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Ending the Big Squeeze on Skills: How to Futureproof Education in England

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Our Future of Britain initiative seeks to reinvigorate progressive politics to meet the challenges the country faces in the decades ahead. Our experts and thought leaders will set out a bold, optimistic policy agenda across six pillars: Prosperity, Transformative Technology, Net Zero, Community, Public Services and Britain in the World.

Executive Summary

The new technologies of the Fourth Industrial Revolution are profoundly altering society, the economy and the labour market. In order to thrive in a world increasingly shaped by automation and artificial intelligence (AI), human workers will require skills that complement these technologies – and adapting to them will require a radically different education system.

England has undergone several decades of reform in education, aimed at improving standards. At the core of these changes was a long-overdue and welcome focus on accountability, discipline and safe school environments.

However, the education system in England continues to rely heavily on passive forms of learning focused on direct instruction and memorisation. Taken together, the current curriculum, mode of assessment and inspection regime drive schools to overemphasise knowledge, and to instil this via a narrow set of methods and subjects.

Of course, pupils still need a good grounding in knowledge. But to flourish in increasingly digital workplaces, they also need more space to develop attributes such as critical thinking, creativity, communication and collaborative problem-solving (which experts dub the "4Cs").

Instead, by doubling down on a narrow core of traditional, knowledge-heavy subjects and designing accountability measures around these, the government has missed a prime opportunity to heed these changes. This was the wrong turn at the wrong time.

Yes, the government can point to some positive outcomes on its watch, at least when measured in more conventional terms. For example, the UK has remained relatively well placed in the OECD's Programme for International Student Attainment (PISA) rankings of educational achievement. But PISA tests were always prone to being too narrow and, given the changing nature of employers' skills needs, they are on their own increasingly unsuited to educational realities. Moreover, our apparently good performance masks huge domestic inequalities, as well as the fact that we have been treading water while our competitors have surged ahead in key areas.

The OECD has now developed sophisticated measurement tools to test more complex skills, which means it is increasingly possible to focus on what matters most rather than what is measurable. Meanwhile, some of the world's top education performers are busy innovating and adapting their approaches to learning.

All the while in England, current incentives restrict schools' leeway to focus on other valuable subjects and skills, instead encouraging rote learning. This extends to academies, laying bare the tension between the government's purported goal of greater school autonomy and its narrow view of school success. As a result, the formidable potential that exists in the academies model remains largely suppressed.

This is driving our educational performance in the wrong direction. Schools have significantly trimmed what they teach and the subjects pupils are taking are drawn increasingly from a small range of traditional academic subjects dubbed the "English Baccalaureate", or the "EBacc". By crowding out non-EBacc subjects, the government's reforms damage learning and stifle efforts to improve social mobility.

High-stakes exams at the end of courses now dominate assessment, which promotes teaching to the test and narrow pedagogies. More than half of schools are starting GCSEs early, further squeezing what pupils learn.

Amplifying the impact of these reforms is the other pillar of the accountability system – the school-inspection regime. Widespread fear of Ofsted because of the system's high-stakes nature, as well as its apparent use of the national curriculum as a benchmark, further restricts innovation among schools, particularly in areas of greater deprivation.

Policymakers should urgently correct course. Addressing these issues and overhauling the system will be challenging and will require a radical but sequential approach to change. This is not about a return to the misguided ideologies of the 1970s. Instead, at the core of a reformed system should be a revised curriculum, more sophisticated modes of assessment and a new, rigorous accountability framework that is better attuned to the things that matter most. By pairing this with a comprehensive edtech strategy, we can personalise learning so that pupils grasp the basics much more quickly. This combination of reforms would free up time and introduce the right incentives for a focus on developing more complex skills. That would be a system fit for purpose in an age of profound transformation.

Everyone from employers' organisations to the numerous experts consulted for the Times Education Commission are calling loudly for action. Some leading private schools are already responding to market pressures by adapting their teaching along the lines we propose in this report. Others are bound to follow, and it is vital that state schools are not left behind. It is time for a rethink. What we need is a bold reform programme. It should take place in three phases, beginning with the most immediately deliverable:

Recommended Reforms

Pupil Assessment and School Performance

- Phase One: Scrap the EBacc and retain Progress 8 as a performance measure but make it more flexible to accommodate other valuable, non-EBacc GCSEs.
- Phase Two: Introduce elements of the "4Cs" (collaboration, communication, critical thinking and creativity) as an accountability measure for schools, based on current and emerging OECD tests. In time, further develop this measure by incorporating a value-added component.
- Phase Three: Replace the current system of assessment, including GCSEs and A-Levels, with a new qualification at 18 that would draw on and refine the principles that underpin the International Baccalaureate and would include multiple, rigorous forms of continuous assessment between 16 and 18. Meanwhile, retain a series of low-stakes assessments for pupils at the end of secondary schooling – at 16 – to help inform pupil choice and hold schools to account.

School Inspection

- Phase One: Change Ofsted's strategy and approach to focus on safeguarding (including safe classrooms free from bullying and other forms of harm) and quality of school management instead of pedagogy and the curriculum. Replace the grading system – where already 86 per cent of schools are now good or outstanding – with a detailed one-page summary of strengths and weaknesses, identifying what they are so that parents can see a more effective analysis of school performance. Retain a pass/fail assessment for schools which require urgent remedial measures.
- Phase Two: Establish a national digital infrastructure for education, starting with a student-owned learner ID and digital profile. Nominate a designated data body for the school sector and develop a peer benchmarking data tool for schools to contextualise performance.
- Phase Three: Empower Ofsted to play the "critical friend" role by using data to contextualise and target interventions and establishing peer-to-peer expert groups to help resolve intractable issues.

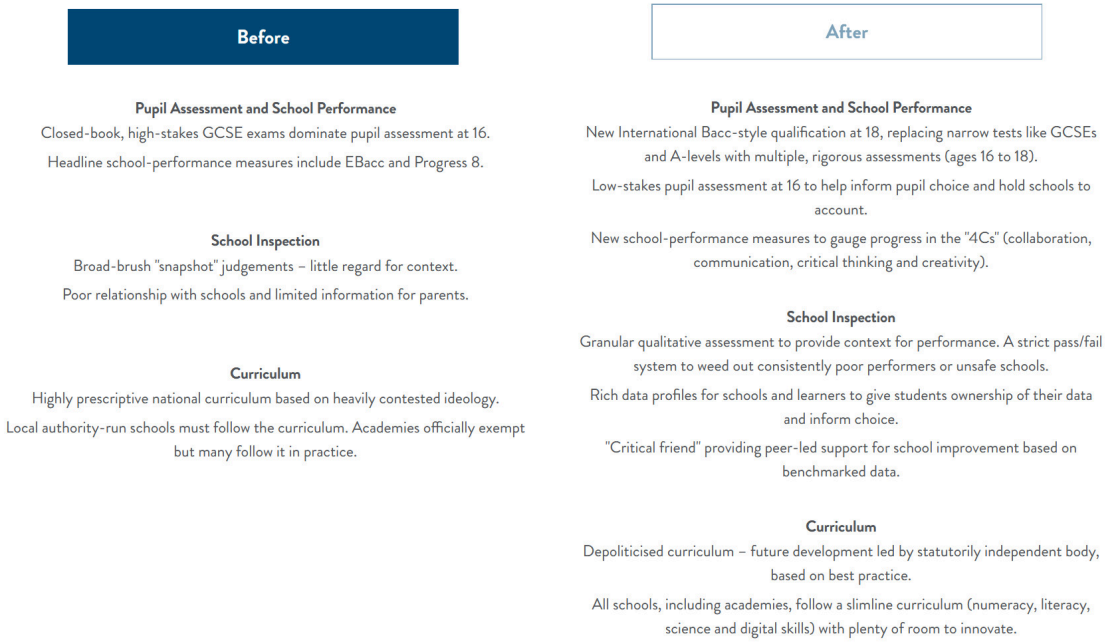
Curriculum

- Phase One: Establish an expert commission to reform the national curriculum and base it on minimum proficiencies for numeracy, literacy, science and, with time, digital skills, building on international best practice.
- Phase Two: Introduce a statutory requirement for all schools, including academies, to follow the core of a newly reformed national curriculum (numeracy, literacy, science and digital skills).
- Phase Three: Introduce more stability into the curriculum to prevent its content lurching between ideological idiosyncrasies. This can be done by charging the design of the national curriculum to a

non-political and statutorily independent body to update it as new evidence of best practice emerges.

Implementing the system we propose will make schools answerable for their performance, while allowing them to focus on foundational learning and innovate in pursuit of more complex competencies and skills. Underpinned by a strong and flexible data infrastructure, it would change the relationship between schools and parents, giving the latter a chance to hold schools accountable for whatever matters the most to them – rather than just narrow metrics – and make more informed decisions about their children's education.

Figure 1 – The education system today and after our recommendations are implemented



Source: TBI

With schools finally emerging from the disruption of Covid-19, policymakers have a chance to move away from the narrow, safety-first education system that has dominated the reforms of the last decade. This does not mean diluting standards or letting coasting schools get away with low performance. Discipline, rigour and accountability to parents are still paramount for any school. Our proposed system will still have these principles at its core, while delivering the education that every child – no matter where they live – needs and deserves.

Introduction

For over three decades, governments have prioritised raising school standards following years of relative policy neglect. Their reforms aimed to imbue state education with more rigour in ways that appeared sensible given the context in which they were conceived, and they have led to improvements. But our world is changing – its rules are being rewritten by a technological gearshift that is reordering which skills and attributes hold weight in the labour market and beyond. Viewed in these terms, many of the reforms of the last decade look badly outdated and we risk falling behind our competitors if we continue to adopt a static approach to education policy.

The process of placing school standards more firmly on the political map has its roots in the late 1980s. Lord Baker's reforms marked a watershed moment for school assessment when he introduced GCSEs in 1986. These new, more rigorous, qualifications were designed to improve the consistency of assessment and raise standards. He followed this with a statutory national curriculum, with the aim of giving all pupils the right to a broad and balanced study programme and holding schools accountable for providing this.

Sir John Major's government also demonstrated a significant appetite for reform, not least in relation to the school-inspection system, which it radically overhauled in 1992 by creating Ofsted. The inception of this central body, paired with a new common inspection framework, meant that schools would now be inspected in a systematic and regular fashion. Its core aim, heralded by its first chief inspector, Professor Sutherland, was to raise standards and improve the quality of educational experience and provision.

After 1997, New Labour showed us that structural reforms alone could not lift school standards to adequate levels so paired these with the investment they needed to really take off. It introduced several wide-ranging, systemic changes – for instance its academies programme, which re-founded failing state schools and imbued them with new leadership. But it also backed up these reforms by increasing spending from an unacceptably low base. Per-pupil funding more than doubled in real terms, from £3,030 in 1997/98 to £6,350 in 2009/10.

The results of this dual focus on structures and spending were clear to see. For instance, New Labour's widely acclaimed London Challenge programme helped to transform the quality of state education in the capital and some of the country's worst-performing local authority areas became some of its best. Nearly 4,000 schools were rebuilt or significantly upgraded. By the end of the noughties, far more 11-year-olds were reaching expected standards in literacy and numeracy. And a substantial majority of pupils now achieve five or more good GCSE passes.

The Conservative-led governments that followed have picked up the baton and have tried to build on New Labour's reforms. Their main doctrine has been to focus on instilling the basic building blocks of

education more widely. They wanted to create a system that drives higher minimum standards across a diverse patchwork of state schools, where many pupils still fail to command even the basics. Their ambition was for all pupils to have a sound bed of knowledge on which to build other skills. And they believed that academisation could be a vehicle for school improvement.

The government can point to some improvements on its watch. For instance, since the introduction of the Phonics Screening Check in 2012, the proportion of Year 1 pupils meeting the expected standard rose from 58 per cent to 82 per cent. The proportion of schools judged "inadequate" fell from 8 per cent in 2009/10 to 2 per cent in 2020/21, while the proportion of "good" and "outstanding" schools increased. And overall standards – at least when measured in the conventional ways – were maintained even as the government lurched towards austerity, which saw school spending per pupil in England fall by 9 per cent in real terms between 2010 and 2020.

Internationally, England is an above-average performer, typically ranking in the top 15 to 20 countries on the achievements of 15-year-olds in the OECD's reading, maths and science PISA tests. On the other hand, the UK, including England, has made no significant progress since 2006, even as schools policy doubled down on attainment in those subjects. As Figure 2 shows, England is part of a small group of countries to show no decline or improvement based on an average three-year trend since its first assessment. A number of other countries – which had outperformed (Singapore), matched (Estonia) or trailed (Portugal) England a decade ago – have significantly improved in that time.

