 2 year Level 2 and increase the number of high quality apprenticeships at Level 3+.
3. Replace the modular approach to the curriculum and assessment with comprehensive, holistic programmes.
4. Introduce a 'Certified Professional' title for completed apprenticeships and a vocational title for vocational qualifications.
5. Increase the proportion of dual tracks combining workplace training with off-site study.
6. Introduce two routes to university to attract good students with a bridging year via accelerated A Levels or a professional degree to give access to higher education.
7. Revise funding governance to support creation of high quality apprenticeships by subsidising apprentices' wages (e.g. sliding subsidies starting at 60% for 3 x 3 year cohorts), apprenticeship pooling and information campaigns for employers and students on the costs and benefits of apprenticeships. Further details can be found in Appendix A)

Classroom based vocational education

1. Remove Level 1 qualifications and encourage students to commit to comprehensive 2 or 3 year programmes leading to a Level 2 or 3 qualifications, with 3-year Level 3 as the new norm and no more than 10% at 2 year Level 2 programmes.
2. Introduce a title for completed classroom based vocational programmes which recognises achievement but is distinct from the 'Certificate' title for a completed dual route apprenticeship.
3. Students should be taught vocational qualifications in facilities that enable delivery to a high standard, therefore:
 - Teach 'full' vocational courses in further education colleges rather than schools
 - Refocus schools on teaching an academic curriculum
 - Greatly reduce the number and type of vocational qualifications that can be taught in schools to reflect their limited access to good facilities and teaching expertise.
 - School students should spend no more than one third of curriculum time on vocational education and every sixth former should study towards at least 2 A Levels
 - University Technical Colleges (UTCs) and Studio Schools could set a standard as elite institutions for school-based vocational education, with UTC growth focused on meeting demand. We believe that there should be a maximum of 100 UTCs to ensure their quality and high status.
4. Improve student attainment by:
 - Improving English and maths in primary schools
 - Increasing applied learning and amending target attainment level testing to allow students to demonstrate mastery through everyday applications of concepts.

5. Align funding for schools and FE colleges to ensure students attend the most appropriate institution by
 - Equalising funding of schools and FE colleges
 - Basing funding on qualification taken and completion (though not passing) rather than enrolment.

Sector Skills Councils

1. To ensure that Sector Skills Councils meet business needs and reflect the labour market, maintain the current SSC Alliance structure but reform its mandate to include the ability to create new, close down, or merge SSCs sub-functions.
2. Sub-divide SSCs by function. Maintain the SSC Alliance as an 'umbrella' organisation but set up separate 'functions', each covering a group of related occupations, and ensure appropriate employer representation. Each 'function' will be responsible for VET development and accreditation in its group of occupations.
3. Focus mandate of SSCs on skill development only with quality of qualifications as top priority. Require each SSC function to drastically reduce the number of qualifications available, set a strict minimum standard and select 1-5 qualifications per occupation as the 'preferred' course of study.
4. Increase SSC funding to enable them to carry out qualification reform and development, ideally by implementing an employer levy to increase employer engagement.

Careers education

1. Students must be able to make informed choices about their future career based on impartial and relevant information. Therefore, we should build a comprehensive programme of careers education in schools comprising of:
 - Individual time with each student in key years (10/12) i.e. prior to relevant A-level or university / job choices with some advice from the start of secondary education
 - Presentations and talks from career advisors and businesses
 - Printed and digital information to students and parents
 - Improved funding to ensure sufficient quality and sufficient advisor / student ratio
 - Mandatory annual training for career advisors
 - Strong governance accountability and quality control by requiring schools or local authorities to ensure minimum quality standards.

Match supply and demand

1. Improve the reputation of apprenticeships through
 - Implementing a "licence to practise" for selected trades
 - Creating a title for a completed apprenticeship
 - Creating vocational titles for completion of vocational qualifications
 - Marketing campaigns to make the case for apprentices and celebrate achievements in practical, professional and technical education
 - Non-financial employer incentives such as kitemarking good courses and publishing an annual list of top dual track vocational training employers to boost public perception
 - Positioning UTCs at forefront of elite vocational education.
2. Address a gap of 150-300k quality (Level 3 or higher) apprenticeships by offering booster STEM courses in all FE colleges to vocational education students who have not achieved the minimum level

to pursue STEM qualifications and boosting funding for qualifications in fields with skills shortages. A multiplier applied to the funding formula would reflect the demands of the economy so that it would be greater than 1 for fields with vacancies and less than 1 for fields with an over-supply of qualified applicants.

