

How well do schools prepare children for their future?

May 2017



All-Party Parliamentary Group for
Education



Acronyms Used

ASCL	Association of School and College Lecturers
ATL	Association of Teachers and Lecturers
BEIS	Business, Energy and Industrial Strategy
BIS	Business, Innovation and Skills
CBI	Confederation of British Industry
CEC	Careers and Enterprise Company
CEIAG	Careers Education, Information, Advice and Guidance
CPD	Continued Professional Development
D&T	Design and Technology
DfE	Department for Education
IoD	Institute of Directors
MATs	Multi-Academy Trusts
NEET	Not in Education, Employment or Training
NFER	National Foundation for Education Research
OECD	Organisation for Economic Co-operation and Development
ONS	Office of National Statistics
PAC	Public Accounts Committee
PIAAC	Programme for the International Assessment of Adult Competencies
SEND	Special Educational Needs and Disabilities
STEM	Science, Technology, Engineering and Maths
UCL	University College London
UKCES	UK Commission for Employment and Skills
WISE	Women into Science and Engineering

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Foreword



An Introduction from Danny Kinahan MP

Chair of the APPG for Education

It has become almost cliché to say that the world of work is changing. But that cliché stems from an underlying truth. Technological advancements, particularly in the fields of automation and AI, are set to transform entire industries; an increasingly aged population will burden caring professions that are already under strain; and the political pressures of Brexit will continue to shape the future of our economy.

But while the challenges seem insurmountable, there are also opportunities. New jobs will be emerging, many in already fast-growing sectors such as digital technology, but others that do not yet exist. Our young people are at the heart of this monumental shift in technological progression and ought to be prepared, so that innovation and creativity can thrive and develop in their career sector.

Schools will play a central role in preparing their students for this new reality. In order to give children in our education system the best chance in life, we will need to be equipping them with a broad and adaptable skill set that will best prepare them for the challenges that lie ahead. We must ensure that young people develop soft, financial and entrepreneurial abilities alongside excellent subject knowledge, so that they are sufficiently equipped for the workforce and are attractive to employers. The STEM skills gap must be addressed, and the effectiveness of careers' advice examined.

In the current global climate, where technological and business advances are made at an accelerated rate, young people must be provided with the ability to upskill and retrain to move fluidly between career sectors. If we fail to adequately prepare new generations for this shift, we risk stifling the entrepreneurial spirit and ambition that makes Britain internationally competitive and culturally vibrant.

Evidence submitted to the All-Party Group's inquiry makes a strong case that there is more work to be done in the education sector to prepare children for the changing world of work. Accountability, a lack of resources, low teacher recruitment and high staff workload have shaped institutional barriers that prevent children from accessing the education and information they need to thrive. The network between institutions, employers and the government must be redressed, and radical action must be taken, or we risk leaving generations of young people ill-prepared for a changing world.

I hope that this report will open a dialogue on the nature of the challenges that we face and practical ways to confront them.

May I take this opportunity to thank all those who have submitted written evidence, attended oral evidence roundtable sessions, Andrea Jenkyns MP and Carol Monaghan MP for each chairing a roundtable and to the British Educational Suppliers Association for their ongoing support.

Introduction

Background

According to the latest figures, youth unemployment is at 13.1% compared to a national average of 4.8%. Although it is encouraging that youth unemployment has fallen from 14.1% from the same time last year, there are 757,000 unfilled vacancies in the UK [1], suggesting that the persistently high rate of youth unemployment cannot be attributed to a lack of demand. The UKCES 2015 Employer Skills Survey reports that 1 in 4 vacancies are not being filled because “companies can’t find the right people with the right skills” and the number of these skills-shortage vacancies has grown from 146,000 in 2013 to 209,000 in 2015 [2].

Businesses are consistently reporting that young people are leaving the education system unprepared for the world of work. In its 2016 Education and Skills Survey, the Confederation of British Industry found that the proportion of businesses who are not confident that there will be enough people available in the future with the skills necessary to fill high-skilled jobs has reached a new high of 69%. In his foreword to the report, deputy director-general of the CBI, Josh Hardie, attributed this shortfall to “the gap between education and the preparation people need for their future, as well as the gap between the skills needed and those people have” [3].

The debate on how well schools prepare their children for the future takes place as the job market is entering a phase of rapid change. The Bank of England estimates that up to 15 million jobs in the UK are under threat of automation over the next two decades [4]. In this context, ensuring that young people leave education with appropriate skills for the future is more important than ever.

Our Inquiry

The APPG for Education’s inquiry aims to examine how well our schools are preparing young people for their future, with a particular focus on their readiness for the workforce.

The inquiry sought written evidence to the following questions:

1. What should our schools be focusing on in order to prepare young people for the future?
2. Should schools play a role in developing skills, or should subject knowledge be prioritised?
3. Who should be responsible for ensuring that young people develop soft, financial and entrepreneurial skills?
4. Do education providers have the resources to prepare young people for the workforce?
5. To help the APPG create a practical set of approaches and recommendations:
 - a. What examples are there of schools and colleges preparing young people well for the workforce?
 - b. What examples are there of employer-led initiatives that have had an impact?

In addition, we held roundtable discussions on:

1. The balance between soft skills and subject knowledge
2. The quality and effectiveness of careers advice and guidance
3. The STEM skills gap

Introduction

A list of written submissions and roundtable contributors can be found in the appendix. Complete written submissions and transcripts of the roundtable discussions are available online at educationappg.org.uk/inquiry-2016-17/.

Our report

Our report examines how well schools are preparing young people for their future careers by first looking at the demand for skills from employers and identifying where there are specific shortfalls between supply and demand. The second part of the report evaluates the success of careers education, information, advice and guidance (CEIAG) in bridging the gap between education and employment. The third section identifies the barriers preventing schools from meeting employer demand for skills.