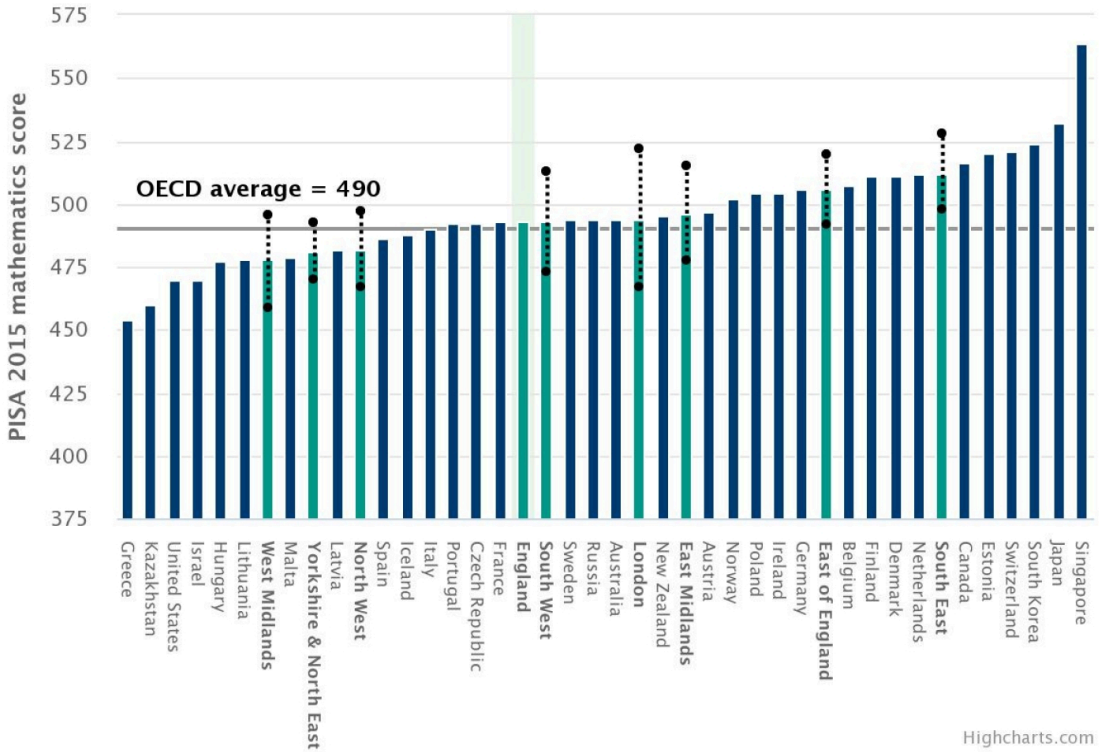
Figure 2 – Average performance trends since the first PISA assessment in reading and maths: Britain has shown no improvement

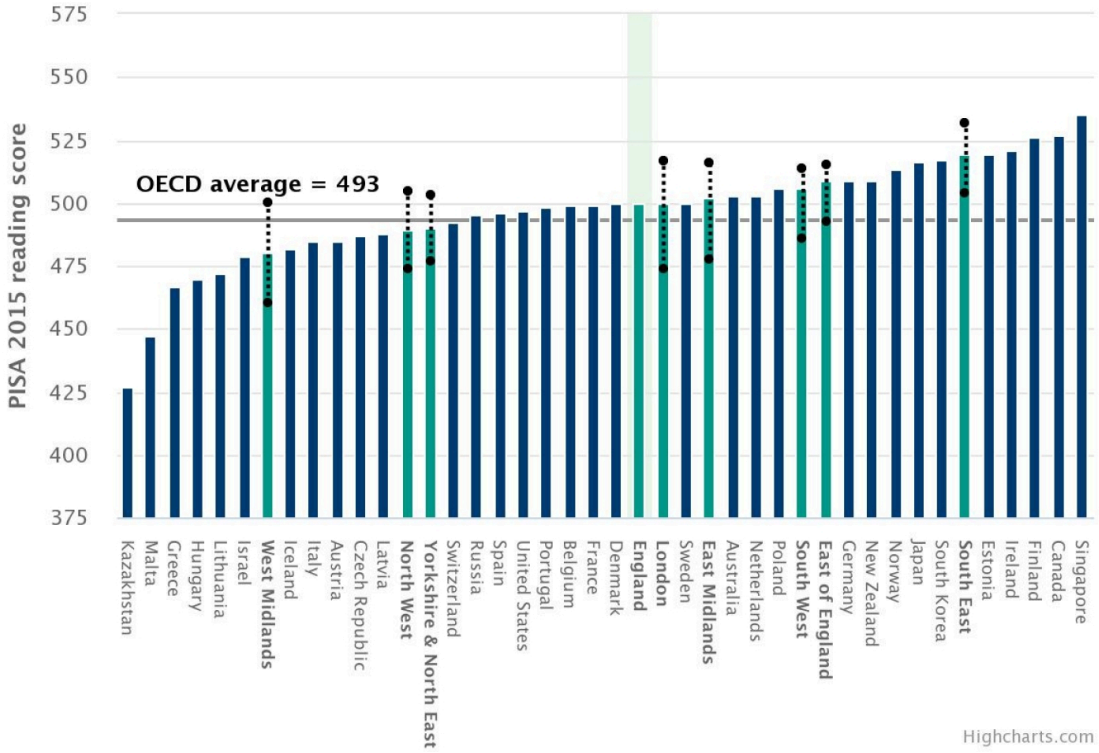
Source: OECD • Chart is based on each country's average three-year trend over the full period of their participation in PISA; only countries and economies that participated in PISA 2018 and at least one assessment prior to PISA 2015 are included.
"NS" = non-significant trend

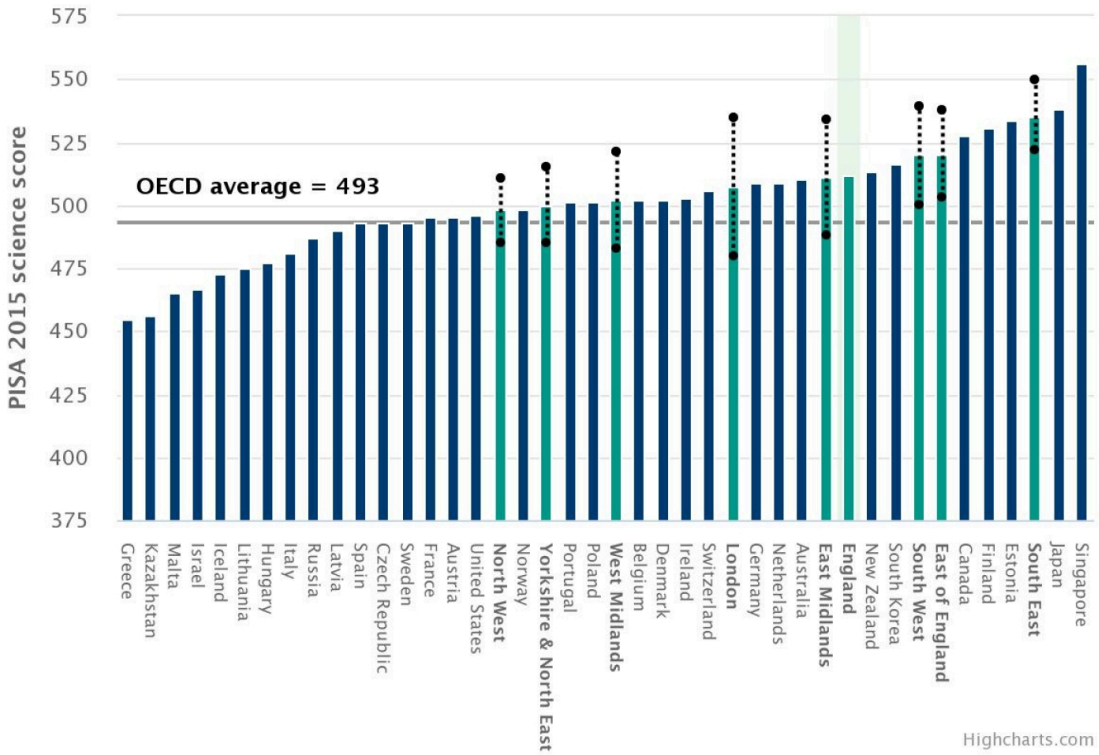
Source: OECD

Moreover, the comparatively high *average* performance masks some persistent inequalities within the English system. While schools in the South East of England and the best schools in London perform as well as an average school in Estonia, Japan or Singapore, schools in the North West and North East are approximately 30 points below, equivalent to roughly a year of schooling and *below* the OECD average (see Figure 3).

Figure 3 – Comparing English regions' reading, science and maths scores to those of other countries







Source: Analysis of PISA 2015 data matched to the National Pupil Database (the dotted lines represent 95 per cent confidence intervals)

Similar geographic and income disparities can be seen in exam performance. According to the Education Policy Institute, the disadvantage gap – the difference in the GCSE performance of pupils eligible for free school meals at some point in the preceding six years and that of their peers – stood at 18.1 months of learning in 2019. While this represents a small decrease relative to 2011, when the gap was equivalent to 20.4 months, progress in closing the gap has stalled over the past three years (and has likely been reversed by the impact of Covid). Moreover, this progress has been slower in the core GCSE English and maths subjects.

But a more fundamental problem than the stalling of improvement is the way that the incentives embedded in the school system point educators in the wrong direction. The government's strategy has focused on the transmission of specific knowledge across a narrow range of academic subjects, mostly assessed through a rigid set of high-stakes exams. Meanwhile, the success of schools as educational bodies is measured using narrow performance metrics, paired with a clunky school inspection system.

While the government was going back to basics, the world was moving rapidly on. AI and automation are profoundly altering the economy. The net-zero transition will upend whole industries and create entirely new ones. Children in school today are more likely than ever before to have several careers over their much-longer working lives. In general, the new business models that technologies like automation, AI and digital communications are ushering in will require workers to have a very different, and more demanding, set of skills compared to today.

Thriving in the labour market of the future will require proficiencies that draw on distinctive human attributes that machines and AI cannot replicate – for example, the ability to adapt to new and unexpected situations; a knack for interacting and communicating with people from a wide range of cultures and backgrounds; and the capacity to deal with ethical dilemmas and exercise aesthetic judgement.

These capabilities cannot be fostered simply by instilling in pupils a narrow pool of traditional knowledge and hoping for the best. The system the government has created leaves little scope for schools to develop in their pupils the personal and non-cognitive skills essential for success in later life. Instead, its obsessive focus on what are assumed to be core competencies crowd out the problem-solving and collaborative skills which build on these, and which employers are crying out for.

Meeting the challenge of technological change will require schools and their regulators to embrace a much broader view of what is needed to equip pupils to flourish and lead fulfilling lives. This means creating a modern curriculum and developing new modes of assessment. It does not mean weakening accountability, which is of fundamental importance. But schools must be held accountable for the right things: their success in nurturing, across the whole country, the kinds of skills needed for the modern labour market. As the recent Times Education Commission has rightly argued, profound reform is vital if we are to build an education and skills system fit for the challenges of the Fourth Industrial Revolution.

We begin with an analysis of the changing pressures on the education system, and the new emerging methods and technologies we must adopt to help policymakers meet these pressures. The report then examines the direction of post-2010 reforms and explains how they have inculcated the wrong incentives given the skills and attributes pupils need to develop. It concludes with a comprehensive slate of reforms to correct these problems and set English schools on a path to competing with the world's best. The focus throughout is on secondary schooling for pupils aged 11 to 16.

English Schools Are Not Set Up for Future Success

The role of education is to equip people with the skills and personal qualities they need to succeed in life. As argued above, reforms of recent years have helped schools in many parts of the country to raise standards and improve educational outcomes.

But these improvements are no longer enough and we face being left behind by a profound set of changes. As our recent paper on expanding higher education argued, the application of AI and automation means workers looking to thrive in the labour market of the future will increasingly require a combination of "hard" and "soft" skills that complement, rather than rival, the new technologies. [1]

The impact of technology is also being compounded by two related trends: 1) the ongoing shift in advanced economies from manufacturing to services industries, which places an additional premium on good interpersonal skills; and 2) the globalisation of white-collar work, meaning service workers in rich countries must increasingly compete for jobs with equally skilled workers in emerging economies. [2]

Failure to reform education, or to successfully manage these skills transitions, risks sacrificing much needed growth and improvements to productivity at a time of economic stagnation and low or declining real incomes. It will also worsen inequality, as technology is expected to produce a general upskilling in the labour market while also sharply reducing the number of lower-skilled jobs involving the performance of routine tasks (as these can be done by machines). This effect operates by raising the market value of workers with a high-level combination of hard and soft skills, and potentially removes a route out of poverty for those with lower levels of education via low-skilled work. [3]

This analysis is not idle speculation by futurists – it chimes closely with the latest projections of future skills demand and studies of what employers require from workers entering or preparing to enter the labour market. The World Economic Forum says the top skills and skill groups that employers see as rising in importance include things such as critical thinking and analysis, as well as problem-solving, along with skills in self-management such as active learning, resilience, stress tolerance and flexibility. [4] These undermine the value of standardised learning models in which teachers impart information through a narrow curriculum, and raise the importance of processes based on the creation of new ideas and methods.

Employers' organisations increasingly recognise the importance of creativity as part of the ideal portfolio of workers' skills. In the "CBI Skills Framework", employees at "advanced" and "expert" levels are

expected to exhibit more creative and investigative skills by developing and disseminating new ideas across their organisation. [5]

Nesta, the UK's innovation agency, finds a particularly strong relationship between higher-order cognitive and interpersonal skills, and future occupational demand. [6] Likewise, surveys of UK employers concerning their future skills requirements show that seven-in-ten rated soft skills and behaviours as a top-three factor when recruiting school and college leavers. [7] Instilling in pupils the 4Cs, in other words, is not a luxury but a necessity.

However, 45 per cent of employers in the UK government-commissioned Employer Skill Survey report deficiencies in complex analytical skills. [8] This is not confined to schools, although we argue that the narrowness of the school curriculum creates problems further down the line at colleges and universities.

Around two-thirds of level-3 pupils (for example those who studied A-levels, tech levels and applied general qualifications) go on to some form of higher education or training. [9] Surveys that focus on the remaining cohort reveal particular employer dissatisfaction. For example, 44 per cent of employers surveyed in 2016 by the Department for Education (DfE) said school leavers in England going directly into jobs were either "poorly prepared" or "very poorly prepared" for work, compared with only 15 per cent saying the same about graduates. [10]

In a survey for a report backed by an employer's educational think tank, a third of teachers claimed that the narrower curriculum had undermined the development of skills and attitudes needed for work, with a majority saying it limited chances for students to acquire creative-thinking skills. [11] The issue is now attracting deep cross-party concern, with a recent House of Lords report lamenting the government's failure to prepare for emerging skills shortages caused by digitalisation and the growing green sector. [12]

But developments in technology are not just driving these changes to the demand for skills. They can also help overcome longstanding logistical constraints on addressing such emerging demands on the labour force. In particular, digital personalised learning tools can improve instruction in fundamental competencies, freeing up teachers to do more to help their students develop the non-cognitive skills that should be the focus of a forward-looking education policy.