3. Channel training funds through employers to make them empowered customers of colleges and more engaged in course selection and design.
4. Introduce and supply funding for regional pooling associations through National Apprenticeship Service, using existing Apprenticeship Training Agencies.
5. Increase availability of apprenticeships through an approach that gradually becomes self-funding by introducing a wage subsidy (possibly through tax breaks or NI contributions).

Appendix

Benefits to the economy

Estimates by BCG of the opportunities for apprentices are based on the fact that whatever the state of the economic cycle and numbers in or out of work, around 1 in 5 vacancies are hard to fill. Over 2007 and 2011 (economic boom and bust cycle) average vacancy rates were 564,000 of which 125,000 vacancies were hard to fill, with an average annual loss in economic activity (using the Keynesian multiplier) of £39,400 per vacancy.²⁸

The estimated £4.9bn includes increased labour income, capital profits and multiplier effects from the increased economic activity. On labour income and capital profits, if a person on £9,000 benefits, including JSA, housing and council tax benefit, gains employment in a level 3 job, paying an average £23,200, he or she is £14,200 better off. If the job was previously an unfilled vacancy, it creates a value of £38,000 of which the employee takes the £23,200 and the employer keeps £14,800. The worker's gain plus the employer's increased profits equals £29,000 a year, or £39,400 using the Keynesian multiplier of 1.36.

Fig 9: Systemic skill shortage drives large parts of benefits to GDP and public accounts

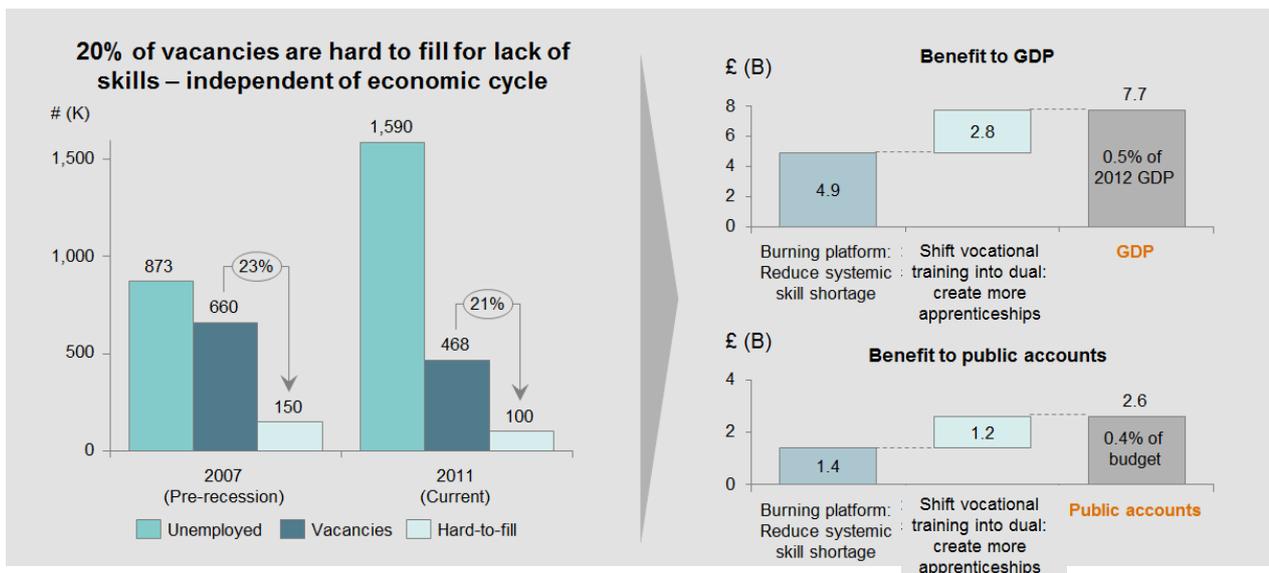


Fig 10: Direct benefits to GDP include both increases due to labour income and capital profits as well as the multiplying effects on economic activity