Once the report has been launched we will be looking to actively engage with the Department for Education and Department for Business, Energy and Industrial Strategy to persuade Government of the merits of the recommendations. We will see how the APPG and other interested parties can work with the relevant departments to implement strategies which will ameliorate young people's chance of forging a successful and fulfilling career.

This report examines the education sector from the perspective of unmet skills needs in industry. Although preparing children for their future careers is an important function of education, this report does not mean to suggest that this is its sole function. That is the topic for a wider debate and is outside of the scope of this report.

Section One: The right kind of skills

A changing labour market

The nature of the labour market is changing. Demographic shifts and technological advances mean that the pressures of an ageing population are increasing while traditional job sectors are at risk of automation.

The ONS' latest population forecast [5] projects that the number of people aged 75 and over will rise by 89.3% by 2039, by which time 1 in 12 of the population will be aged over 80. This has two implications for the future workforce.

First, the ratio of dependents to productive workers will worsen, with 310 pensioners per 1000 people of working age in 2014 set to rise to 367 per 1000 by 2039. Since inward migration tends to be largely comprised of people of working age [6], this situation could be felt even more acutely if immigration significantly decreases following Britain's exit from the European Union.

Secondly, with over-50s participation in the labour market already at an all-time high [7], young people will increasingly find themselves in competition for jobs with older workers. This pressure is already borne out in the UKCES Employer Skills Survey 2013 which found that half of recruiting employers who had not recruited a young person had opted instead for candidates over the age of 25 who were seen to be better placed [8]. Employers cited skills, experience or both as the reason for this choice.

At the same time, advances in artificial intelligence mean that technology has the potential to replace a far wider range of tasks than ever before. Robots are increasingly able to perform routine cognitive tasks, as well as routine manual tasks, meaning that white collar occupations such as accountancy and medicine stand to be radically transformed by new technology [9]. Research by Michael Osborne and Carl Frey on behalf of Deloitte found that 35% of UK jobs are at high risk of computerisation [10] suggesting that there will be significant labour market disruption over the coming decades. Many young people today will be working in jobs that do not yet exist and need to be equipped with skills that allow them to be adaptable to changing circumstances [7].

Literacy and numeracy

Basic literacy and numeracy skills are essential for young people's success in employment and the government considers attainment in this area to be a key indicator of the performance of the education system.

Recent analysis undertaken on behalf of the then Department for Business, Innovation and Skills (BIS) found that only 12% of workplaces in Britain reported a literacy and/or numeracy gap in their workforce (although the report speculates that these deficits may be under-reported) [11]. This is replicated by the CBI's finding that "many businesses are satisfied with graduates' basic skills" and most reported satisfaction or better with recent employees' numeracy (91%) and literacy (86%) skills [3].

While there is room for improvement, this should be considered a success. However, it is important to note that only 37% of businesses consider basic literacy and numeracy to be an important factor in recruiting school and college leavers, compared to 89% who count attitudes towards work/character amongst the most important factors [3]. This suggests that there is work to do beyond the government's sometimes parochial focus on English and numeracy attainment.

Soft skills, character and resilience

In order for young people to be best placed to withstand the twin pressures of an ageing population and a changing labour market, the education system needs to provide education and skills that will remain relevant.

In a labour market that is already changing, there is a growing consensus amongst employers that formal knowledge is no longer enough to prepare young people for the workforce. In their submission of evidence to our inquiry, the Association of School and College Lecturers (ASCL) described “a desire for young people to arrive in the workforce better equipped with attributes which allow them to move more quickly into mastery of new situations” [12].

The skills which allow children be adaptable in this way fall under a number of monikers, but are most often described as “soft skills”; characteristics which are valued by employers that are broadly applicable across a range of industries and positions [13]. Soft skills include attitudinal characteristics such as confidence, motivation, and self-awareness; life skills such as social skills and time-keeping; and transferable skills like problem-solving and teamwork. These characteristics are also typically underdeveloped in socio-economically disadvantaged young people, presenting a major barrier to social mobility [14].

The desire among employers for young people with better soft skills is demonstrated by a recent survey by the Institute of Directors which found that 38% of their members were suffering from an inability to find the right person to fill a vacancy. The skills that these employers most often reported as lacking in young people fall under the broad umbrella of soft skills, with 33% worried specifically about communications skills, 35% about team working and 36% about resourcefulness [15]. The CBI’s most recent skills survey also finds that businesses are not satisfied with school leavers’ communication (50%), analysis (50%), and self-management (48%) [3].

These skills are only going to become more important as they are uniquely “human” attributes and are less susceptible to automation. Research undertaken by Deloitte already shows a dramatic increase in the numbers employed in “caring professions”, such as nursing assistants, teaching assistants and caseworkers [16], all of which require a high degree of emotional intelligence.

STEM skills

One trend that is already obvious is an increasing demand for skilled STEM workers, particularly in the digital technology workforce. The digital technology sector grew 32% faster than the rest of the economy between 2010 and 2014 and created 1.56 million new jobs between 2011 and 2014, at a rate 2.8 times faster than the rest of the economy. The rapid growth of the sector has, however, created a skills gap, with 43% of digital technology companies reporting that their growth is being limited by skills shortages [17]. This skills gap is apparent across the wider STEM sectors; research undertaken by UKCES found that 43% of STEM vacancies are hard to fill due to a skills shortage compared to 24% of other vacancies [18].

The disappointing number of young people leaving the education system adequately qualified to work in STEM fields reflects underlying weaknesses in the STEM talent-base. BIS analysis of international benchmarks shows that, despite performing strongly on research excellence, the UK performs poorly on

a number of key indicators of success in STEM. In particular, the UK consistently underperforms on OECD-PIAAC measures of basic skills (such as literacy, maths, and ICT) relative to comparators; returns low scores on measures of management skills; and has a poor retention rate of PHD researchers [19]. Overall, there is significant evidence that weaknesses in the STEM talent-base, as well as associated skills, mean that the UK economy is not deriving maximum benefit from the resources available.

