REPORT

IPPR

VOCATIONAL EDUCATION IN ENGLISH SCHOOLS

PROTECTING OPTIONS FOR PRE-16 PUPILS

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EXECUTIVE SUMMARY

This report assesses the effects of league table-based school accountability on the provision of high-quality vocational education in England for the 14–16 age-group. A recent change to the way school performance is measured means that most vocational qualifications will no longer count towards a school's league table score. The effect of this is likely to be a rapid decline in the provision of vocational education for the 14–16 age-group, which serves to demonstrate the sensitivity of vocational education provision to small changes in the accountability framework for schools.

The challenge for supporters of vocational education is not simply to deal with the effects of the league table changes, it is to reassess how vocational education can be made more resilient to changes in the school accountability framework altogether.

- Pre-16 vocational learning is an important part of our educational offer for young people. The majority of pupils currently take at least one vocational course between the ages of 14 and 16; we estimate that there are currently around 630,000–800,000 pupils engaged in some form of vocational education in this age-group at school; and the numbers completing vocational qualifications last year is estimated to be around 50 per cent greater than the number from the UK graduating from English universities.
- In 2011/12, just under 1 million vocational qualifications were awarded at key stage 4, with 85 per cent of these qualifications at level 2.
- However, vocational education within schools across the 14–19 age-group is not as widespread in England as it is in economic competitor countries. Countries with a greater proportion of students in vocational education at secondary school tend to have lower youth unemployment.
- The school accountability system, based on judging schools by the percentage of pupils passing 5 GCSEs graded A*–C, has been far too influential and at times damaging to the development of high-quality vocational provision.
- We estimate on the basis of the survey results published by the IPPR in January[1] that the changes to the recognition given to vocational qualifications in league tables may affect the range of options for a quarter of a million pupils annually: 70 per cent of those pupils who would have had chosen vocational options may be restricted in their choices in future.
- Furthermore, the effect of the recent league table changes will have an impact far beyond simply reducing provision within schools: vocational qualifications have economic value for both the individual gaining them and society at large, and within school vocational education has been associated with increased engagement and improvements in maths and English attainment.
- In other countries with successful vocational education systems, we see a completely different relationship between school accountability and vocational provision. School accountability is arguably more rigorous in some of these countries, but in most cases it is decoupled from the school-leaving exams and, by extension, the curriculum content in the latter stages of secondary school. Vocational education is also found to be a mainstream, popular option for pupils, offering a clear pathway to higher education.

1 See Muir 2013

- England needs a high-quality vocational education system that is resilient in the face of frequent changes in the school accountability framework. However, we also need to reform this school accountability system because it inhibits the development of high-quality vocational provision and, by extension, the development of a better-skilled, more productive workforce. We recommend ensuring that schools are accountable for their provision of vocational learning, that we shift away from an accountability system focused on a leaving certificate at age 16, and that we expand 14–19 programmes of study through institutions such as university technical colleges.

INTRODUCTION

This report assesses the effects of league table-based school accountability on the provision of high-quality vocational education in England for the 14–16 age-group. A recent change to the way school performance is measured means that most vocational qualifications will no longer count towards a school's league table score. The effect of this is likely to be a rapid decline in the provision of vocational education for the 14–16 age-group, which serves to demonstrate the sensitivity of vocational education provision to small changes in the accountability framework for schools.

The challenge for supporters of vocational education is not simply to deal with the effects of the league table changes, it is to reassess how vocational education can be made more resilient to changes in the school accountability framework altogether.