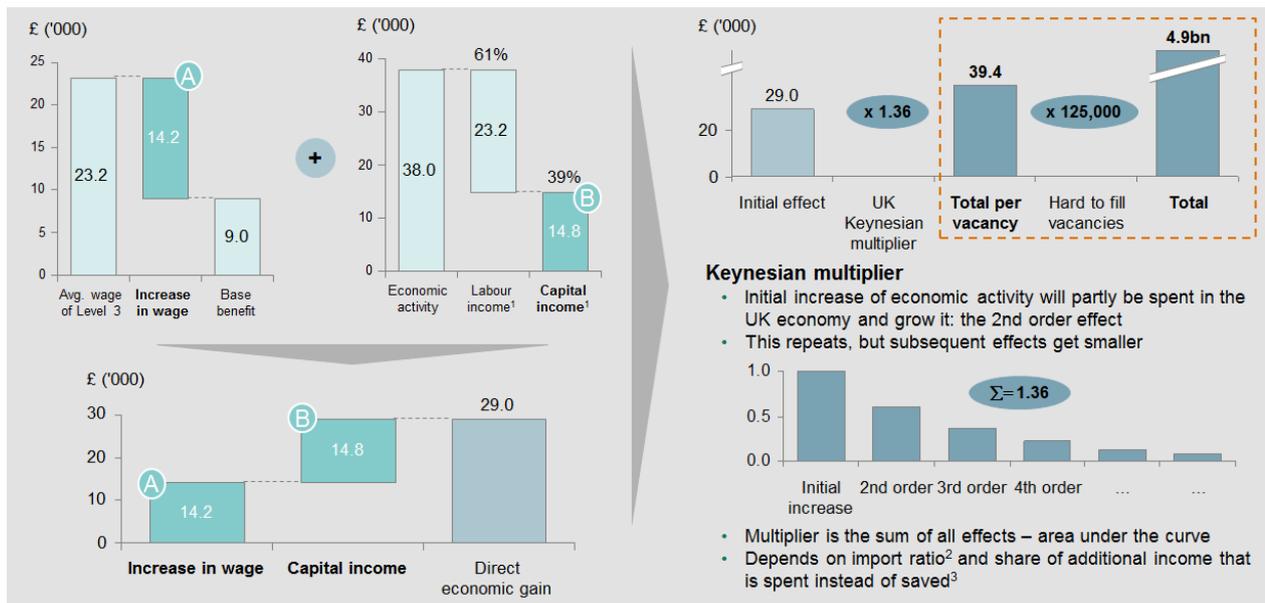
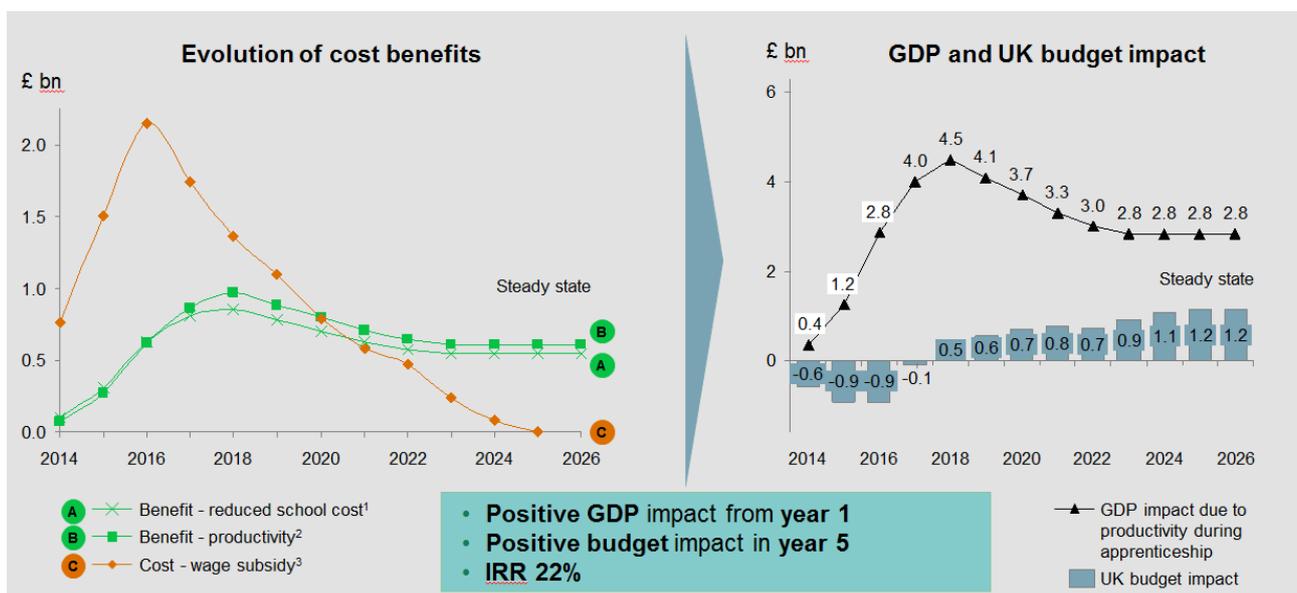