Attitudes towards STEM subjects, careers and career paths can often be a barrier to pupil participation. STEM subjects are commonly believed to be too difficult for less academically able students, leading many pupils to self-deselect from the field. This problem is exacerbated by the heavy literacy demands of early science teaching, despite the fact that other skillsets such as spatial awareness are more conducive to success later on. In addition to this, misconceptions persist around the nature of STEM careers. For instance the Royal Academy of Engineering notes that engineering is often believed to be manual and low status, discouraging some pupils from pursuing work in that area [20].

STEM also suffers from under-representation of women and minority groups. The Institute of Physics found that four times as many male students study physics at A-Level as their female counterparts, a disparity that is reflected to a slightly lesser extent across the STEM disciplines. This imbalance carries through to STEM-based employment, with women occupying just 21% of STEM-based jobs in Britain according to the Women into Science and Engineering Campaign [21]. Women are particularly poorly represented in IT and engineering and the UK has had the lowest rate of female employment in engineering across the whole of Europe [22].

Section Two: Careers Education, Information, Advice and Guidance

Careers education, information, advice and guidance (CEIAG) is the link between schools and the world of work. Careers education provides learning about careers as part of the taught curriculum and can involve work experience and work related learning. Careers information includes resources pertaining to future career and course options and more in-depth explanation of this information is known as careers advice. Guidance relates to the exploration of a student's skills and attributes with respect to available careers options [23].

Children make decisions that will affect their future employability up to a decade before they enter the workforce and good CEIAG should give young people an understanding of how their skills fit opportunities in the job market, presenting them with the full range of options available to them and ultimately informing their decisions at GCSE and A Level.

The quality, provision and reach of CEIAG has come under considerable scrutiny in recent years. The Gatsby Foundation's report on Good Career Guidance found that only 39% of schools offer employer engagements each year from year 7 [24] and research carried out by the DfE in 2015 found that 13% of schools offer no workplace visits, with 8% not offering any work experience at all [25].

The benefits of good CEIAG

Good careers information can open doors for young people and should be considered a fundamental driver of social mobility. Young people from socio-economically disadvantaged backgrounds lack the social capital of their more affluent peers and do not have access to the same network of contacts through their parents. Careers advice, high quality employer engagements through work experience, and a good careers education can go some way to levelling the playing field.

CEIAG shows young people the range of options available to them based on their skills, aptitudes and interests. Effective careers advice and guidance will show students how best to leverage their own set of skills and uncover clearer routes to better jobs. In particular, careers advice and guidance can build awareness of vocational routes to work, apprenticeships and further education, all of which have been traditionally overlooked by school staff who tend to prioritise their own sixth forms or higher education.

CEIAG also challenges young people's internalised assumptions about the types of jobs that are appropriate for them. For instance, careers advice and guidance can challenge students' conceptions of gender roles or encourage disadvantaged pupils to aspire beyond their perceived limitations.

There is also strong evidence that employer contact as part of a careers education can have a positive impact on young people's future life chances. So long as it does not detract from the development of subject knowledge, embedding careers education in the curriculum can show students the real world applicability of skills they are learning and help to demonstrate the range of careers options available should they pursue a particular programme of study.

The Education and Employers Taskforce in 2012 found that students who experience four or more employer engagements are five times less likely to be NEET and will on average earn 16% more than peers who have had no employer engagements [26]. Since schools were released from their duty to provide work experience placements in 2012, there is a sense that children are not getting sufficient

access to employers. This again disproportionately affects socio-economically disadvantaged pupils who, lacking the social capital of their more affluent peers, find it more difficult to arrange work experience without a formal structure in place.

At our roundtable session on careers provision [27], several participants suggested that the government should do more in this area. Deirdre Hughes from the University of Warwick Institute for Employment Research in particular argued that all children should have had at least one hundred hours of work experience by age 16 and others suggested that the guarantee of work experience before the age of 16 should be reinstated.

Employer contact can be particularly important in the STEM subjects, which are plagued by misconceptions and misinformation. Pupils' negative perceptions of STEM subjects combined with a lack of awareness about the opportunities flowing from a STEM education prevent many students who may have an aptitude for STEM, or an interest in a STEM field, from pursuing this area of study. Research by Nestlé UK and Ireland highlighted that 78% of 14-16 year olds would consider a career in a STEM-related field but, despite this, 86% of GCSE Physics students do not continue the subject to A level and 72% of maths students drop the subject after GCSE. This level of attrition can be attributed to the fact that 51% of the children surveyed were not aware of what career options come from studying a STEM subject [28].

In our STEM education roundtable [29], Dr Mhairi Crawford of the WISE Campaign highlighted that raising awareness of STEM opportunities through employer engagements and positive role models is an important part of increasing female uptake of STEM.

Changes to delivery of CEIAG in England

In recent years, the delivery of CEIAG has changed. Before 2012, local authorities delivered careers guidance through the Connexions service. The Education Act 2011 placed a statutory duty on local authority maintained schools to provide secure access to independent, impartial careers guidance for pupils in years 9-11, which came into force in February 2012. This duty was later expanded to include years 8-13. At the same time, schools were released from their duties to provide careers education and mandatory work experience.

In 2012, the government launched the National Careers Service in place of Connexions to provide people over 13 years of age with information, advice and guidance on learning, training and work opportunities. To bridge the gap between schools and employers in terms of different working patterns and timelines, the government instituted the Careers and Enterprise Company in 2014. The CEC is designed to broker partnerships between schools, Further Education colleges and employers in order to give pupils aged 12 to 18 better access to advice about finding a career. The CEC has been involved in research to map the effectiveness and quality of careers provision across the country and, in 2015, announced a £5m investment fund drawn from the £20m provided for the initial start-up of the CEC to target the "cold spots" that its research had identified.