The government is right to want to ensure that every learner develops fundamental competencies (reading, writing and maths in particular). In practice, this comes at the expense of developing other skills because of the demands on teachers' time that traditional instruction methods and class sizes place. This trade-off is particularly acute in schools with more disadvantaged student populations where this "back-to-basics" approach can leave little time for other activities. In our report *Tech-Inclusive Education: A World-Class System for Every Child*, we highlighted how strategic investment in education technology, and in particular adaptive learning platforms, enables schools to deliver a quality education across both these foundational areas and the "4C" skills so crucial to our future.

Such platforms use ongoing testing of pupils' knowledge – formative assessment – to ensure that children can learn at their own pace. Some play a diagnostic role, identifying parts of the curriculum that learners struggle with and providing this information to teachers so they can address common misconceptions. Other platforms combine assessment with presentation of content, so that students can learn on their own – in the classroom, at home or in catch-up classes – freeing up teachers to focus on other activities.

There is a growing evidence base showing the efficacy of these tools, particularly for numeracy and literacy. One example is Mindspark, an adaptive learning platform for maths, English and science used by 500,000 students, primarily in India. After 4.5 months of use, its users' knowledge of maths and Hindi increased by more than twice that of students going through small-group tuition. [13] A review of evidence from the UK by the Education Endowment Foundation showed that in many cases, pupils on free school meals benefitted more from the use of effective edtech platforms than their peers. [14]

Broad adoption of personalised learning tools would make the trade-off between the "basics" and the non-cognitive skills that the new economy demands obsolete. Unfortunately, over the past decade (at least until the Covid-19 pandemic) school policy in England largely refrained from exploring the possibilities of technology despite accumulating evidence of its efficacy.

Instead of correcting course, the government has doubled down on its approach. Meanwhile, some of the world's top performers are busy innovating to hone more complex competencies. Finland is putting cross-disciplinary learning at the core of its curriculum – the aim here is to splice different subjects and solve problems by drawing on multiple areas, which in turn helps pupils develop creative thinking and complex problem-solving skills. While its recent PISA scores are below those of earlier years, it continues to perform above the UK, showing that cross-disciplinary learning is not antithetical to strong fundamentals. Japan now emphasises active learning; whereas traditional pedagogies in the country are characterised by "lecturing from the podium" and passive learning, pupils are instead taught to think more independently. Singapore is reducing the frequency of high-stakes exams sat by its students to create room for more creative and critical thinking including through the use of projects. What unites these more forward-looking approaches, and others, is an appreciation that the world is moving on and that education must move with it.

Changing OECD Performance Measures

The OECD understands this point only too well and is adapting its methods of assessment to better measure achievement in complex skills that are increasingly important in the labour market. Although its PISA tests have for years focused on a relatively narrow set of foundational subjects and skills, this largely reflected the administrative limitations of the time: even if officials wanted to measure more

complex skills, they would have found it very difficult to do this. Thus, in an example of the "tyranny of the measurable", guidance on curriculum design was skewed by the need for it to generate reliable data for the performance measures, rather than being based on an understanding of what was best for learners. However, as the OECD has recently demonstrated, some of those challenges are now surmountable and it has started to add complex skills to the mix of aptitudes it can now reliably test.

One such example is collaborative problem-solving, an increasingly valuable skill to employers, and in 2015, PISA measured it for the first time. The results showed pupils were not developing this key skill through current modes of teaching: just 8 per cent of pupils could complete tasks with a "fairly high collaboration complexity".

PISA has now also developed a detailed methodology to measure creative thinking – pupils' capacity to generate, evaluate and improve ideas that result in original, effective solutions and advances in knowledge – and later this year is due to start measuring this internationally. Other countries are putting this into practice. For example, educational researchers in Australia are developing methods for evidencing creativity based on the new OECD criteria to be incorporated into the school curriculum. [15]

As Figure 4 highlights, creative thinking has a great deal of transferability, and so the ability to measure this crucial skill is a real game-changer: policymakers will now be able to trace how well their pupils fare in this area and could also introduce appropriate accountability measures to encourage progress.

Figure 4 – Creativity has a broad range of applications

Expressive		**Knowledge creation and problem-solving**	
Written	**Visual**	**Social**	**Scientific**
Generate diverse ideas			
The pupil writes captions for a story	Combines shapes to present data or a story	Finds multiple solutions to social problems	Develops multiple mathematical models to solve a scientific problem

Generate creative ideas			
Produces an original title for some artwork	Produces a poster for an exhibition that conveys its content	Produces a strategy to market a product	Develops an effective solution to an engineering problem
Evaluate and improve ideas			
Makes an improvement to a title for artwork in the light of new information	Improves a poster for an exhibition to make clearer the connection to its content	Develops an original improvement to a suggested solution to a problem	Makes an improvement to an experiment that builds upon and improves the experiment

Source: OECD

The OECD also recognises, and has demonstrated empirically, that pedagogies focused on memorisation become increasingly less useful as pupils attempt to complete more complex tasks that demand non-routine analytical skills. It has also calculated that the opposite is true: that more sophisticated pedagogies aimed at developing pupils' abilities to think creatively and apply knowledge to new situations better equip them to unravel complex problem-solving exercises. Given the increasingly high importance placed on the latter set of skills, these insights help to explain why the OECD has channelled its energy into developing more nuanced measures. How does this mesh with the current approach in England?

Understanding the Government's Reform Programme

Under Conservative-led governments since 2010, ministers have used all the main levers available to policymakers to try to influence schools. All these tools have been deployed with a view to realising a very specific worldview about the meaning and role of education. That vision is heavily rooted in a traditionalist logic – namely, that the transmission of subject knowledge across a narrow range of traditional academic subjects should be schools' priority; [16] that high-stakes, end-of-year individual examinations should be the default mode of assessing progress; and that a "good" school is ultimately one that fares well when it comes to both elements.

In this section, we set out the government's main reforms. In the following section, we assess the effect they have had on schools' behaviour.

Reform One: The National Curriculum

The national curriculum sets out the compulsory subjects, associated content and attainment targets that schools must teach (ages five to 16). It splits subject requirements into four key stages; the current configuration is outlined in Figure 5 below.

Figure 5 – How the national curriculum is configured across age groups

	Key Stage 1 Ages 5 to 7	Key Stage 2 Ages 7 to 11	Key Stage 3 Ages 11 to 14	Key Stage 4 Ages 14 to 16
Maths	✓	✓	✓	✓
English	✓	✓	✓	✓

Science				
History				
Geography				
Art and design				
Physical education				
Music				
Languages				
Computing				
Design and technology				
Citizenship				

The new curriculum introduced very specific programmes of study for each subject, focused more on tightly defined content that was based heavily on a knowledge-rich approach with a focus on core

knowledge. [17] These changes replaced the 2007 national curriculum which, in the government's view, was based on a series of aptitudes with insufficient subject-based content. [18] The reformed curriculum applies to all local authority-maintained schools in England, but not to academies – the latter can instead devise their own curricula subject to sign-off from the DfE. In practice, many academies follow much of the national curriculum. [19]

Reform Two: Assessment

Broadly speaking, reforms to assessment covered three main elements. First, they placed more emphasis on high-stakes exams at the end of courses. Alternative forms of assessment were scaled back to a minimum – for instance, coursework was scrapped in many cases and exam aids were minimised.

Second, the reforms promoted GCSEs as the dominant form of qualification at Key Stage 4. Many vocational qualifications were stripped from school-performance tables, which meant they were disincentivised.

Third, the old grades were replaced by a 1 to 9 scale, which made room for a new top grade, and questions were more challenging. The government also retained the grading method of "comparable outcomes". The starting point when determining grade boundaries under this system is that, for any given year, a cohort should achieve the same standards as those attained by the previous one. Boundaries can be adjusted based on other evidence, including the national reference test and examiners' judgements. But in practice, around a third of GCSEs are typically graded at under 4 each year – grades that are widely regarded as commensurate with failing. [20]

Reform Three: Performance Measures

The efficacy of a school is determined by performance measures and school inspections (the latter of which we explore later in the paper). Today's headline performance measures are reflected below.

Main Headline Measures [21]

- Progress 8 (progress across eight qualifications that must tick certain boxes to qualify)
- Attainment 8 (attainment across the same eight qualifications as Progress 8)
- EBacc entry (percentage of pupils entering the full English Baccalaureate – a collection of the most traditional subjects)
- EBacc APS – English Baccalaureate average point score

- Attainment in English and maths (percentage of pupils achieving a grade 5 or above in those two subjects)
- Pupil destinations completing Key Stage 4

Some of those measures (English/maths attainment and pupil destinations) would be viewed as routine by most, and similar iterations have been used in the past. The introduction of the English Baccalaureate (known as EBacc) and Progress 8/Attainment 8, however, marked a substantial shift in the direction of travel. The main contours of these new headline measures are outlined below.

EBacc

Introduced in 2010, the full EBacc comprises at least seven GCSEs across five components:

- English language and literature (pupils must take both)
- Maths
- The sciences (either combined sciences or three single sciences)
- Geography or history
- A language (any ancient or modern foreign language)

Secondary schools are measured on the number of pupils entered for GCSEs in these subjects, and on how well they do on average. While doing the EBacc is not compulsory, the government introduced it as a headline measure in performance tables in 2010 and has repeatedly pushed it as a priority. In its 2015 general election manifesto, it even proposed that this be made a hard requirement for all English schools. It has since dropped this idea but still includes it in performance tables and has made it a target to see 75 per cent of pupils entered for the EBacc combination of GCSEs by September 2022, rising to 90 per cent by 2025. [22]

Progress 8 and Attainment 8

In 2016, Progress 8 was introduced as the main headline performance measure. It reflects the progress that pupils make from the end of primary school to the end of Key Stage 4 across eight "Attainment 8" subjects, including:

1. Maths (double-weighted) and English (double-weighted, if both English language and English literature are sat).
2. Three highest point scores from any other GCSEs that are included in the EBacc measures (in other words, across the sciences, history, geography and languages).
3. Three highest scores from further allowed qualifications – they can be GCSE qualifications

(including EBacc subjects) or approved technical awards.

Progress 8 therefore functions as a value-added measure for certain subjects. Each pupil's Attainment 8 score is compared with the average progress of other pupils in England who achieved similar scores in their end-of-primary-school assessments. A school's Progress 8 score is the average of all its pupils' individual scores; a positive score means that, on average, its pupils have progressed further than peers who were at a similar level when they started secondary school, while a negative score means the opposite is true.

Figure 6 – The Progress 8 "baskets" used to measure school performance

*English is double-weighted only if a pupil takes both language and literature – if they take one of those, it is single-weighted

Reform Four: Academisation

Academies are state-funded schools that are independent of local authority control. Among other things, academies can set their own curricula (subject to sign-off from the DfE) and are not bound by the same hiring restrictions as other state-funded schools. A "free school" is a type of academy that is built from scratch, whereas most academies are former maintained schools that have either converted to academy status voluntarily or have acquired a sponsor to improve their performance.

Most academies form clusters with other academies as part of multi-academy trusts (MATs). Currently, 87 per cent of academies are in these trusts [23] and the trend has been towards larger MATs. [24] In many MATs, most of the decisions that affect schools are made at MAT level – including, for instance, those in relation to finances, employment and curriculum design. [25]

The roots of the academisation programme lie in Labour's education reforms. Initially aimed at turning around poorly performing schools in disadvantaged areas with highly encouraging outcomes, [26] the

programme evolved to meet demand for additional places. By the time Labour left office, 203 academies had been set up and there were plans to further expand the programme. [27]

Conservative-led governments from 2010 have pushed for an accelerated, expansive academies programme by allocating sponsors to underperforming schools, permitting Ofsted-judged "good" and "outstanding" schools to voluntarily convert to academy status, and allowing new academies (free schools) to be set up. [28] The government's ambition is for all schools to be in a strong multi-academy trust by 2030. [29]Currently, 45.7 per cent of all state-funded schools are academies (79.9 per cent of all secondary schools and 38.8 per cent of mainstream primary schools). [30]

There is substantial innovation potential in the academies model, which some schools have utilised to good effect, and we want more schools to be able to enjoy the autonomy conferred by this model. As we explain later in the paper, however, the government's other major education reforms stifle academies' ability to innovate beyond that which helps them meet the government's performance measures. This exposes the paradox at the heart of the government's reform agenda: while it routinely conveys its radicalism as a route to freeing up schools from the clutches of Whitehall, its need to tightly control what they teach through narrow measures means that much of that decentralisation occurs in name only. The next section sets out the impact of the government's reforms in more detail.

How Current Incentives Are Driving the System in the Wrong Direction

The government's post-2010 education reforms have largely truncated the breadth of knowledge and skills pupils derive from their schooling. In this section, we highlight eight ways in which this has manifested itself. In many cases, these reforms may have been aimed at instilling greater rigour within the system, but while it is paramount that we remain uncompromising on high standards, the specific accountability measures chosen by the government did not reflect a realistic view of our changing world.

The National Curriculum is Highly Prescriptive and Inflexible

The government's overhaul of the national curriculum has largely stripped teachers of discretion over what is taught and was widely criticised by educational experts. Professor Andrew Pollard, who was a direct appointment to the government's own panel to lead the curriculum review, described the ensuing proposals as "fatally flawed". His view was that the changes were overly prescriptive and prevented teachers from using their professional judgement – first, because they were excessively detailed and second, because they fixated on linearity even though children learn in different ways and teachers need the flexibility to adapt. [31]

In another damning rejection of the government's plans, 100 academics from a wide range of universities criticised their "endless lists of spellings, facts and rules" that would "not develop children's ability to think, including problem-solving, critical understanding and creativity". They also warned that the plans would inevitably ramp up rote learning; that they took little account of individual interests and capacities, or that children need to relate abstract ideas to their experience, lives and activity; that key skills like speaking and listening had almost disappeared; and that the government had repeatedly ignored expert advice. [32]

While subsequent material contained some changes, the curriculum remained heavily rigid. This was illustrated, for instance, in the government's consultation process regarding its final proposals for most subjects, in which just 10 per cent of respondents reported that the revised content was a material improvement on the government's previous version.