Fig 11: Benefits outweigh costs leading to positive GDP impact from Year 1 and positive budget impact from Year 5



To increase the number of high quality apprenticeships, a “kick-starting” wage subsidy from the Government would be needed. Examples of such schemes include Austria which pays 50-66%¹ of wage costs in the first year. Our research suggests a three-year subsidy applied over nine cohorts – declining as productivity increases – assumed as 60% in Year 1, 40% in Year 2 and 20% in Year 3, based on an average apprenticeship wage of £9,300. The subsidy would be paid through the tax/National Insurance system, similar to the system proposed in the Richard review, with repayment where apprentices fail to complete.

Benefits from increased apprenticeships outweigh the costs, with productivity gains playing a significant part. While it would cost the Government to begin with (2014-2017), from 2017 the government would benefit from budget savings and higher tax take. We estimate that, with steady growth, the apprenticeship scheme would become self-funding within nine years of the first apprenticeship cohort qualifying.

The cost-benefit calculations are based on two assumptions:

- Using the German Dual system as the benchmark and drawing UK costs data taken from the latest YPLA funding statement, spending on off-the-job training would fall by 47% (£2,500) when more of the learning is done in the workplace.
- A £12,600 increase in GDP and £2,700 in tax revenue a year would result from apprenticeships actively contributing to production

The decreasing wage subsidy is intended to create incentives for employers to limit costs, create additional places and retain qualified apprentices in employment. The level of government subsidy would therefore taper off over the 12-year programme as schemes became self-financing. While the first three cohorts would attract 60%, the second three cohorts 40% then the final three cohorts 20%, thus disappearing altogether as the apprenticeships nationally become self-financing.

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- ¹⁸ Careers England: School and Careers Guidance: A Survey of the Impact of the Education Act 2011 (September-October 2012) – page 8 bullet 2.6.3
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- ²⁰ City & Guilds (2012), Ways Into Work: Views of Children and Young People on Education and Employment
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- ²⁴ Including direct effect such as wages but also associated capital profits and repercussion effects; Note: There are additional benefits we have not modelled e.g. 1) Decreased health care and social costs due to higher income of up-skilled workforce 2) GDP growth due to increased innovation that higher skilled workforce will enable. Spill over effects onto next generation as educational attainment of children from up-skilled workforce is expected to increase Source: BCG Analysis
- ²⁵ Based on an average benefits level of ~£9k (including JSA, housing and council tax benefits). Note: Employment rates calculated for population over the age of 15; Source: OECD StatsExtracts (May 2013), Quarter 4 Labour Force Survey (2012), UKCES Employer Skills Survey (2012), ONS Vacancy Survey (April 2013)

²⁶ UK cost data taken from Young People's Learning Agency Funding Statement – Figures are based on 2013 exp budget

²⁷ LSE CEP State of Apprenticeship 2010

²⁸ Including associated capital profits generated by productive work, and the repercussion effects of increased GDP flowing through the economy – i.e. the Keynesian multiplier