More recently, as part of her speech to the 2016 Conservative Party Conference [30], Justine Greening announced six "Opportunity Areas" which aim to target priority spending at six of the worst performing areas in England in terms of social mobility. The scheme includes "a teaching and leadership innovation fund worth £75 million over 3 years focused on supporting teachers and school leaders in challenging

areas to develop” and aims to provide children with the right knowledge and skills; better advice; and “great life experiences” [31]. The Opportunity Areas are intended to ensure better integration between schools and existing services, such as the Careers and Enterprise Company and the National Citizens’ Service, and improve access to business.

The quality of CEIAG in schools

Many respondents to our inquiry described CEIAG in schools as “patchy” and several criticised the confusing landscape of overlapping departmental responsibilities combined with third party outreach. The London Councils Young People’s Education and Skills response noted that the statutory duty to provide independent, impartial careers advice was instituted in 2014 without making provision for new funding [32] and NFER espoused a need for a culture change and a coherent strategy for careers education [33].

Despite the 2011 Education Act placing a statutory duty on local authority maintained schools to provide secure access to independent careers guidance, poor enforcement coupled with a lack of funding for the new duty has meant that uptake of genuinely independent and impartial advice has been disappointingly slow. A survey of schools undertaken by Careers England in 2015 found that 24% of schools still use an internal member of staff and, where schools do provide independent access to careers advice and guidance, 40% reported that advice was supplied by a careers adviser qualified below level 6 as defined by the Careers Development Institute [34].

The paucity of careers advice and guidance is felt by young people. A survey carried out on behalf of AllAboutSchoolLeavers.co.uk [35] found that almost a third (31.2%) of schools leavers report that they do not know what they want to do after leaving school or college. In addition 78.5% of young people say that their parents are their main source of careers advice. A study by the Edge Foundation and City & Guilds found that only 1% of those in further education cited careers advice as their main reason for staying in education [36], suggesting that the careers advice that does exist is not having the desired impact.

Like careers advice and guidance, careers education is also patchy. Kings College London’s ASPIRES 2 project found that less than two thirds of Year 11 pupils receive careers education and less than half have had work experience [37]. In addition, the report finds that careers education is “not just ‘patchy’, but is patterned – particularly in terms of social inequalities.” This means that the young people with low social capital who stand to benefit the most from careers education are those least likely to experience it. If careers education is not adequately embedded in the curriculum, students may find themselves learning subject knowledge without understanding its practical application. This can be demotivating and may result in young people excluding themselves from potentially lucrative and fulfilling career paths because of ill-informed choices at GCSE or A Level.

There are plenty of examples of good employer and school partnerships: Barclays’ Lifeskills, Young Enterprise and National Grid’s Educating to a Better Future website, and Jaguar Land Rover initiatives were among examples provided to the inquiry. However, the reach of such partnerships is haphazard and disorganised. The UKCES 2014 Employer Perspectives Survey found that while 66% of employers think that work experience is critical when hiring young people, only 38% offer it [38]. In addition, ATL carried out a survey in 2014 which discovered that 40% of its members reported poor access to, and involvement from, national employers. The DfE has begun to put in place measures to address the

inconsistency of employer engagement, initially through the Careers and Enterprise Company and more recently through the new Opportunity Areas.

As well as failing to reach socio-economically disadvantaged pupils, career development for children with special educational needs and disabilities (SEND) also lacks visibility. Evidence provided to the inquiry by Talentino notes that many careers bodies do not reference the group and it is often excluded from national level research [39]. The Church of England observe in their response that “being successful as an adult will not look the same for everyone” [40] and, although the obligations for schools to provide CEIAG theoretically extend to children with SEND, their needs and destinations are often not the same as other pupils.

Overall, CEIAG is not consistently well applied across schools in England. Non-academic routes into work remain worryingly obscure in many cases and too often careers advice is provided by unqualified or underqualified individuals. Most concerningly, good quality CEIAG is largely failing to reach disadvantaged young people, for whom high quality provision would have the most transformative impact, and the discourse around children with SEND in this context is worryingly limited.

The role of teachers

Despite the statutory duty to provide independent and impartial careers advice, too many schools are still using internal members of staff to provide careers guidance, or not providing guidance of a high enough quality [34].

Clearly, there is a necessary role for teachers in careers learning as part of a partnership with careers guidance professionals [41]. As part of their day-to-day activities, teachers already provide pastoral support for their students. Thinking about future career choices provides the context for many of the decisions and issues that students encounter while at school, and working through these will inevitably fall to teachers as their primary point of contact. Teachers also have a role in demonstrating the relevance of aspects of the curriculum to the world of work, something that is essential in keeping pupils motivated and interested in their learning.

However, there are negative consequences when teachers are the sole providers of careers guidance. Firstly, as this report will examine in more detail in the next section, teachers are overburdened already and do not have the capacity to take on additional duties. If careers guidance is to be given the time and attention it deserves, it needs to be practiced by a professional.

Secondly, teachers are not well placed to deliver careers guidance, both in terms of current knowledge and impartiality. Given that many teachers join the profession immediately after graduation and many others have been out of the labour market for many years, most teachers will not have an up to date understanding of the jobs market.

In addition, teachers cannot be considered impartial and, due to government guidance which ties sixth form viability to the number of students enrolled [42], can have a stake in trying to encourage Year 11 pupils to remain in sixth form. In our roundtable session on careers provision Marcus Mason of the British Chambers of Commerce reported that some schools are uneasy about sending their pupils to careers events that offer apprenticeships [27]. Many of the submissions to our inquiry, as well as recommendations heard during the roundtable session, argued that the government should aim towards a minimum standard of careers advice and guidance, with impartiality being a key factor.

Section Three: Barriers to delivery

School capacity

Funding and resources

The vast majority of respondents to our inquiry reported that schools are struggling with increasingly limited resources. This means that time and money are often focused on areas of a pupil's development that are directly reflected by accountability measures, at the expense of other areas that are equally crucial for a young person's future life chances such as good quality careers guidance or soft skills development.