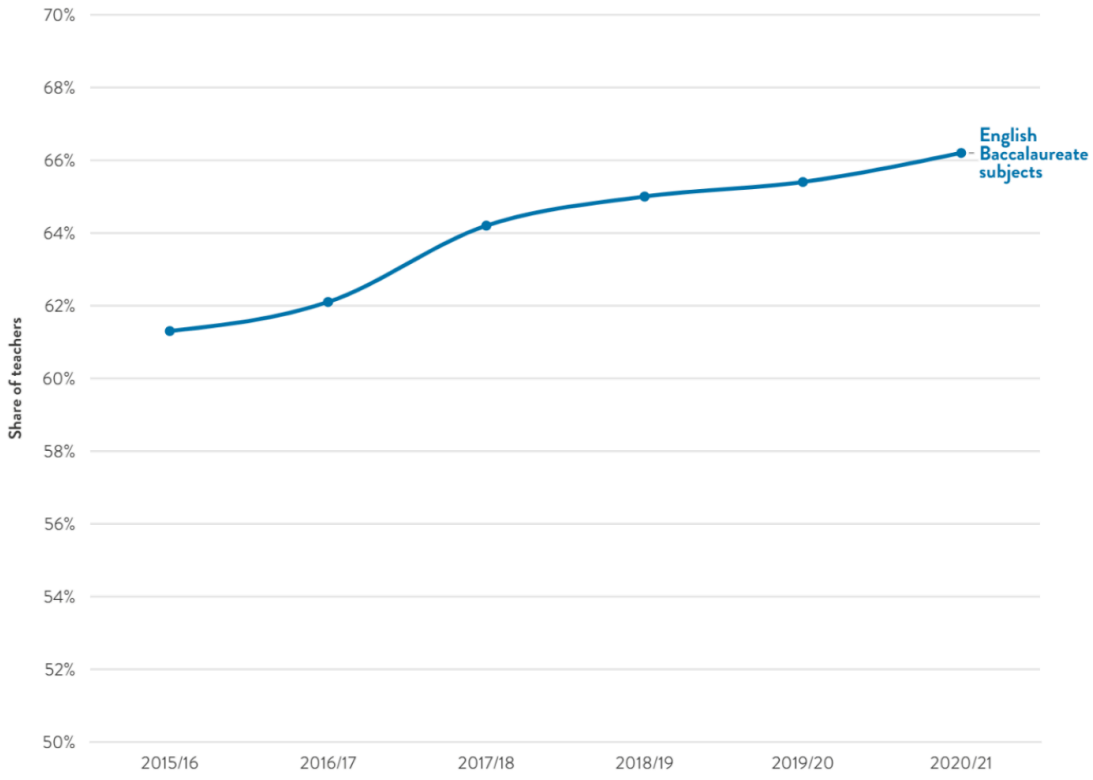
Although academies are not required to follow the new curriculum, in practice most do – not least because Ofsted appears to use the curriculum as a benchmark when it assesses whether a school's curriculum is broad enough [33] and because the curriculum is geared towards complementing the

government's headline performance measures. In short, the narrow and overly prescriptive curriculum provides the de facto teaching architecture for most schools, regardless of their autonomous status.

Schools Have Trimmed Down What They Offer

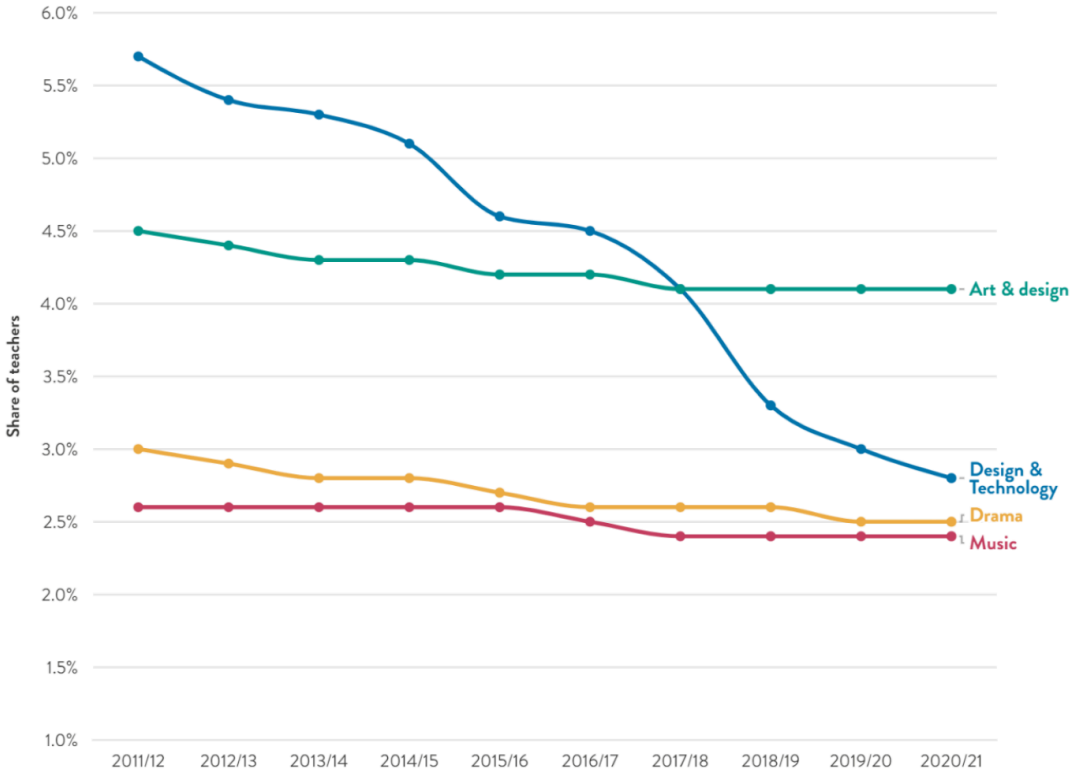
Official teacher workforce figures [34] show that in the last decade, schools have heavily reweighted their resources towards more traditional academic subjects. This is clear to see, for instance, in Figure 7, which shows a sharp rise in the share of school staff who teach EBacc subjects at Key Stage 4. In doing so, as Figure 8 illustrates, they have crowded out other subjects; for instance, the share of all Key Stage 4 teachers who teach music, art and design, drama, and design and technology have all fallen during the same period.

Figure 7 – Share of teachers at Key Stage 4 who teach EBacc subjects is on the rise



Source: TBI analysis of DfE workforce figures

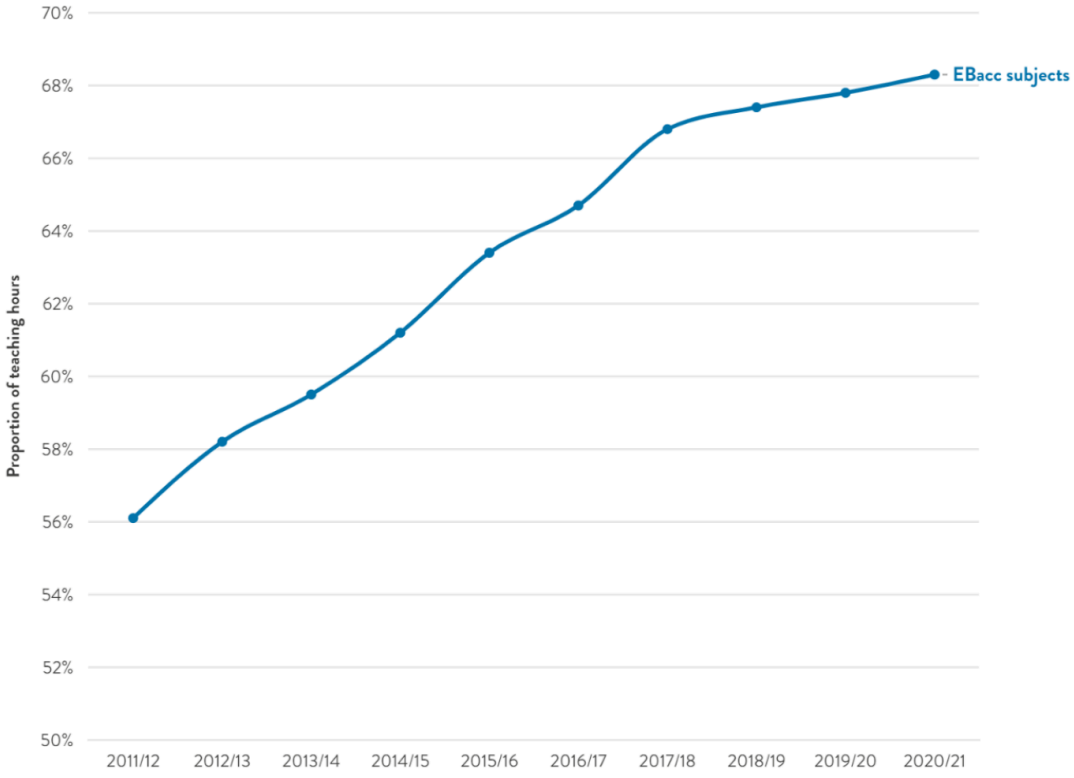
Figure 8 – Share of teachers at Key Stage 4 who teach non-EBacc subjects has been falling



Source: TBI analysis of DfE workforce figures

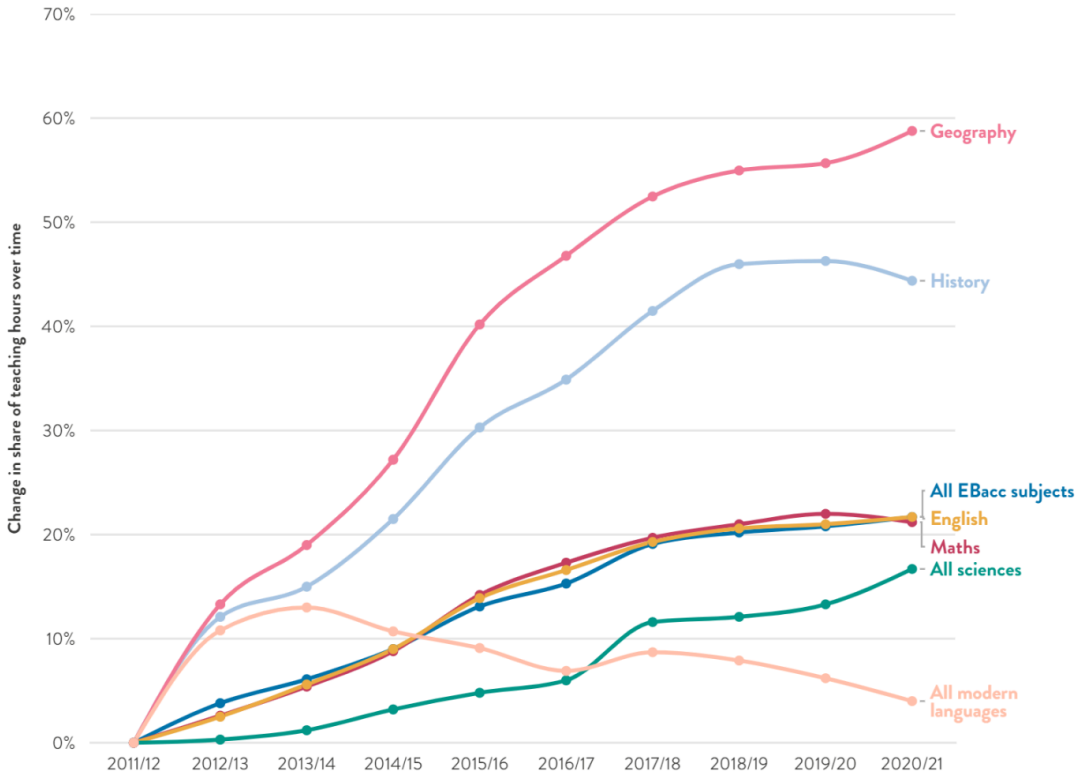
However, it is not just that EBacc teachers comprise an increasingly large share of the teaching workforce. Figure 9 shows that the proportion of teaching time allocated to EBacc subjects has also increased rapidly as a share of all teaching time, while Figure 10 shows the percentage change in the share of overall resources allocated to individual EBacc subjects during the last decade.