The report is structured as follow:

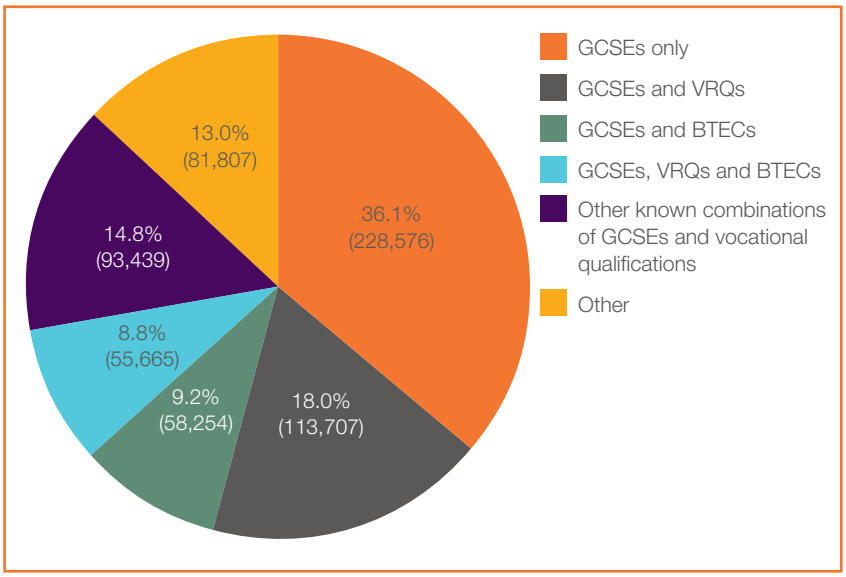
- chapter 1 gives an overview of the scale and importance of vocational education in schools, the rationale behind such provision, and the current policy dynamics
- chapter 2 describes how and why the school accountability framework powerfully influences the provision of vocational education
- chapter 3 assesses both the school accountability systems and the vocational education provision in Australia, the Netherlands, Canada and Singapore, and identifies reasons why these countries appear to have flourishing school-level vocational education without compromising on school accountability
- chapter 4 draws the evidence together to develop policy conclusions for England, setting out how the school accountability system must be changed to ensure that all paths to success are recognised.

1. BENEFITS OF LEVEL 2 VOCATIONAL EDUCATION IN SCHOOLS

Number of vocational learners

The number of pupils taking vocational courses aged 14–16 in English schools is estimated to be between 630,000 to 800,000[2] – of which the majority are taking either vocationally related qualifications (VRQs) or Business and Technology Education Council qualifications (BTECs). However, the system in England is notable by the extent to which the vocational and academic routes are not distinct. Estimates based on 2010 data found that the majority of students at this stage of education take a combination of vocational and academic qualifications, with less than one-third solely taking GCSEs.[3] These combinations are shown in figures 1.1. and 1.2.

Figure 1.1
Combination of qualifications at age 15/16, 2010 (%)

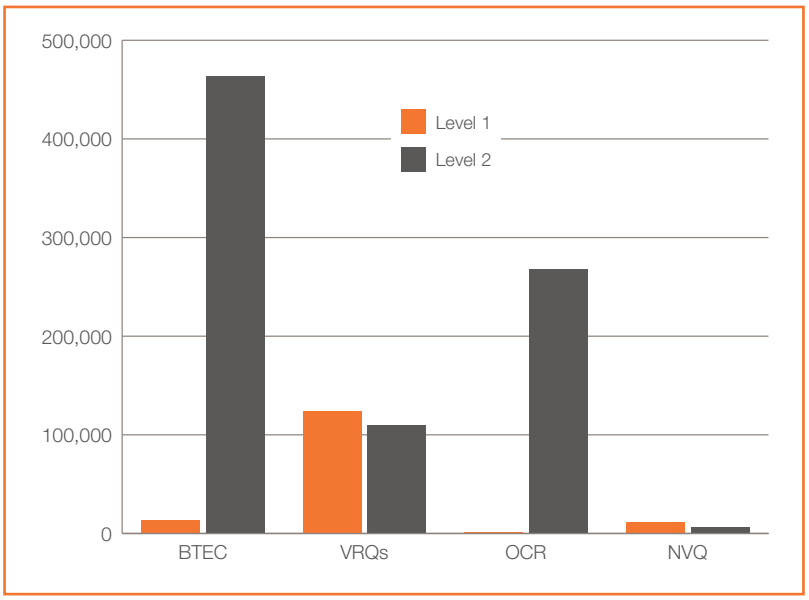


Notes:
Data based on figures quoted in Jin et al 2011.
There are a large number of possible combinations of qualifications included in the 'other' category, some of which will include vocational qualifications; the calculations in this report are adjusted to reflect this.