An increase in the birth rate since 2002 means that schools in the UK will see their pupil numbers rising. The Department for Education projects that secondary school pupil numbers, which were largely static between 2005 and 2015, will rise to 3,287,000 by 2024, an increase of around 20% of the 2015 school population. Primary school pupil numbers have already been rising since 2009 [43]. The changes in pupil populations will strain existing resources in terms of teachers and facilities and put pressure on schools' finances as there is no provision for funding per pupil to rise in line with inflation. In addition, rising pupil numbers have implications for class sizes; if schools in England are to maintain the current pupil to teacher ratio, they will have to recruit 30,000 more teachers by 2020 [44].

At the same time schools are faced with rising costs elsewhere. In particular, schools have been paying larger National Insurance Contributions since April 2016 and increased employee pension contributions since April 2015. Taken together with the expanding pupil population and rising inflation the Institute for Fiscal Studies predicts that school spending per pupil will fall in real terms by around 8% on average by 2020 [44]. This represents the first real terms cut in school budgets since the mid-1990s.

The effects of these cost pressures are already beginning to bite. A report by the National Audit Office [45] found that 60.6% of secondary schools spent more than their income in the 2014/15 school year and mainstream schools will have to make £3bn worth of savings by 2020 to counteract cost pressures. The British Educational Suppliers Association's quarterly headteacher barometer has found that headteachers are already making substantial cuts to expenditure compared to the previous year, with spending on resources falling by 6.7% in secondary schools and by 3.7% in primary schools [46].

The government is currently consulting on a new funding formula which aims to address historic inequities in the distribution of school funding. This will see more than 10,000 schools gaining more funding, of which more than 3,000 will receive an increase of more than 5% [47]. However, since no new funding is being made available, more than 9,000 schools will see their funding cut and teaching unions are warning that, regardless of the higher funding for some schools, the vast majority (92% of schools) will experience a real terms budget cut [48].

In the context of these funding cuts, schools will be confronted by difficult decisions on how to allocate the limited resources at their disposal. The Director of Economic Strategy and Negotiations at the Association of Teachers and Lecturers, Adrian Prandle, said that "without additional funding schools will struggle to recruit enough staff, many will have to cut staff, cut the subjects they teach, cut IT upgrades, increase class sizes, cut the maintenance of classrooms, cut extra curricula activities and charge parents for school concerts and plays" [49].

Clearly, this will have an impact on how well schools are able to prepare young people for their future careers. With limited resources at their disposal, schools will be forced to focus on the narrow demands of school accountability, which are imperfectly aligned with the needs of employers. If more funding is not made available, schools will be unable to provide the broad and balanced curriculum, encapsulating good careers education and character development, which will equip them for the future demands of employment.

Teacher recruitment and retention

As pupil numbers rise, so too must the number of teachers. Good quality teachers are central to an education system which adequately prepares children for their future careers.

England is currently experiencing a crisis in teacher recruitment. An investigation into teacher recruitment by the Public Accounts Committee [50] found that the Department for Education has missed its targets to fill teacher training places four years running. The report also highlights “significant local variation” in teacher availability and castigates the DfE for taking a reactive and incoherent approach to dealing with the crisis.

The mismatch between supply and demand of teachers has meant that more pupils are being taught by teachers who are not subject specialists. The PAC report found that the proportion of lessons in EBacc subjects taught by non-specialist teachers rose from 14% in 2010 to 18% in 2014. The inadequate supply of teachers qualified to degree level in the subject they teach will have implications not only for the quality of teaching, but also for teachers’ ability to communicate an enthusiasm and passion for the subject which is crucial for inspiring pupils to take those subjects further.

The shortage of specialist teachers is particularly significant as a contributing factor in the poor uptake of STEM subjects. The Government’s own figures [51] show a worrying shortfall in the recruitment of specialist teachers, with the Government falling below its recruitment targets for science teachers by 15% for the 2015/16 academic year. This shortage has implications for the quality of teachers that are being recruited to fill vacancies and therefore for the quality of STEM education that pupils are receiving.

Schools are also struggling to recruit specialist language teachers, which is a significant obstacle to the government’s target of 90% of pupils achieving the EBacc (currently only 40% of pupils enter [52]). Rebecca Allen of the Education Datalab estimates that up to 3,400 new language teachers are necessary to deliver the EBacc for all pupils [53]. Beyond the somewhat artificial needs of accountability, the option to study a foreign language is important as the demands of an increasingly globalised world call for employees with language skills [54]. Modern foreign languages are a real weakness of England’s education system and this is something that cannot be resolved through accountability; the teacher shortage needs to be addressed.

Teacher workload and professional development

Ultimately, in preparing young people for their future careers, there is no substitute for excellent teachers. There are heavy demands placed on teachers, not only to impart up to date subject knowledge in their chosen field, but to meet their school’s administrative requirements, mark work, plan lessons, and run extra-curricular activities.

Recent analysis of the OECD's Teaching and Learning International Survey (TALIS) by the Education Policy Institute [55] shows that full time secondary school teachers in England work an average of 48.2 hours per week, 19% longer than the average elsewhere and around a fifth of teachers reported that they had worked 60 or more hours in the most recent week when surveyed.

Crucially, the report also finds that high teacher workload in England is hindering access to continuing professional development, with teachers in England ranked 30th out of 36 jurisdictions in terms of days spent on CPD. Since teachers are not well placed to respond to the changes in the demands of the labour market and have often never worked outside of teaching, good quality, regular CPD is essential to ensure that teaching remains as relevant and effective as possible. It is particularly important that teachers are encouraged to stay up to date on the ever-changing technological and digital demands of their field.