Figure 9 – The growing proportion of teaching hours allocated to EBacc subjects at Key Stage 4



Source: TBI analysis of DfE workforce figures

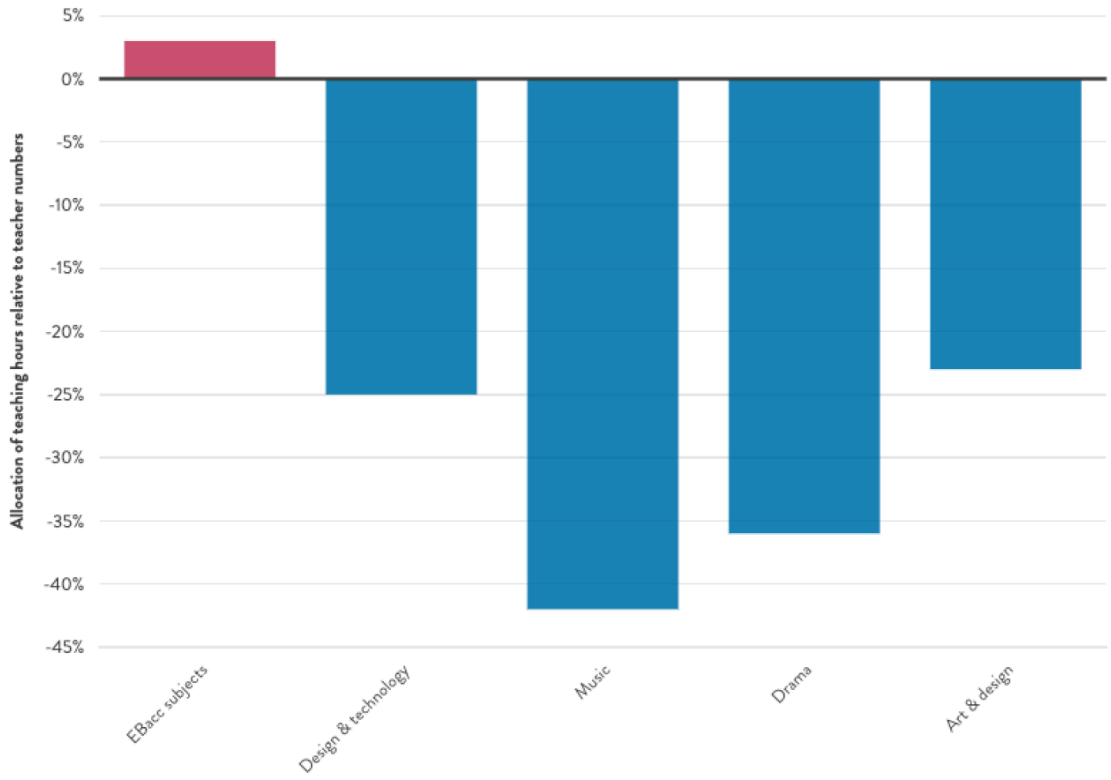
Figure 10 – Changing share of teaching time allocated to EBacc subjects at Key Stage 4, by subject



Source: TBI analysis of DfE workforce figures

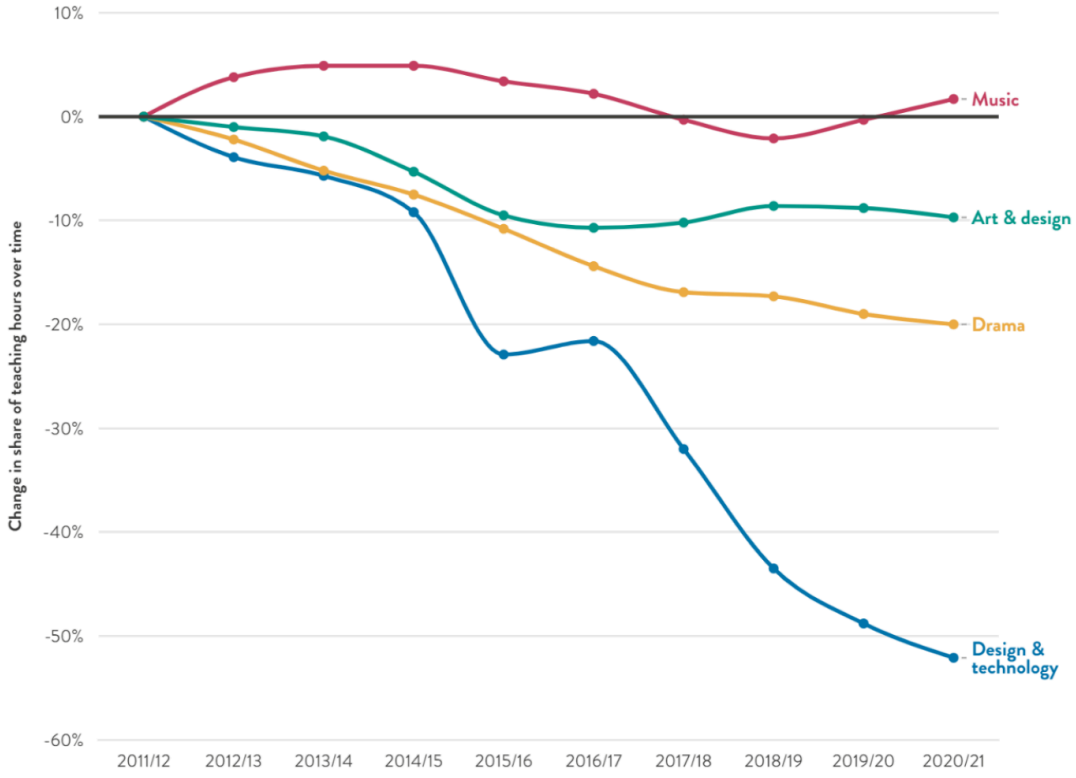
Even where schools offer non-EBacc subjects, they appear to spend less time on them than on EBacc subjects. Figure 11, which calculates the teaching hours allocated to a subject as a share of overall teaching hours and then compares this to the number of teachers for the same subject as a share of the total number of teachers, highlights this point in more depth: non-EBacc subjects are afforded a disproportionately low allocation of hours of teaching resource. Meanwhile, Figure 12 shows that the lean away from resourcing most of these subjects has been getting progressively worse over time.

Figure 11 – Over/under allocation of teaching time relative to teacher numbers at Key Stage 4, by subject



Source: TBI analysis of DfE workforce figures

Figure 12 – Share of teaching time allocated to non-EBacc subjects at Key Stage 4 has mostly dropped



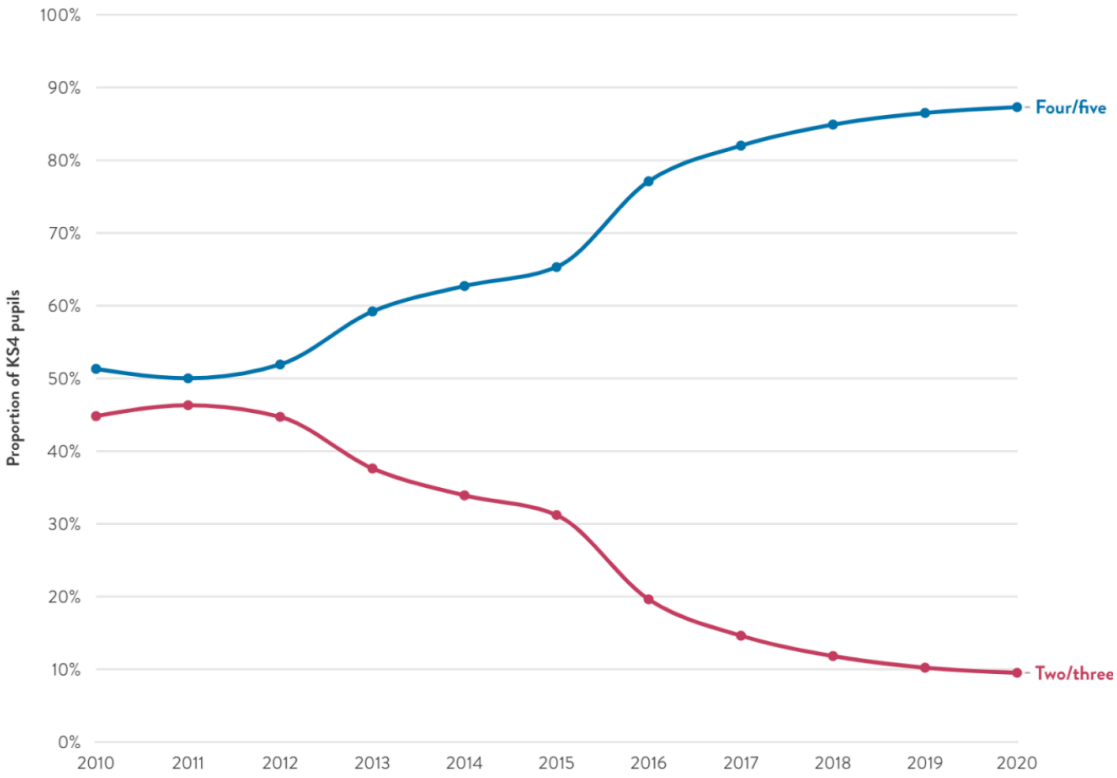
Source: TBI analysis of DfE workforce figures

The overall number of subjects offered by schools also appears to be decreasing. According to a study by the National Foundation for Educational Research, for instance, 55 per cent of senior leaders at state-funded secondary schools reported that the number of GCSEs they taught had decreased over the last few years. [35]

A Growing Share of Subjects Taken by Pupils at Key Stage 4 Are EBacc Subjects

Given the increasing tendency for schools to truncate their offers, and to pivot what they teach towards EBacc subjects, it is perhaps unsurprising that these trends are also echoed on the demand side. Today, an increasingly high proportion of the subjects pupils take at Key Stage 4 are EBacc subjects. As Figure 13 shows, the proportion of pupils who are entered into nearly all, or the full suite, of the components that comprise the EBacc has grown sharply in the last decade. (Note: components are not the same as subjects; to enter the full EBacc, pupils must take at least seven EBacc GCSEs.)

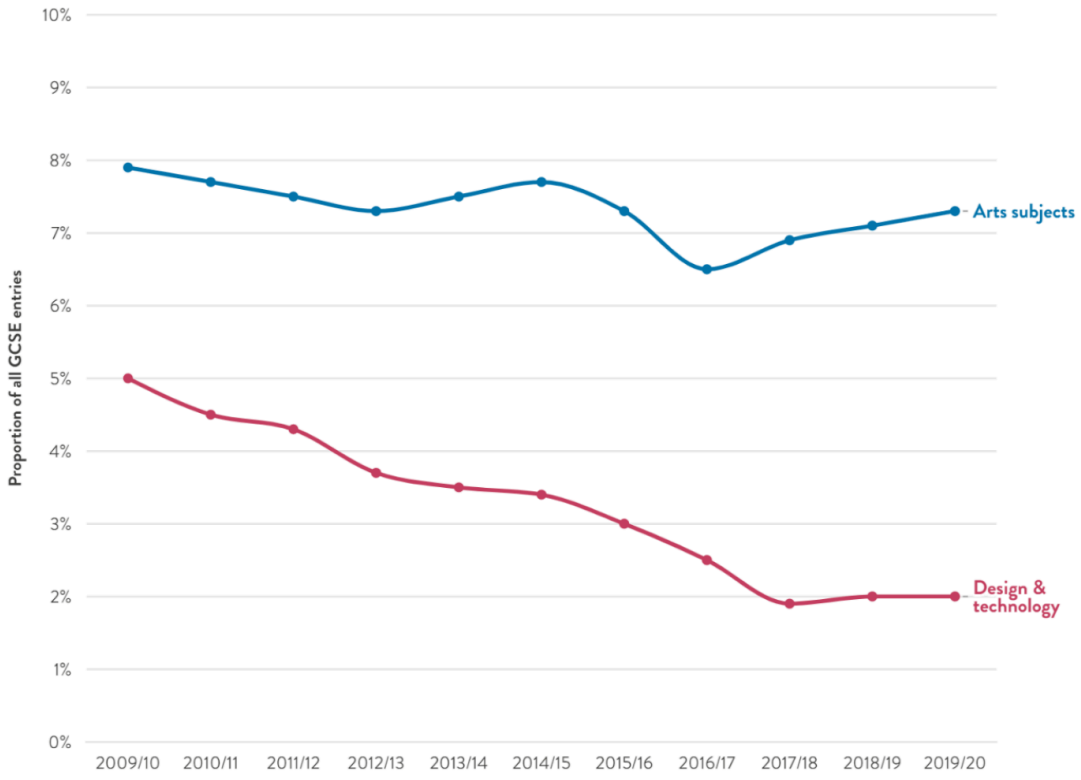
Figure 13 – Changing number of EBacc components entered at Key Stage 4



Source: TBI calculations, DfE Key Stage 4 statistics [36]

Meanwhile, fewer pupils are taking non-EBacc subjects, including, for example, in the arts and in design and technology, as Figure 14 highlights. Paired with the low number of subjects being taken at Key Stage 4, this further underlines how non-EBacc subjects are being crowded out.

Figure 14 – Falling proportion of arts and design & technology GCSE entries



Source: TBI calculations, DfE Key Stage 4 statistics

By Crowding Out Non-EBacc Subjects, the Reforms Damage Pupils' Learning

It is clear, then, that schools are rerouting their resources towards a narrower range of subjects and that pupils too are compressing their focus. If the government's reforms had simply squeezed out poor-quality courses that lacked broader currency, there would be little cause for concern. In some instances, that appears to have been the case, as Baroness Wolf's review of vocational education in 2011 found. [37]

However, the government's reforms have also squeezed out many reputable subjects. As we have illustrated, one of the most conspicuous areas in which this has occurred is the arts, which is damaging to pupils' prospects in the labour market for several reasons.

First, the arts confer a wide range of important non-cognitive skills which, as we explain elsewhere in this paper, are becoming more valuable in an increasingly tech-infused labour market. According to one government-commissioned meta-analysis, engaging regularly with structured arts activities increased young people's test scores for transferable skills (including communication, social skills and creativity) by ten to 17 per cent above that of non-participants, all other things being equal. [38] Other studies, too, find a strong link between structured arts activities and developing confidence and pro-social attitudes,

especially among socially disadvantaged young people. [39] And the Music in Secondary Schools Trust, which gives disadvantaged pupils the chance to learn classical instruments including through its Key Stage 3 Andrew Lloyd Webber Programme, has recorded improvements in participating pupils' self-efficacy and resilience.

Arts subjects also improve cognitive skills, which are valued highly by employers too. The same government-commissioned meta-analysis referred to above found that participation in structured arts activities improved young people's cognitive abilities test scores by, on average, 16 to 19 per cent above that of non-participants (all other things being equal). [40] Other studies have found a strong and significant improvement in cognitive test scores, including in relation to non-verbal IQ, numeracy and spatial recognition. [41]

There is even evidence that taking arts subjects improves academic attainment. This was borne out, for instance, in an evaluation of New Labour's "Creative Partnerships" [42], a creative learning programme that broadened access to the arts. The evaluation found that, at Key Stage 4, for four measures (total GCSE point score, best eight GCSEs point score, English and science), the progress of pupils who took part in the programme was greater – to a level that was statistically significant – than that of similar pupils nationally. On average, those who attended Creative Partnerships activities made the equivalent of 2.5 grades better progress in GCSEs than similar young people in other schools. [43] Meanwhile, industry figures such as the inventor Sir James Dyson have described design qualifications as vital for success in industry and criticised their downgrading in the curriculum. [44]

The EBacc Is Not a Silver Bullet for Social Mobility

It is clear from the above analysis that the government's reforms are muscling out subjects that would otherwise give pupils valuable opportunities to develop crucial skills and that those subjects are not intrinsically less valuable than those they actively promote.