In 2012, 999,501 vocational qualifications[4] were awarded, 85 per cent of which were at level 2.

2 Author's own calculation on the basis of figures quoted in Jin et al 2011.
3 Figures quoted in this paragraph and shown in charts are calculated on the basis of Jin et al 2011.
4 The number of qualifications will be greater than the estimated number of pupils due to multiple qualifications per pupil.

Figure 1.2
Awards made, by qualification and level of award at key stage 4, 2011/12

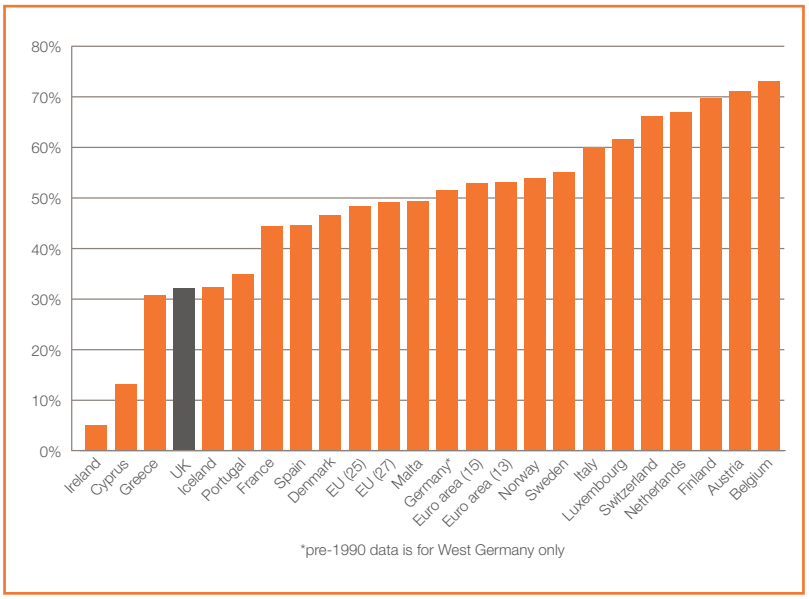


Source: DfE 2013

How does England compare?

Despite this, England compares unfavourably in terms of continuing vocational education beyond 16 (see figure 1.3). Some have linked this to a lack of continuity between compulsory school-age vocational education and post-16 options (Tomlinson 2004). It is no coincidence that the countries at the top of the distribution in figure 1.3 provide well-defined and respected vocational education for the 14–16 age-group.

Figure 1.3
Upper secondary students enrolled in vocational or technical programmes, 2010, by EU country (%)



Source: Eurostat[5]

5 Students by ISCED level, type of institution (private or public) and study intensity (full-time, part-time) [educ_enrl1at]: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_enrl1at&lang=en

The importance of vocational education in schools

The importance of vocational education in schools has long been recognised as providing a bridge between education and employment and for providing a better match for the aptitudes and interests of some pupils (OECD 2010). Studies have shown that vocational education increases school engagement and reduces the risk of pupils leaving the education system with no qualifications (Steedman and Stoney 2004). Providing vocational education is cost-effective too: the provision of education that is relevant to the labour market avoids the need for policy interventions further down the line to help individuals adapt to the labour market, interventions that are expensive once individuals have left compulsory schooling.