The greatest barrier to achieving a sustainable teacher workload is the culture which led to its proliferation in the first place: the belief (mistaken or otherwise) that large quantities of written evidence are necessary for accountability purposes. This is a problem particularly associated with Ofsted inspections where myths persist regarding the quantity and format of marking, lesson plans, and progress reports that need to be available on request [56]. Ofsted have updated their inspection handbook and produced a "mythbuster" document in an effort to address misconceptions around Ofsted's evidence requirements [57], but it remains to be seen how successful Ofsted have been in dispelling these myths.

The Government has also taken some positive steps to reduce teacher workload. Most notably, the Department for Education launched three workload review groups [58] – on marking, planning, and data management – following responses to their workload challenge. Each of the working groups have produced their final reports, providing guidance on eliminating unnecessary workload stemming from inefficient working practices.

However, none of the working group recommendations or Ofsted reassurances deals with the issue at the heart of the workload problem – a high stakes accountability system that creates perverse incentives that work at cross-purposes to the needs of the children in the education system.

Accountability and curriculum

High stakes accountability

In school accountability, the stakes have never been higher. Ofsted judgements have significant ramifications for schools. The consequences of "failure" can range from poor publicity to loss of jobs and now academisation/rebrokering [42]. Where accountability measures should engender greater support for underperforming schools, they are instead seen as punitive and are a source of anxiety and fear.

There is evidence to suggest that Ofsted ratings do not have the desired positive effect leading to improvements in the school system. An "outstanding" school is much more desirable to parents than an "inadequate" school and Sutton Trust research shows that almost twice as many (13%) of "outstanding" schools are classified as socially selective compared to "inadequate" schools (7%) [59]. In addition, provisional findings from Sam Sims at the UCL Institute of Education suggest that schools rated "inadequate" find it more difficult to retain teachers, which has a further negative impact on the pupils enrolled at the school [60].

Given that schools with a low intake of children on Free School Meals and more pupils with high prior attainment are more likely to be judged “good” or “outstanding” [61], the cycle of educational disadvantage can be self-reinforcing. The school system which aims to promote “parental choice” only extends to parents who have the means to make those choices and, with academies in control of their admissions procedures and the planned proliferation of selection by academic ability, the system is increasingly moving towards one where schools select their pupils rather than parents choosing their child’s school. This situation is perversely incentivised by the pressures of league table performance. This has concerning implications for disadvantaged pupils and Anna Feuchtwang of the National Children’s Bureau has reported anecdotal evidence that academies are more reluctant to accept children with special education needs without education and health and care plans [62].

The high stakes nature of accountability, and the worry associated with it, means that schools are encouraged to become experts in passing accountability measures, rather than to provide for their pupils’ individual needs. This is problematic when considered alongside declining school funding and spiralling teacher workload as schools have fewer resources available, and increasingly limited motivation, to invest time and money in anything not covered by accountability.

The alignment of accountability and employability skills

A large number of respondents to our inquiry highlighted the distorting effects of current accountability measures. The IoD said that skills taught to pass exams – method and recall – are amongst the easiest to automate [15]. The Association of Teachers and Lecturers said that “as a result of the accountability system, the majority of schools’ resources are directed toward exams” [63].

In recent years, the government has used layers of accountability, along with structural reform, as the main drivers for school improvement. There is nothing wrong with this in theory, but accountability must promote the right outcomes in order to be effective. Section one of this report outlines skill gaps present in the labour market and section two examines the paucity of CEIAG. Shortcomings in both of these areas are due, in no small part, to the narrowing effect of high stakes accountability measures.

There exists somewhat of a paradox in accountability. On the one hand, the best way to make schools prioritise a subject is to feature that subject in accountability measures. This is evident in both careers education and soft skills development - neither are strongly reflected in accountability and both suffer as a result. On the other hand, high stakes accountability leads to a narrowing focus on only the areas covered by the framework, resulting in other areas of pupil development being neglected. Since a system of accountability that covers everything necessary to adequately prepare each unique pupil for their future careers would be hopelessly complicated and impossible to administer, the best way forward is to give teachers space to make those judgements for themselves.

An imperfect, high stakes accountability system inevitably leads to a standardisation of teaching practices [64] aimed at getting pupils to pass defined thresholds, which may not be in the best interests of particular pupils. Every pupil is not the same, but accountability treats them as though they are. For example, the English Baccalaureate, which was conceived to ensure that every pupil receives a “a base of knowledge and a set of life chances too often restricted to the wealthy” [65], can instead create perverse incentives that guide pupils away from an education that suits them.

The most obvious example of this is that the EBacc prioritises, and would appear to give primacy to, academic knowledge over vocational routes into work. One notable omission from the EBacc “bucket”

system is Design and Technology, a practical subject with skills that are applicable in a range of STEM vocations. The Dyson Foundation and the Royal Academy of Engineers see D&T as crucial route into STEM for less academic pupils and both have sought to influence the content of the subject to that end. Although the EBacc cannot be held responsible for the drop in the number of pupils taking D&T - which has been evident since 2000 [66] - its omission from the framework does nothing to arrest subject's decline. D&T is an expensive subject and its teachers are notoriously difficult to recruit; with other subjects being given precedence, there is no incentive for struggling schools to provide the subject.

In a similar vein, the EBacc has precipitated a fall in the number of pupils taking creative subjects [67]. This is a problem not only because the creative industries are one of the main success stories of the UK's economy and because these are skills at low risk of automation, but because success in these topics can develop desirable traits such as self-confidence and motivation. With too stringent an adherence to the EBacc as it is currently formulated, there is a danger that less academically gifted students will be forced into an education which does not suit them, causing them to become disengaged and demotivated.

As well as narrowing the curriculum in terms subjects studied, poorly administered accountability measures can also narrow the range of skills taught within subject areas. This is particularly noticeable in terms of soft skills development. While the vast majority of respondents to our inquiry argued that the distinction between soft skills and academic knowledge is unhelpful and that soft skills have to be developed in tandem with academic knowledge, it is clear that the dimension of a young person's skill set commonly referred to as "soft skills" is being neglected by the taught curriculum.