The government justifies its drive to get more pupils doing the EBacc on social mobility grounds. [45] But its logic is unconvincing. The reason why more affluent pupils tend to get the best jobs is not really because they do a core of traditional academic subjects; it also has much to do with the social capital they develop and the non-academic skills they build by receiving a broader, richer education.

For instance, a study by the Social Market Foundation found that, by age 42, privately educated individuals earn £193,700 more on average over their careers than their state-educated peers – and crucially, even when controlling for background and prior educational attainment, the difference was still almost £58,000. [46]

Other research shows that, even when they perform as well at university, less affluent pupils are less likely to enter the professions. [47] And when they do, they are less likely to progress as quickly: for instance, according to one analysis, three and a half years after graduation, private-school graduates in such jobs earn £4,500 more than their state-school counterparts, while only half of the difference could be explained by variables such as the higher education institutions they attended or prior academic achievement. [48]

There are many ways in which private schools cement advantage for their pupils over, not least superior resources. But a key factor also appears to be their much greater leeway over the curriculum and its assessment. For example, private schools are far more likely to offer the International Baccalaureate (IB): of the 92 schools in England teaching the IB diploma, 71 are private, alongside several state grammars. This is highly inequitable, as pupils who do the IB in place of conventional A-levels are three times more likely than comparable students who do A-levels to get into top-20 universities, even when controlling for background and prior attainment. [49]

Other private schools that do not offer the IB are also considering breaking ranks, for example by replacing a chunk of GCSEs with creative subjects. The Headmasters' and Headmistresses' Conference, representing private-school heads, met last year to consider alternatives to the GCSE-dominated curriculum in the face of widespread dissatisfaction with the status quo. Some top private schools are already voting with their feet. St Paul's Girls' School offers a core of seven GCSEs, supplemented by a range of non-core alternatives, with an emphasis on technology and entrepreneurship. Bedales, another leading private school, does the same but with a core of just five GCSE subjects. [50]

By crowding out opportunities in school to develop skills that would also help them compete with their peers, the government's reforms risk blunting, not improving, social mobility.

End-of-Course Exams Dominate Assessment and Promote Narrow Pedagogies

The proportion of non-exam assessment has been stripped back entirely in many subjects, especially in the EBacc subjects that pupils have been nudged towards. In these subjects, forms of non-exam assessment are now almost non-existent, as Figure 15 demonstrates.

Figure 15 – Impact of the government's reforms on forms of assessment in EBacc subjects

	Non-exam assessment	
Subject	**Legacy GCSEs**	**Reformed GCSEs**
English language	40%	None
English literature	25%	None
Maths	None	None
Biology	25%	None
Chemistry	25%	None
Physics	25%	None
Combined science	None	None
Computer science	20%	20%

Modern languages	60%	25%
Geography	25%	None
History	25%	None

Source: Ofqual [51]

One of the consequences of these reforms is that pupils are not being tested on a broad range of aptitudes, and certainly not the ones gaining currency in the jobs market, including many complex cognitive and non-cognitive skills. Broadly speaking, this manifests itself in two ways.

First, a relentless focus on one-off, closed-book examinations at the end of Key Stage 4 can only allow us to measure so many skills. For instance, as comprehensive OECD testing has demonstrated, social skills are not an automatic by-product of academic skills, and proficiency in individual problem-solving only partially predicts effective collaborative problem-solving. [52] Therefore, a narrow focus on individual examinations in traditional academic subjects alone is unlikely to help pupils develop a sufficiently broad range of skills.

This point is well understood by England's top public schools. As the then-headmaster of Eton explained in 2014, [53] the examination system has changed little since the Victorian era and "obliges students to sit alone at their desks in preparation for a world in which, for much of the time, they will need to work collaboratively". Employers agreed. John Cridland, the director general of the CBI, argued in 2015 that schools were becoming "exam factories" and failing to produce "well-rounded" pupils equipped to enter the labour market. [54]

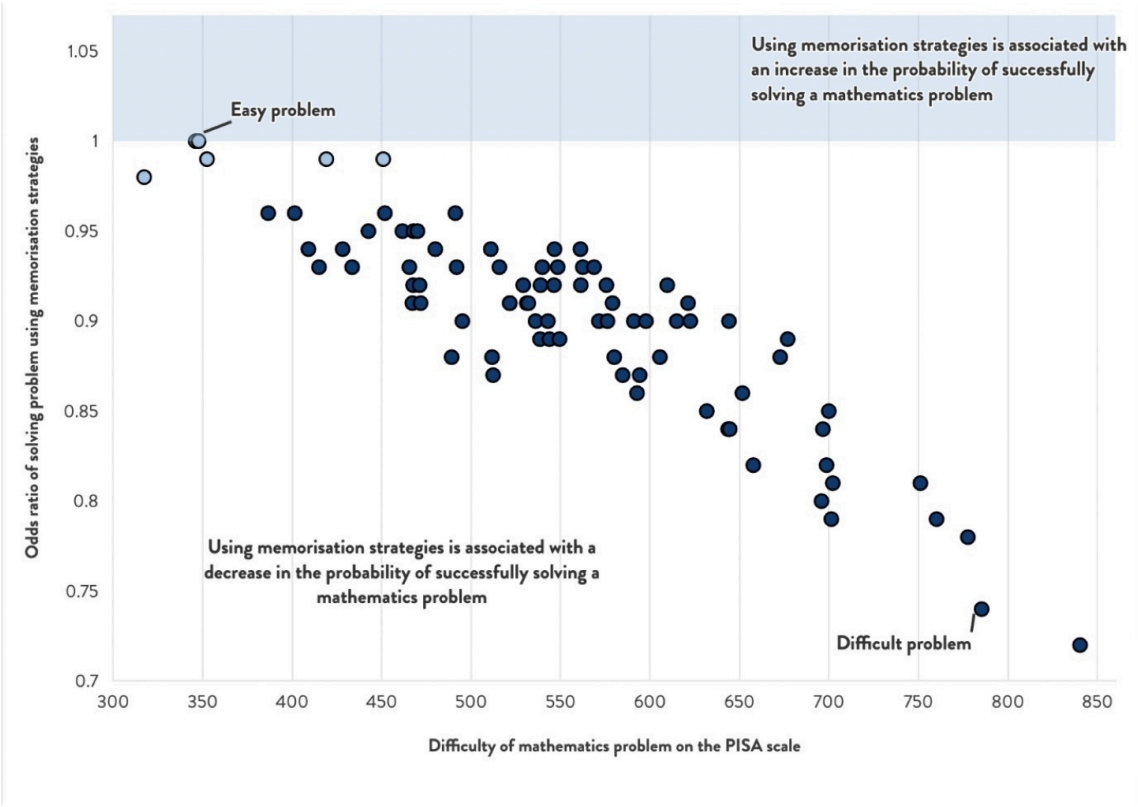
Meanwhile, several of the world's top performers have already decided that high-stakes examinations should not dominate assessment at 16, and in some cases have eschewed them altogether. For instance, South Korea's highly regarded education system uses teacher assessments, rather than external assessments, to determine progression from secondary schooling to post-16 education (external assessments are used instead to inform teaching practices). And high-achiever Finland has no externally examined assessments at all at this age.

Second, the current system invites narrow pedagogical approaches. For instance, Ofsted has cited evidence from its own inspections suggesting that many schools are "teaching-to-the-test". Answering to the Public Accounts Committee in 2018, Ofsted's chief inspector reported that:

"Even for tested subjects, we are seeing schools eliminating from their programmes of study the parts of the curriculum that are not readily tested in the examinations. Some schools are teaching disproportionately exam technique rather than subject content or are devoting excessive time to revision or are relying on exam-oriented interventions. We have heard of schools tracking assessment objectives from GCSEs back to Year 7 and starting studying specification 'set-texts' years in advance." [55]

More narrow forms of teaching geared towards passing traditional exams limit the time pupils can spend on developing other, more complex skills. For instance, according to the OECD, pedagogies that draw heavily on memorisation are increasingly less useful as tasks become more complex and include more non-routine analytical skills, the latter of which are projected to be more important as digitisation progresses. [56] Figure 16 outlines further details.

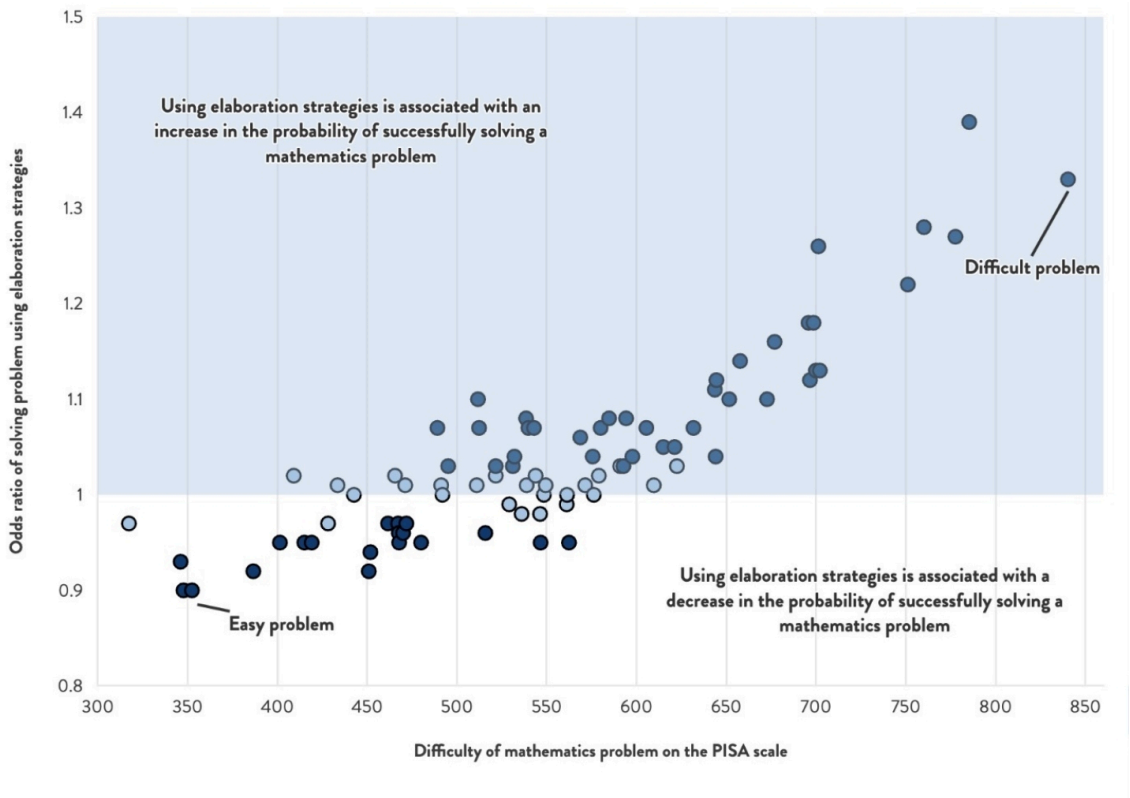
Figure 16 – Memorisation is less useful as tasks become more complex



Source: OECD

Conversely, pedagogies built on "elaboration" (thinking creatively about new situations and applying knowledge to new contexts) are more likely to help students complete more demanding tasks. [57] Figure 17 illustrates this point in more depth.

Figure 17 – How elaboration (thinking creatively and transferring knowledge critically) becomes more useful as tasks become more complex



Source: OECD

Even the narrow range of aptitudes that are tested through the current examinations system are often not assessed accurately, which means it is hard to gain a reliable impression of an individual's abilities even here. There is, for instance, a very strong margin of error when it comes to awarding grades: on average, the probability of an examiner awarding the same grade in maths as that which would have been given by the Principal Examiner is 96 per cent; however, for history, English language and English literature, the average figures are between 55 per cent to 60 per cent. [58]

The "comparable-outcomes model" of determining grade boundaries presents further challenges. The starting point under this system is that cohorts should achieve the same standards as those attained by their predecessors. Boundaries can be adjusted based on other evidence but in practice, around a third of GCSEs are typically graded at under 4 each year – grades that are widely seen as commensurate with failing. [59] While this model is designed to prevent grade inflation for more established qualifications (and dips in performance following new ones), its framing is very negative and, paired with the fact that it

underpins an exam system that measures a narrow range of skills, gives many people the impression they have little to offer. In this context, it is perhaps unsurprising that so many adults remain disengaged with learning as they progress into the labour market; for instance, in the UK, over seven million people aged 19–64 are still not qualified even to level 2 (which includes good GCSE passes). [60]

More Than Half of Schools are Starting GCSEs Early

Key Stage 4 is supposed to cover Years 10 and 11 and mark the start and end of GCSEs or other equivalent qualifications. In the three years prior to that, secondary school pupils (Years 7 to 9) should be learning a broader curriculum (and in the case of local authority schools, the national curriculum as set out for Key Stage 3). This is so that pupils can receive a more rounded education before focusing their learning on a narrower suite of subjects when they begin their GCSEs or equivalent qualifications.

However, due to the pressure placed on schools to meet the government's narrow range of performance measures, more than half of schools are starting GCSEs before Key Stage 3 has even finished. According to one study by the National Foundation for Educational Research, as of 2019, 56 per cent of schools had started teaching GCSEs for most or all subjects in Year 9 (some even begin doing this as early as Year 7). [61]

Ofsted's own research programme into how curricula are implemented in schools found that, in a sample of 171 schools, around a quarter were asking pupils to choose GCSE options at the end of Year 8. It also pointed out that, because GCSE tests are designed to cover two years' worth of content, "it is hard to see how taking longer than two years could expose pupils to more knowledge and not more test preparation". [62]

In 2019, Ofsted changed its inspection framework to focus more on the breadth of the curriculum being offered and less on performance data. These changes are welcome, although there are still some important omissions including, for example, a lack of focus on speaking and listening in parts of the inspection handbook. [63]And there are some tentative signs that some schools have moderated some of the blunter forms of crowding out they were previously practising. [64]

It is, however, too early to assess the extent to which these changes will nudge behaviour across the system, not least because Covid brought a halt to school inspections shortly after the changes came into operation. In any case, even if Ofsted does succeed in tempering encroachments into the curriculum, there are likely to be limits to the progress it can make given the highly formative role performance measures play. Ultimately, even if the measures do end up carrying some weight, one part of the system would still be fighting the other.