The economic value of vocational education in school at level 2

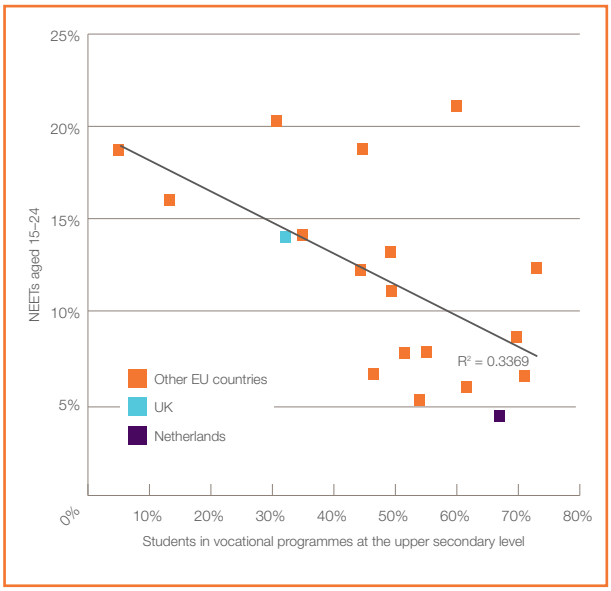
Increasing skill levels enhance individual and societal wealth by improving the productivity of workers, allowing workers to access roles that earn them the greatest economic return. Dearden et al (2003) and London economics (2011) present evidence that shows that level 2 qualifications such as BTEC firsts can carry a substantial wage premium of 10–20 per cent. However, this is not the case for all level 2 qualifications: some qualifications, like NVQs gained outside the workplace, have been estimated to provide a negative return.

However, two factors need to be borne in mind. First, the returns on level 2 qualifications may take a long time to be revealed; second, level 2 qualifications should be seen as part of a pathway to higher qualifications, so creating an 'option value' that is not captured in studies limited to wages and skills. Moreover, the Leitch review (2006) presented evidence that showed that those with level 2 qualifications were 50 per cent more likely to be in employment than those who had no qualifications. The overall conclusion from this evidence is therefore that vocational qualifications at level 2 can provide good economic returns, but that these are dependent on the quality of the qualification. This conclusion is supported by the Wolf review (2011), which argued that the quality of some level 2 qualifications was not adequate to provide students with the necessary skills to progress to skilled employment or further study.

The economic benefits of vocational qualifications at level 3 are large and well established (Jenkins et al 2007). Moreover, evidence has shown that raising skill levels to level 3 has 'spillover' effects in terms of improving the productivity of fellow workers (Galindo-Rueda and Haskel 2005). The benefit from vocational education in schools, therefore, should be seen less in terms of the benefit from the immediate value of qualifications in the labour market and more as a preparation for attaining higher-level skills.

Alongside these benefits, the data presented below (see figure 1.4 over) clearly shows a relationship between participation in education, employment and training (that is, not being 'NEET') and vocational education at the upper secondary level (16–18) among EU countries, participation that can be increased by vocational education at the age of 14–16 (NFER 2010).

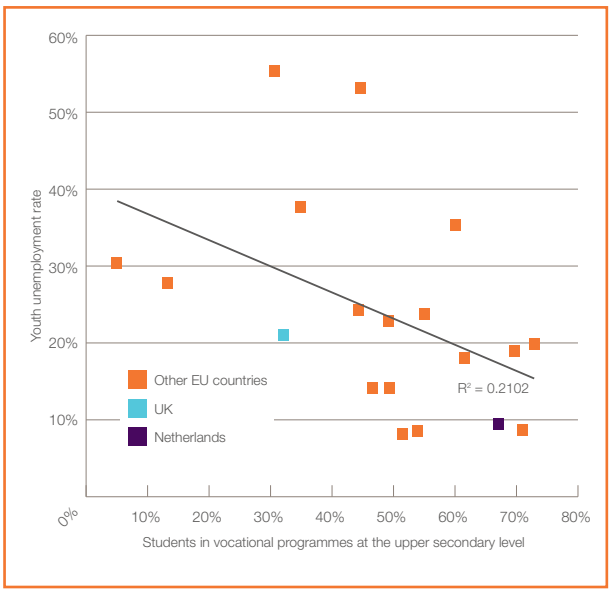
Figure 1.4
15–24-year-olds not in education, employment or training, EU countries



Source: Eurostat[6]
Note: Does not include those countries that joined the EU in 2004 and some countries for which data was not available.

This relationship is not simply an artefact of individuals being kept in education longer: a similar pattern emerges among those who are into their 20s and economically active – see figure 1.5. It strongly suggests that vocational education improves matching between an individual's potential and the needs of the labour market.