On the surface, there is no reason why soft skills should not be developed through traditional academic disciplines; an academically rigorous, subject based curriculum does not preclude soft skill development. For instance, literacy teaching can provide an ideal forum to contribute to oral communication skills. However the mechanism for building soft skills in this case has been removed from accountability - the literacy specification no longer includes speaking and listening [68].

This is broadly true across the board; soft skills do not feed in to accountability so, where resources are tight, they are ignored. The answer to this is not necessarily more accountability - it is almost impossible to measure soft skills reliably, which is why they are excluded from accountability measures in the first place. Instead, teachers need to be given the space to teach these skills without fear of being penalised by a parochial accountability system. In our roundtable session on STEM David Perks, the Principal and founder of East London Science School, noted that "...one great thing that the government did in its last two iterations was to get rid of coursework...it means [practical lessons are] not an onerous duty" [29]. In this example, instead of using accountability to achieve an outcome, good teacher training and CPD should demonstrate the value of using practical learning in science.

Giving teachers space must go hand-in-hand with sufficient teacher recruitment; good professional development which espouses the value of teaching soft skills alongside the knowledge required by qualifications; and adequate resources, in terms of time as well as finances, allowing teachers to be creative. At the moment the government is trying to use accountability to guarantee an excellent education for all pupils, but is inadvertently harming teachers' ability to access the CPD and resources necessary to achieve this.

There are plenty of examples of schools that develop non-cognitive skills alongside the accountability framework, but these tend to be schools in more affluent areas [14]. The comparatively poor provision

for disadvantaged students in struggling or just about managing schools was a consistent theme of the inquiry across all areas investigated.

Vocational Education

Further education and vocational education is increasingly being seen by the government as a crucial instrument of social mobility. The coalition government announced new University Technical Colleges (then known as Technical Academies), designed to promote diversity in the school system and improve vocational education, as part of their programme for government [69]. The previous government committed to achieving 3 million apprenticeships and legally protected the term “apprenticeship” through the Education Act 2016 [70]. More recently, skills minister Robert Halfon MP launched the Technical and Further Education Bill which is designed to streamline and improve the quality of technical and further education [71]. The government also published its *Post-16 Skills Plan* in July of last year [72] with specific legislative proposals appearing in the spring budget of this year.

However, despite recent strides in further and technical education policy, a number of issues still persist.

In a speech to the CBI in November 2014 [73], Sir Michael Wilshaw made the case that vocational routes to work, such as apprenticeships, need to have parity of esteem with A Levels and other academic routes. He argued that apprenticeships should be “sold aggressively to schools, parents and young people.” To facilitate this, Sir Michael said that “the quality of careers information and guidance must be raised substantially.” In our roundtable session on STEM education [29], Dr Rhys Morgan, Director of Engineering and Education at the Royal Academy of Engineering, said that he believes there to be “just as much a shortage in engineering and technician roles as there is in professional roles” due to a lack of awareness of vocational pathways into STEM. The Royal Academy for Engineering’s *UK STEM Education Landscape* report [20] also laments the low status of non-academic pathways.

Despite promising initiatives to align vocational education with the academic option in the government’s *Post-16 Skills Plan*, other government policies would seem to be working at cross-purposes. In particular, the exclusion of D&T from the EBacc sends a clear message that technical education is not considered as important as more academic subjects that are included.

The Royal Academy for Engineering’s *UK STEM Education Landscape* report also warns that further education providers are increasingly expected support a wide range of entrants with widely varying skill levels at the same time as being stripped of resources.

Section Four: Conclusions and recommendations

There is strong evidence from the business community that the education system is not delivering the skills they require in the sufficient quantities. This situation arisen because of a number of inter-related factors. Accountability, lack of resources, low teacher recruitment and high teacher workload all feed in to each other and have created a system which stifles creativity and works at cross-purposes to the government's wider education policy objectives.

The world of work and the labour market is changing and the education system is not keeping pace with developments. This is because the dialogue between schools, government, and employers is not sufficiently fluid. These links will have to be strengthened and embedded in the near future and employers must be encouraged to feed in to education policy and curriculum development.

Teachers

Fundamentally, there is no substitute for great teachers. Teachers are the primary point of contact between students and the education system and it is ultimately teachers that will motivate, impart and knowledge and inspire young people to embark on the pathways which will lead them to employment.

However, there are not enough teachers in the system. The government has consistently missed recruitment targets, particularly in key areas such as languages, STEM, and D&T, meaning that too many children are being deprived of an excellent education. The Department for Education has remained blasé about the realities of the teacher recruitment crisis and has failed to put in place a systematic and coordinated response backed by evidence.

We recommend that the Department for Education considers teacher recruitment to be its top priority. The Department should evaluate the success of existing incentives and initiatives to boost the workforce in specific areas and formulate a clear plan to recruit more high quality teachers across the board.

Accountability

Elements of the education system as it exists today stifle the talent of teachers in the system. Teachers are overburdened with an unsustainable workload stemming from high-stakes accountability measures that incite fear and conformity, rather than encouraging support and creativity. Accountability is meant to ensure that the education system delivers desirable outcomes. However, the high stakes nature of accountability ironically creates a culture of "gold-plating", entailing additional workload which hinders teachers' access to CPD. This means that teachers are not able to dedicate enough time to their own development, preventing them from reaching their potential as teachers.

The Department has already made welcome strides on tackling teacher workload through the workload review groups. The Department should work to publicise the conclusions and recommendations of these groups. We recommend that the Department in particular prioritise teacher access to CPD, which will have benefits both in terms of teaching and ability to manage workload. Teachers should also be encouraged to embrace shared resources in MATs and make appropriate use of educational technology to ensure that the resources which are available are being fully exploited.

The Department should also recognise that the main driver of teacher workload is a high stakes accountability framework which incites fear in schools. The Department should fundamentally reconsider its approach to accountability, beginning by agreeing on a central purpose of education. The

Department should then assess how well current top-level accountability incentivises outcomes that align with this purpose.