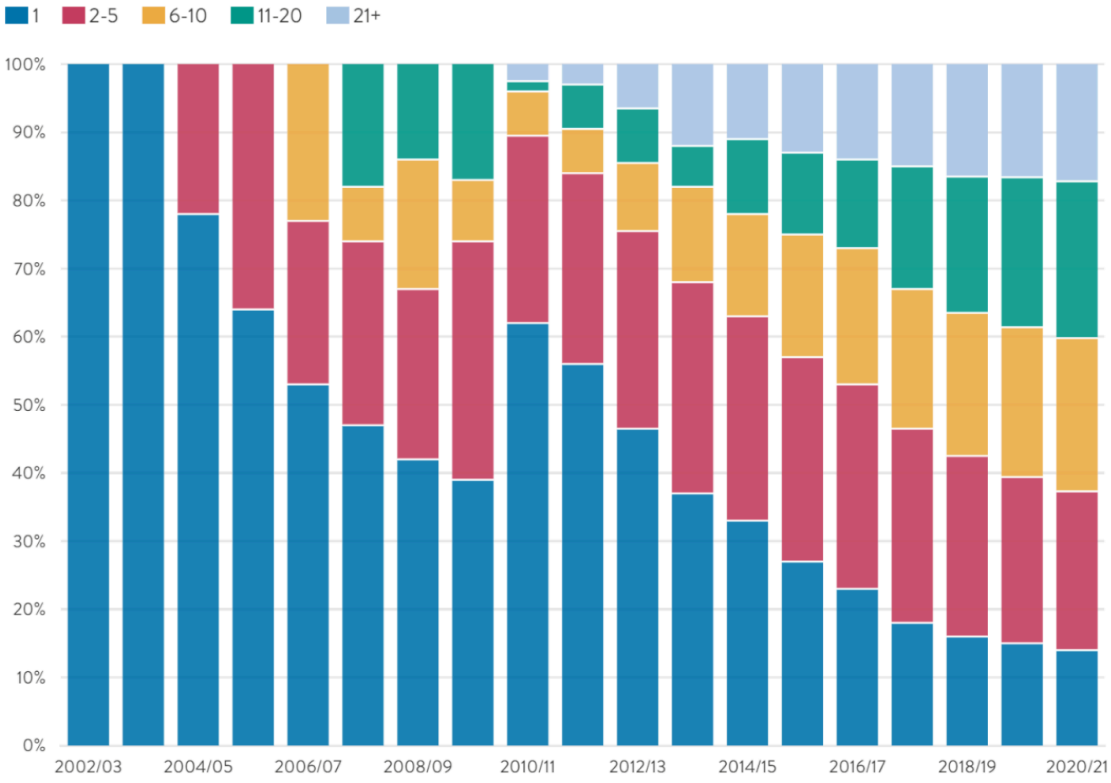
The Academisation Programme's Innovative Potential Has Been Strangled

Some schools have used the relative autonomy afforded by the academisation model to introduce new ideas and practices. But it is often constrained innovation, as schools must ultimately still meet the government's narrow suite of performance measures. This is clear to see, for instance, in the trends outlined in Figures 7 to 12, which show that secondary schools have reacted to the government's measures by truncating their offers. Given that eight in ten state-funded secondary schools are now academies, [65] we can be confident that most secondary academies are treading such a path.

Where academies have innovated beyond what is necessary to meet performance measures – for instance, by carving out a more prominent role for certain skills, like oracy, in their curricula, or by introducing more cross-disciplinary learning – their room for manoeuvre has been limited. For instance, at School 21, pupils spend half a day each week on projects aimed at building more complex skills (experiences that are highly valued by employers), but they get no formal recognition for this in headline performance measures and have had to drop a GCSE to make room for it.

While greater autonomy is supposed to allow academies to be more responsive to local stakeholders, including parents, as Figure 18 shows, multi-academy trusts (MATs) are getting larger. The sprawling of these entities across larger geographical areas makes it harder for parents to have a voice in their local schools and belies the notion of the academisation programme as a conduit for improving local agency.

Figure 18 – Proportion of academies in trusts, by size of trust



Source: Institute for Government

Even free schools have fallen short of achieving their innovative potential. These schools – essentially brand-new academies – arguably had more creative promise than other academies because they could develop a new ethos from scratch. The idea was to encourage a diverse range of parties, including parents and teachers, to set up new schools and imbue them with fresh ideas. However, while some excellent examples have emerged, the innovation energy that was supposed to accompany the rise of free schools more generally has often not materialised. For instance, a report by the Sutton Trust found that eight years after the free-school programme's inception, just one-third of the 265 that had been formed could demonstrate a novel approach to their curriculum or ethos. [66] Further still, most of these were opened by existing MATs, which in many cases merely extended the reach of existing modes of learning rather than bring new ones into the fold. [67] And where schools have developed novel curricula, the government's headline performance metrics do not always allow them to be judged on appropriate terms. For instance, university technical colleges and studio schools – types of free schools that were established specifically to offer alternative curricula geared more towards technical and applied learning – are nonetheless judged by the same metrics as other schools.

Fear of Ofsted Inspection Failure Restricts Innovation

The other major component of England's accountability system is the regular school inspections overseen by Ofsted. A non-ministerial department, Ofsted is formally independent from the Department for Education, and carries out visits to schools (alongside other organisations) to assess their performance against the Education Inspection Framework. The individual school reports, which include an overall judgement on a four-grade scale of "outstanding", "good", "requires improvement" or "inadequate", are published online.

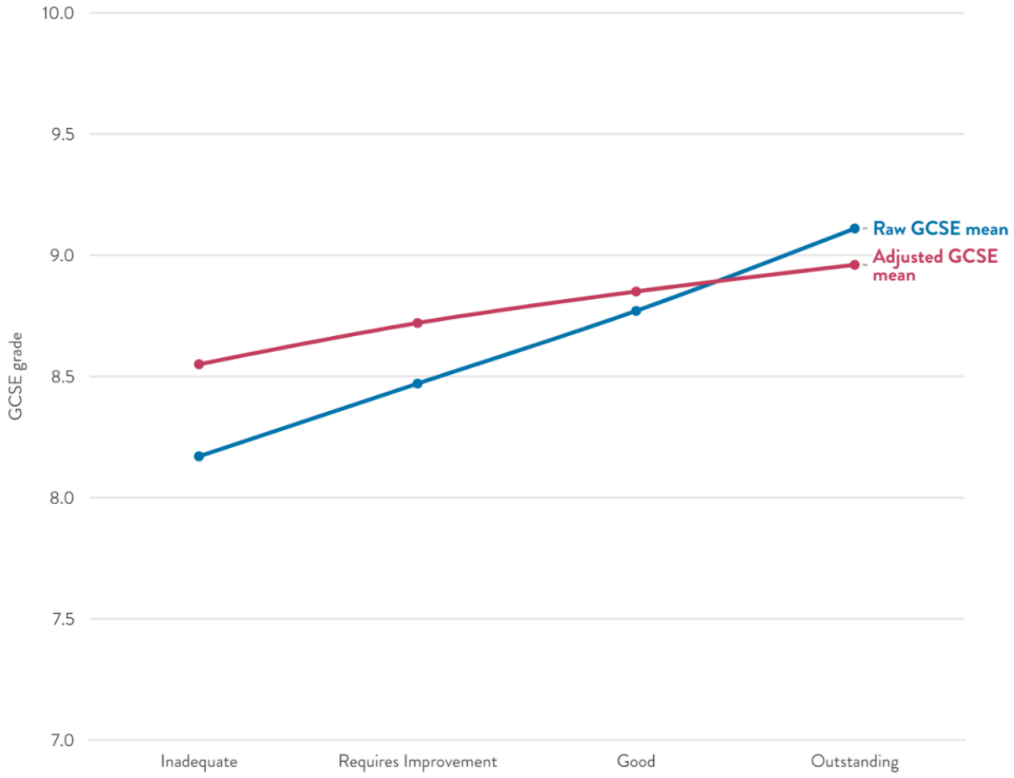
At the heart of the current regime is the assumption that the four grades provide a granular look at the difference between schools – and that they can act as a resource for parents to inform their choice of schools. In practice, the system perpetuates "broad-brush" judgements that do not always take school context into account; their use contributes to a further narrowing of pedagogical practice and, perhaps most importantly, their role in parental choice is rather limited.

It is worth noting that Ofsted's ability to identify genuinely failing schools has made a positive contribution to raising the floor on standards. This is because an "inadequate" rating leads to severe consequences for a school. A maintained school which is given that bottom grade is subject to mandatory conversion into an academy, while academies and free schools run the risk of having their funding agreement terminated or being re-brokered into a different trust.

Evidence suggests that in the aftermath of failing an Ofsted inspection, schools show significant and lasting improvements in pupil performance over time. Compared with schools that narrowly avoid an "inadequate" rating, these are equivalent to a one-grade improvement in one or two GCSEs for every student. [68] Schools that receive that bottom grade are subject to re-inspection within three years, and over time most move into other categories.

The contribution of the full four-grade system to school performance itself is less clear. Analysis of a sample from the National Pupil Database found that differences in Ofsted ratings of secondary schools had very little impact on individual students' outcomes. [69] The difference between each Ofsted grade amounted to a third of a grade, or approximately a full grade between "inadequate" and "outstanding" schools. Once adjusted for family background and primary-school performance, that gap was reduced to less than half a grade – or 1 per cent of the total variance (see Figure 19). At the same time, researchers found next to no difference between schools with different Ofsted grades when it came to 14 self-reported measures of wellbeing and engagement. Students in "inadequate" schools reported similar levels of happiness, bullying, future aspirations or life satisfaction in relation to those in "good" and "outstanding" schools. This suggests that the current inspection framework does not reliably capture either differences in academic performance or the school environment, including the pupils' own experience of it.

Figure 19 – Relationship between Ofsted judgements of schools and GCSE grades achieved



Source: The Journal of Child Psychology

The National Audit Office has concluded that while Ofsted provided valuable independent assurance about schools' effectiveness, it could not demonstrate value for money in the inspection regime that was, in practice, influenced by the funding decisions made by DfE and the Treasury. [70]

This lack of full independence can be seen in the role of the national curriculum in the most recent Education Inspection Framework. Maintained schools' compliance with the curriculum is monitored during Ofsted inspections as it is a statutory requirement. However, as mentioned previously, Ofsted also appears to use the national curriculum as a benchmark for academies and free schools for which no such requirement exists. Thus, an "outstanding" grade is contingent on a school's acceptance of the government's narrow view of the curriculum, stifling the innovation within the academy sector that its freedom from statutory curriculum requirements is designed to encourage.

Defenders of the current system argue that it plays a crucial role in providing parents with useful information to inform their choice of school, but its role may be exaggerated. Ofsted's own research from 2017, cited by the National Audit Office, showed that 50 per cent of parents named inspection results as the top reason for their choice (second to proximity to home at 61 per cent). Given the weight placed on the role of these reports in school choice, even this internal figure is relatively low. The latest

annual parental survey for 2021 showed that Ofsted judgements or reports were not a decisive factor for two-thirds of parents when choosing a school. [71]

In fact, many parents do not consult Ofsted reports at all: a 2021 poll suggested that this is the case for as many as two-thirds of parents when choosing a school. [72] The poll also pointed to significant disparities between different groups of parents in terms of their use of Ofsted reports: the number of parents in A, B and C1 social grades that look at them is almost twice that of parents in C2, D and E grades (41 per cent vs 24 per cent). It would appear that parents value academic performance more than Ofsted judgements. [73]

At the same time, the very public nature of Ofsted inspection results makes school inspections an incredibly high-stakes exercise for school management and staff. "Inadequate" judgements are usually covered in the local, and sometimes national, press; grade changes for previously "outstanding" schools receive a similar treatment. Schools rated "inadequate" experience a statistically significant increase in teacher turnover and headteacher retention is also much lower following such an inspection outcome. [74]

In the latest survey of teachers conducted by Ofsted, 84 per cent of teachers thought the inspection regime introduced unacceptable levels of burden, while only 23 per cent agreed that inspections helped individual schools improve. [75] And a recent poll of 5,000 teachers for the Times Education Commission found that fewer than 15 per cent would rate Ofsted "outstanding" or "good", with a full 38 per cent giving it the grade of "inadequate". [76]

Taken together, this means that Ofsted inspections in their current form represent a form of high-stakes assessment, largely based on a snapshot in time (the school environment on the days of the inspection). They often miss essential context, going so far as to penalise schools with more disadvantaged student intakes. While an "inadequate" judgement can often spur improvement, leading to a reduction in the number of such schools over the last decade, the finer-grained distinctions of the four-grade system are effectively meaningless, with the difference between grades vanishingly small for either academic performance or student engagement. Instead, it contributes to an atmosphere of fear and distrust, raising the risks of innovation within the system and the narrowing of the curriculum.

Conclusion and Policy Recommendations

The education reforms of the last decade have been some of the most radical in living memory. But they took the wrong turn at the wrong time.

While the world was changing, they doubled down on the basics – a strategy that might have made more sense in the past but no longer befits the needs of our modern world. In doing so, they have truncated the experiences that state pupils are getting to an alarming level, just at a time when they should be doing precisely the opposite.

Clearly, pupils need to be able to contextualise what they learn and that means reaching a certain critical mass of knowledge. But by relentlessly pursuing a narrow field of subjects, encouraging teaching-to-the-test and assessing a small range of aptitudes, we are crowding out other crucial learning from pupils' education.