Figure 1.5
Youth unemployment rates (15–24) and school-level vocational education, by EU country



Source: Eurostat[7]

6 Participation of young people in education and training, by employment status, age and sex (incl. NEET rates) [edat_lfse_18]: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_lfse_18&lang=en

7 Unemployment rate by sex and age groups - annual average, % [une_rt_a]: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=une_rt_a&lang=en, and Students by ISCED level, type of institution and study intensity [educ_enrl1at] (see note 5)

Despite these benefits, vocational education in England is threatened by changes to the value which the government attaches to vocational qualifications in league tables.

The prevailing policy context

Changes in school accountability measures

The government recently announced that schools would have their performance measured in official publications on the basis of passes in subjects that are part of the English baccalaureate (or 'EBacc'). At the same time, it implemented stricter conditions on how school performance would be measured using qualifications outside of this group. The EBacc subjects include English, mathematics, history or geography, the sciences, and a language.

The exact way in which the performance tables will be presented is currently under consultation, with proposals framing a new measure according to the average points for the 'best eight' GCSEs for each pupil – that is, average points for the five EBacc subjects plus three other approved GCSE-level qualifications – with most though not all vocational qualifications being excluded from this measure.

In addition, those vocational qualifications that are recognised within this measure will only count for one GCSE in the school league tables, whereas currently some vocational qualifications are worth up to six GCSEs. These changes greatly affect the incentives to schools to offer vocational qualifications at key stage 4.

The stated rationale for such reforms is to stop pupils taking subjects that do not have value in terms of getting a job or continuing to higher education. It is intended that this will ensure secondary school pupils concentrate on a core of academic subjects that have been recognised by the Russell Group of leading universities as suitable for university entrance. The reforms are also justified on social justice grounds: it is believed that too many pupils from disadvantaged backgrounds have been being diverted away from academic qualifications in preference for what were perceived as 'easier' subjects.[8]

Academic routes

At the same time, there are significant changes underway to the pathways that pupils take at school. First, from 2015 the participation age will be raised to 18 – as a result, all of the approximately 150,000 pupils who would otherwise have left school for employment or inactivity will now either stay in full-time education or undertake work-based training. Second, the policy direction is towards academic pathways starting at 14, with a possible split between those who stay on to do GCSEs and those who pursue more vocational routes. Part of this shift is the policy of allowing pupils to attend colleges of further education from the age of 14. Allied to these changes is the development of new innovative institutions specifically for the 14–19 age-group: university technical colleges and studio schools.

Changes in the labour market

All these policy changes need to be understood in terms of the need for the UK to produce workers to compete in the global economy – this reflects the increased demand for and returns from high-level skills, but also the observed trend in the reduction in those working in mid-level occupations. This 'hollowing out' of the labour market (Goos and Manning 2003) is possibly a reason why government policy has been tentative around

8 For more, see the Department for Education webpage on the English baccalaureate, at http://www.education.gov.uk/schools/teachingandlearning/qualifications/englishbac/a0075975/the-english-baccalaureate

developing an institutionalised model of vocational education. In this context, there is a concern that vocational education will produce workers who are either over-qualified for the vacancies at the lower-skill end of the labour market or would have had better employment prospects had they taken the academic route.

2. IMPACT OF SCHOOL ACCOUNTABILITY ON VOCATIONAL QUALIFICATIONS

The school accountability system and its relationship with vocational education

The school accountability system in England is based around both inspection (via Ofsted) and national testing. Through these two instruments, the intention is that schools are held to account both by top-down pressure from government and 'consumer power' from parents of pupils. Although government has sought to design a system where the latter is the main driver of school improvement (Gibbons et al 2007) parents have been shown to be unresponsive consumers, at least from the point of view of orienting their demand towards high-quality schools. Instead, their preferences tend to be based on choosing peer groups and distance from home (Burgess et al 2009). This has meant that central government has taken an interventionist role in school accountability, with floor targets, action on 'coasting' schools, forced closure and takeovers, and academy conversion.