The Department should aim to make Ofsted accountability more focussed on outcomes than process. Ofsted inspections should focus more on school and Multi-Academy Trust level leadership than on individual teachers. School inspections should be limited to ensuring that schools are providing an environment where their pupils can reasonably be expected to flourish.

Where schools are failing, Ofsted should intervene on a more collaborative basis; working with schools to identify and address the issues which have led to poor performance. To mitigate the damaging impact of Ofsted inadequate judgements, we recommend that the Department considers rebranding Ofsted judgements.

School funding and resources

The inquiry found that some schools are able to give young people an excellent preparation for their future careers within current funding arrangements, but that this is not a universal experience. This is largely because schools feel compelled to prioritise spending in areas covered by accountability.

We recommend that the Department works to give space to teachers, either by relaxing accountability measures or by freeing up additional resources. It is essential that this is done in conjunction with Ofsted so that schools are clear on what they will be judged on when inspected.

As secondary school pupil numbers are set to rise significantly over the next decade, the government will have to start allocating additional funding for schools. We recommend that this happens as soon as possible. Schools and the wider education system are a crucial part of the national infrastructure and should be treated as such.

Careers provision in schools

CEIAG in schools is patchy and in particular fails to serve the needs of socio-economically disadvantaged pupils and children with SEND.

We recommend that the government reinstates mandatory work experience. In order to prevent the organisation of placements adding to teacher workload, secondary schools should have a clear structure for careers provision, with a non-teaching member of staff having overall responsibility.

Careers advice and guidance should always be provided by a qualified, independent and impartial counsellor. There is no point adding stricter CEIAG accountability measures to Ofsted inspections when there are not enough qualified careers advisers. We recommend that the Department defines a minimum qualification that counsellors must achieve and investigates ways to further professionalise the careers guidance sector. The Department should consider the coverage of high quality careers guidance as one of its own key performance indicators.

Children with SEND must be more visible in debates around careers provision. The Department should seek to identify what “good” careers education looks like for children with SEND, so that careers guidance counsellors can receive appropriate training and ultimately forge a strong network of local partnerships with businesses that lead to positive career outcomes for children with SEND. The Careers

and Enterprise Company should also be tasked with specifically investigating the reach of careers provision to children with SEND, and to special schools in particular.

In order for schools to be able to provide CEIAG services, the government should allocate additional resources to schools for the explicit purpose of providing CEIAG. Academies should also be encouraged to pool resources to keep costs down.

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Appendix

Submissions of Written Evidence

- Association of School and College Leaders
- Association of Teachers and Lecturers
- British Council
- BT
- The Careers and Enterprise Company
- Career Connect
- Career Development Institute
- Careers England
- Centre for Real-World Learning at the University of Winchester
- Church of England Education Office
- EdComs
- Future Academies
- GL Assessment
- Hampshire County Council
- Institute of Customer Service
- Institute of Directors
- Jane Christie (individual)
- London Borough of Hounslow
- London Councils Young People's Education and Skills
- MyKindaFuture
- National Literacy Trust
- Nurturing Schools Network
- Paul Milton (individual)
- Philip Harris Education
- PSHE Association
- PTA UK
- Reclaim Project
- Red Balloon Learner Centre Group
- Royal College of Speech & Language Therapists
- The Skills and Growth Company
- Southampton City Council
- Talentino Careers
- Third Space Learning
- The Quality in Careers Consortium
- Youth Employment UK

Knowledge and Skills Roundtable attendees

- Danny Kinahan MP (chair)
- Fiona Abankwah, Sydney Russell School
- Jonathan Baggaley, PSHE Association
- Cara Bleiman, Arnhem Wharf Primary School
- Jo Causon, Institute of Customer Service
- Janet Clark, Association of Teachers and Lecturers
- Laura Gibbon, National Citizen Service
- Rania Hafez, University of Greenwich
- Dennis Hayes, University of Derby
- Mark Herbert, British Council
- Lord Knight, TES

- Dr Shirley Lawes, UCL Institute of Education
- Ruth Lowe, PTA UK
- Harriet McCann, National Literacy Trust
- Dr James Panton, Magdalen College School
- Lin Proctor, Future Academies
- Alka Sehgal-Cuthbert, University of Cambridge

Careers Education, Information, Advice and Guidance Roundtable attendees

- Andrea Jenkyns MP (chair)
- Anna Cole, Association of School and College Leaders
- Jenny Connick, Talentino
- Sherry Coutu, Founders4Schools
- Alison Critchley, RSA Academies
- James Croft, The Centre for the Study of Market Reform of Education
- Gavin Dykes, OECD and Education World Forum
- Jan Ellis, Career Development Institute
- Kieron Gordon, Career Connect
- Sean Harford, Ofsted
- Dr Deidre Hughes, University of Warwick
- Marcus Mason, British Chambers of Commerce
- Ruth Mieschbuehler, University of Derby
- Seamus Nevin, Institute of Directors
- Laura-Jane Rawlings, Youth Employment UK
- Jim Skinner, Grammar School Heads Association
- Steve Stewart, Careers England
- Andrew Thraves, Prospects
- Jane Walton, Federation of Small Businesses
- Kath Wright, Careers Education Consultant

STEM Education Roundtable attendees

- Carol Monaghan MP (chair)
- Professor Louise Archer, King's College London
- Sophie Bessemer, Third Space Learning
- Esther Bouselham, Findel Education
- Kevin Courtney, NUT
- Dr Mhairi Crawford, WISE Campaign
- Steve Emery, Instruments Direct
- Fiona Miller, BT
- Tim Oates, Cambridge Assessment
- David Perks, East London Science School
- Richard Picking, Gratnells
- Chris Ratcliffe, Scholastic
- Anne-Marie Shand, Pearson
- Julie Swan, Ofqual
- Martina Ratto, MyCognition
- Steve Whitley, Data Harvest