All the while, our changing labour market will ask increasingly much more of them. More and more, high value in the jobs market lies not in reproducing knowledge, but in being able to synthesise various sources of information, extrapolate from what we know and apply this creatively to novel situations.

With Covid-19 having severely disrupted the education of a generation of pupils, we can ill-afford to delay reforming a system that is fundamentally out of sync with the needs of our economy and society. In doing so, we must not lose sight of the need for rigour, disciplined learning and high expectations, but we must ensure that we achieve these goals in a way that is more realistically in tune with the world of today. Addressing these issues will be challenging and requires a radical but sequential approach. We recommend the following reforms, beginning with the most immediately deliverable in each case.

Pupil Assessment and School Performance

Phase One

Schools have significantly trimmed what they teach and the subjects pupils are taking are drawn increasingly from a small range of traditional academic subjects dubbed the "EBacc". By crowding out non-EBacc subjects, the government's reforms damage learning and stifle efforts to improve social mobility. A realignment of performance measures is therefore required to support and encourage a broader approach.

The government should start by scrapping the EBacc and by reforming Progress 8. The concept that underpins Progress 8 is sound: it is a value-added measure of performance in context and therefore

rewards schools for developing all pupils (including those who started secondary school with low attainment) and not just those on the borderline of a success measure as often used to be the case. However, in its current configuration, it still leans too strongly towards more traditional EBacc subjects. It should be refined so that schools can still achieve good Progress 8 scores when including more non-EBacc GCSEs.

Recommendation 1: Scrap the EBacc. Retain Progress 8 as a performance measure but make it more flexible to accommodate other valuable, non-EBacc GCSEs.

Phase Two

For workers to thrive and citizens to flourish in increasingly complex and diverse societies, they will need a far wider range of skills than the current system inculcates. Rather than be prodded into delivering a tight and rigid notion of education, teachers need to be empowered to focus more on developing complex skills like collaboration, communication, critical thinking and creativity. A broader accountability system, wrapping these skills into the fold, would give schools a clear license to do just that.

Alternative performance measures, including collaborative problem-solving and creativity in the first instance, should be introduced. Until recently these have been hard to measure, but the OECD has shown that it is now possible to do so. In 2015, it published a set of metrics for measuring collaborative problem-solving. These elements underpin the skills that drive effective workplace collaboration – for example, communicating, managing conflict, organising a team, building consensus and managing progress. Beginning this year, the OECD will also introduce an equally sophisticated method of measuring creative thinking, which will examine students' ability to generate diverse and original ideas, and to evaluate and improve their ideas.

To further refine, and improve the utility of, these metrics, policymakers should in time incorporate a value-added element to them. Progress 8 provides a precedent for this and the logic that underpins it should be exported to "4Cs" measures. In this way, schools would be judged not only on a pupil's abilities in these areas towards the end of their secondary education, but also on the extent to which they had progressed relative to their starting point when enrolling.

Recommendation 2: Introduce elements of the "4Cs" (collaboration, communication, critical thinking and creativity) as an accountability measure for schools, based on OECD tests. In time, further develop this measure by incorporating a value-added component to it, so that progress is also measured in context.

Phase Three

Summative, closed-book exams at the end of five years of secondary learning are on their own a very poor way of measuring talent: they focus on a narrow range of skills, which they do not always do very accurately, and they promote teaching-to-the-test instead of pedagogies aimed at developing broader skills. In addition, while high-stakes exams at 16 might have made sense when that was the school-leaving age, this is no longer the case.

While exams have a role to play in assessing certain skills, they should sit alongside other forms of assessment. The International Baccalaureate is robust and highly respected, has been strongly linked to good outcomes and has been adopted widely across the globe, including in some of England's top private and grammar schools. Policymakers should build a new qualification that draws on and further refines the baccalaureate. It should place a strong emphasis on multi-modal assessment to gauge pupils' attainment in foundational subjects; their abilities in other applied, interdisciplinary areas including by undertaking a project; and their aptitudes across the "4Cs".

As part of a new system of assessment, policymakers should scrap GCSEs and introduce a series of non-binding assessments that could be used both to inform pupils' own choices, but also to support suitable accountability measures.

By blending summative and formative assessment, the new system would circumvent the limits of our current approach, which fails to reflect a full range of pupils' achievements and aptitudes. And by capturing progress over time rather than a snapshot, it would empower students to take more control over their learning.

As technology continues to facilitate ever-more accurate means of formative assessment, the potential exists to introduce a much wider range of assessment techniques. This includes digital portfolios that grow over time, comparative assessments and peer-grading, project-based learning outcomes, and other approaches that more fully capture the learners' journeys and create new opportunities for pedagogic innovation.

Digital technology also allows us to automate much of the process of assessment and data capture. This saves teachers time, allowing them to focus on providing individualised support to pupils. Properly structured data allows for comparisons to be made between different types of assessments without compromising reliability or validity. The national data infrastructure and learner ID described in Recommendation 5 would ensure interoperability for assessments carried out through different methods and digital platforms and make it easier to make value-added judgements.

Recommendation 3: Replace the current system of assessment, including GCSEs and A-levels, with a new qualification at 18 – this would draw on and refine the principles that underpin the International

Baccalaureate and would include multiple, rigorous forms of continuous assessment between 16 and 18. Retain a series of low-stakes assessments for pupils at the end of secondary schooling (16) to help inform pupil choice and hold schools to account.

School Inspection

Phase One

For all its shortcomings, the Ofsted inspection regime plays an important role in identifying failing schools, particularly where there are serious issues with safeguarding or management. It has contributed to an overall improvement of the "floor" of standards, with fewer "inadequate" schools, and a failed Ofsted inspection is often followed by significant, lasting improvements to performance.

However, the current inspection model and its lack of contextual awareness, combined with the negative impact on staff morale and retention, all point to a need for change. The relationship between Ofsted and the school sector is at a breaking point and urgently requires a full reset without undermining the progress made on standards. Key to this is the internal culture of Ofsted, which must change from enforcing a narrow and overly competitive approach to one that is collaborative and supportive.

Ofsted requires a new strategy and new approach to staffing and training, with inspectors acting as guardians of standards and enablers of improvement rather than enforcers of specific teaching methods. Their focus should shift to safeguarding (including safe classrooms free from bullying and other forms of harm), effective leadership and overall school environment.

To achieve this, step one must be to fix the grading system. Moving to a simple "pass/fail" system would help deflate many of the tensions around Ofsted. There must be a clear definition of what it means to "fail", which would mean either clear and obvious safeguarding issues that put children at risk of harm, or a persistent failure to improve poor performance results over three years, which would indicate a lack of effective school leadership. The objective should be to eradicate "failed" schools altogether.

For all other schools, distinctions between grades should be removed. Inspection reports should continue to be publicly available for parents to consult, but grade judgments should be replaced by a one-page summary of findings. This should include qualitative statements highlighting what the school does well and what it could do better, with a light touch visual "traffic light" system to aid understanding (green for no concerns, amber for minor concerns and red, to be used sparingly, for more significant remarks). This would provide a richer picture of the school's strengths and opportunities for improvement, with a narrative that helps put performance metrics in context and inform parental choice.

Recommendation 4: Change Ofsted's strategy and approach to staffing to focus on safeguarding (including safe classrooms free from bullying and other forms of harm) and quality of school

management instead of pedagogy and the curriculum. Replace the grading system – where already 86 per cent of schools are now good or outstanding – with a more detailed one-page summary of strengths and weaknesses, identifying what they are so that parents can see a more effective analysis of school performance. Retain a pass/fail assessment for schools which require urgent remedial measures.

Phase Two

To create the conditions for a robust and responsive accountability system, based on a set of value-added measures, current data-collection practices and attitudes to the use of data need to be overhauled. Masses of data are collected on students, which they and their parents have little access to.

The government should invest in creating a national digital infrastructure for education, starting with a student-owned learner ID and digital profile. This should be underpinned by a strong regulatory framework that guarantees access to personal data and rights of redress; secure interoperability mechanisms for the sharing and collection of rich quantitative and qualitative data; and a user-facing tool to easily view linked data and grant or revoke access to parts of the record as needed (similar to the learner profile proposed by Rethinking Assessment and backed by the Times Education Commission). [77] This would put learners in control of their data and allow them to make better use of it, while ensuring that school leavers have a richer image of their achievement than simply a set of exam results.

To ensure the independence, integrity and transparency of the data-collection process and to enable a more sophisticated approach to school improvement, the government should select a designated data body for the school sector, with a mandate and funding to deliver and maintain such an infrastructure. Like the Higher Education Statistics Agency, the current designated data body for the higher education sector, this organisation would be independent from the government but work closely with the regulator – in this case Ofsted – to securely share appropriate data and improve its use. In consultation with schools, it should also develop an expanded set of categories for the "traffic light" system in Recommendation 4, for which data should be collected frequently and automatically.

These new categories, combined with finance and staff data, accountability metrics in the reformed Progress 8 and the new "4Cs" measures, should form the basis of a peer benchmarking tool that school leaders and inspectors can routinely use to contextualise performance, similar to the NHS's Model Health System. The data within the tool can be assessed on a real-time basis and inform the schedule of upcoming inspections and an ongoing conversation between inspectors and leaders, encouraging much greater collaboration.

The rich data profile for individual schools that this would create would also revolutionise parental choice, reflecting a much broader set of criteria than exam results or the current four-grade system. This would allow parents to choose schools based on what matters the most to them and then hold them to account.

Recommendation 5: Establish a national digital infrastructure for education, starting with a student-owned learner ID and digital profile. Nominate a designated data body for the school sector and develop a peer benchmarking data tool for schools to contextualise performance.

Phase Three

Over time, the combination of more effective use of data for peer benchmarking and the rich information collated via formative assessment would enable a radically better approach to school improvement. Specific areas of concern in schools could be targeted in near-real time and Ofsted, alongside school leaders, could co-design interventions based on best practice at the national level. Rather than the "summative assessment" system of sudden inspections, Ofsted will shift to building longer-term relationships that use qualitative and quantitative data as a kind of ongoing "formative assessment" of school and MAT performance.

Targeted support from peer-led expert groups – based on deep familiarity with contextual data as well as in-person visits and conversations – should be coordinated by Ofsted, taking advantage of its ability to collate insights from across the system and placing it firmly in the role of a "critical friend". Such an approach could build on lessons from the NHS's Getting It Right the First Time (GIRFT) programme, combining the publication of best practice guidance with hands-on support for organisations slipping into "amber" or "red" on individual categories on the traffic light system (instead of the current broad-brush approach). The existing network of DfE hubs could serve as a foundation for such a programme and Ofsted should consider paid sabbaticals for teachers to take on inspection and expert support roles.

Recommendation 6: Empower Ofsted to play the "critical friend" role by using data to contextualise and target interventions. Establish peer-to-peer expert groups to help resolve intractable issues.

Curriculum

Phase One

The current national curriculum is highly prescriptive and needs to be redrafted. It has introduced very specific programmes of study for each subject and has focused much more on tightly defined content that is heavily rooted in core knowledge. It has largely stripped teachers of discretion over what is taught and does not create enough room for pedagogies that would help pupils build more complex skills – including, for example, cross-disciplinary learning. And although academies are, on paper, not obliged to follow the national curriculum, most do in practice.

All of this raises important questions about the purpose of a curriculum. There are good reasons to have some element of standardisation. First, because there needs to be a safety valve of sorts, to make sure no

pupil is denied the chance to meet a minimum floor in the foundational subjects. And second, because some schools find it helpful to benchmark their curricula.

However, an overly prescriptive approach risks stifling innovation and precisely the types of pedagogies that support the development of more complex skills. Given the strong consensus regarding all pupils' need to reach a suitable level in foundational subjects, including English, maths, the sciences and, increasingly, digital skills – and indeed the stubbornly high proportion of people who lack proficiency in these areas – it is reasonable to draw the line at this package of subjects.

Recommendation 7: Establish an expert commission to reform the national curriculum and base it on minimum proficiencies for numeracy, literacy, science and, with time, digital skills, building on international best practice.

Phase Two

The number of academies has soared over the last decade. For instance, eight in ten secondary schools now have this status. Given the plausible prospect that most, if not all, schools will ultimately become academies by design or drift, policymakers will also need to reconsider the role a national curriculum should play for these institutions.

In Recommendation 7, we outlined the rationale for redrafting the current curriculum, with a focus on foundational subjects. There is no good reason why academies should be exempted from that logic.

In addition, although academies are currently not required to follow the curriculum, many do in practice. And given the slimline nature of our proposed curriculum, it would not curtail the innovative potential that underpins the academies model – it would merely serve as a floor rather than as a ceiling.

Recommendation 8: Introduce a statutory requirement for all schools including academies to follow the core (numeracy, literacy, science and digital skills) of a newly reformed national curriculum.

Phase Three

The national curriculum has become a political football, when its purpose should be to ensure that all children are given the opportunity to acquire a minimum set of the skills and knowledge required for success in society and the labour market.

Conservative education reforms have a strongly ideological undercurrent and many of the assumptions that underpin them are heavily contested. Changes to the 2007 curriculum were hastily conceived and implemented and, according to many accounts, routinely ignored expert input. While a democratically elected government should be able to set the overarching tone and goals of a national curriculum, its specifics should always be rooted in evidence.

In other high-performing countries, the process is more collaborative and incremental – and is planned on a cyclical basis, which makes it easier to separate the process from the electoral cycle. In Finland, for instance, legislation sets overall objectives, but reviews are then followed by extensive and meaningful consultation processes, including with teachers. There is a strong emphasis on consensus-building and on evidence to support the inclusion of any given aspect of learning in the curriculum.

Recommendation 9: While education is an issue of high political salience, we need to find a way of introducing more stability into the curriculum to prevent it lurching between ideological idiosyncrasies. Design of the national curriculum should therefore be charged to a non-political and statutorily independent body to evolve and update it as new evidence of best practice emerges.

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