School inspections

Ofsted does not have any explicit school inspection objectives around vocational education in schools, only that there should be an 'appropriate balance' at key stage 4 between academic and vocational qualifications (Ofsted 2013) and that schools should have a broad and balanced curriculum. There are occasional reviews of vocational provision, but these are intended to judge how the system as a whole is working rather than as assessments of individual schools.

Performance tables

The de facto performance measure of secondary schools is the percentage of pupils gaining five A*–C grades including English and mathematics. It should be noted that this performance measure was itself implemented because the previous system of performance measurement (percentage achieving 5A*–C without subject restrictions) was deemed to be too influential on schools' curriculum design and the extent to which schools concentrated their efforts on different subjects and types of pupil. The 5A*–C measure has the drawback of largely reflecting the characteristics of the pupil intake of a school, rather than as an indication of intrinsic school performance. To mitigate this, the last government attempted to measure performance based on intake factors, such as attainment at the end of primary school, and the current government's own solution is to provide extensive performance management information, of which the 5A*–C measure is only one part.

However, these attempts have largely failed because the 5A*–C measure remains the most easily understood both by parents and by schools (Allen and Burgess 2010). Moreover, despite the government's best intentions, it is unclear why the introduction of new performance measures around the EBacc and the 'best eight' would change this in the future. The inclusion of vocational qualifications in the performance measure has hitherto been on the basis of defining each qualification as a GCSE-equivalent and so converting each vocational qualification gained by pupils within a school to that equivalent, such that they can be included in the 5A*–C measure. However, this will no longer apply after 2015 in the majority of cases and, where it does, vocational qualifications will never be worth more than one GCSE. It is currently unclear how, post-2015, achievement in vocational qualifications that are not included in the school performance measures will be reported to the public or if the government will monitor outcomes in this area through any performance metrics whatsoever.

Current evidence on how the school accountability system has shaped the vocational offer

Curriculum design

The use of vocational qualifications within the 5A*–C measure has meant that by necessity vocational education has had to adopt the structures that apply to academic education. This has two effects:

First, the pathway of vocational education and its 'checkpoints' are dictated by the academic curriculum. This means that qualifications and courses of study tend to start at 14 and end at 16 with no continuation beyond. This disallows any thinking around longer courses, or courses that can be started and resumed with credit 'banked', as is common in the US and Canada. This is particularly problematic for both demonstrating and realising the value of level 2 qualifications, because the 14–16 route does not automatically lead to the economic payoff expected (that is, the acquisition of level 3 skills, as described in the previous chapter).

Second, integrating vocational education within schools with the school accountability system has meant less rigid and employment-focused vocational learning. Instead, greater emphasis has been placed on soft skills – which is not necessarily a bad thing in a dynamic labour market – and too much emphasis on simply 'achieving the qualification'. This is in turn compounded by the school accountability issue, that is, that there is little incentive to put effort into learning that does not result in qualifications. This problem was noted by the Wolf review (2011) and was identified as affecting curriculum design and delivery in a review of vocational education in economics and business by Ofsted (2011). The effect of this emphasis on qualifications for their own sake has led to a situation where the assessment system for vocational education is at odds with the aims of vocational education itself – that is, employability and skill formation (Oates 2013) – with effects on its usefulness and the engagement of learners (HoC CSF 2009).

Perverse incentives

Of course, the driving force behind the proposed changes to the school accountability system are the perverse incentives that seem to have driven schools to increase their vocational offer substantially over the last 10 years.

The 5A*–C performance measure has meant that schools have put effort into identifying ways in which pupils can be brought over the C/D threshold. This has happened through both focusing resources on borderline pupils and entering pupils into subjects that are believed to be easier (Wilson et al 2004). Research by the Institute for Fiscal Studies for the Department for Education (DfE)(Jin et al 2011) found convincing evidence that schools had in fact taken up vocational qualifications enthusiastically in order to improve their league table position, and even evidence of inappropriate qualification entries, presumably for this purpose.[9] Separately, Ofsted reported that schools have entered pupils early in order to 'bank' a C grade, even when the pupil would perform better if they took their exams later (DfE 2013). The uptake of vocational qualifications was especially rapid in schools that served disadvantaged pupil populations, and thus those for whom the 5A*–C measure had been a particularly unfair and misleading measure of school performance, due to the characteristics of the pupil intake.

9 The example given was a number of schools where pupils had been entered for a basic skills numeracy qualification while at the same time gaining an A* in GCSE maths.

Effect on status of vocational qualifications

In all of the research reviewed that sought the views of teachers and headteachers[10] it was apparent that vocational qualifications were seen as beneficial for those who were disengaged from schools and/or low attainers. This implicit linkage between vocational qualifications and low-performing students is a pervasive attitude that may be in part driven by the accountability system, insofar as it incentivises schools to reduce their emphasis on the academic progress of low attainers (Burgess et al 2005). This and the known strategic behaviour of schools that have used vocational qualifications to boost their league table position have both damaged the status of vocational qualifications.

Consequences of the recent change in school accountability

Reduction in schools offering vocational qualifications

Even before the DfE had announced the league table change, schools were already reducing their vocational offer due merely to the notion that vocational qualifications might be removed from performance metrics (Greevy et al 2012), thus demonstrating the sensitivity of schools to small changes in the accountability framework. An analysis by IPPR (Muir 2013) of a survey of senior school staff conducted after the league table reforms had been announced found that 60 per cent of schools surveyed said that they had or were planning to reduce their vocational offer; weighting the results by region slightly increases this proportion to 63 per cent. To the extent that these survey findings are representative of all schools we can make an approximation as to the number of pupils affected. This weighted figure is adjusted for the proportion of schools that have never offered any vocational qualifications[11] and then multiplied by the number of pupils that were estimated to take at least one vocational qualification in 2009/10. From this calculation we estimate that annually around 250,000 pupils may have a more limited choice of vocational qualifications than previously[12] – this is about 70 per cent of all pupils who would choose vocational qualifications. Those claiming free school meals are hardest hit, given that they are about 24 per cent more likely than the average pupil to take at least one vocational qualification. Compared with the levels outlined in the previous chapter, the numbers of vocational qualifications and learners are likely to decline over the next few years.

Effect on the status of vocational education

One of the unfortunate effects of the league table reform is that the response by schools runs the risk of downgrading the perceived status of vocational qualifications in schools. Studies have found that the introduction of general national vocational qualifications (GNVQs) boosted the status of vocational subjects among pupils (Colley and Comber 2003); there is a risk that the withdrawal of many vocational qualifications will conversely reduce the status pupils give to vocational qualifications. The message of the reforms is that vocational qualifications have no value, and this could have the effect of altering the mix of the type of pupils who opt for vocational qualifications. This in turns risks having a selection effect on pupils – more able pupils become less likely to do vocational qualifications, in turn making vocational qualifications less valuable, due to their association with lower ability. Of course, in order to raise the status of vocational qualifications it is also important that their quality is assured.

10 For example, Wilson et al 2004

11 That is, we estimate that 70 per cent of schools who previously offered vocational qualifications have reduced or will reduce their offer.

12 Note that this does not imply that these pupils will have *no* choice of vocational options.

Effect on curriculum design of vocational qualifications

Vocational education may adjust in two ways. Those providing vocational qualifications could attempt to meet the stringent conditions (DfE 2012) for a qualification to be included in the school performance measures, with the obvious drawback of trying to make vocational education fit the academic template. Another potential response is for vocational education to move out of schools and become more employment-focused, with the transferable skills learnt in vocational qualifications being de-emphasised. This may in the short term lead to better labour market outcomes for individuals but research has found that such a focus on job-specific skills comes at the price of poorer long-term outcomes because individuals are less able to adapt to changing labour market demands and technological change (Hanushek et al 2011).

Effect on lower-ability pupils

Reforms may sharpen incentives for schools either to offload pupils who would have taken vocational qualifications in schools to further education (FE) colleges (Taylor 2012) as a means to improve league table standings or to focus fewer resources on the lowest ability pupils. The result of either approach would be more pupils leaving school with no qualifications. Such a dynamic has been observed in the US, where an emphasis on defined standards in core subjects for all pupils in combination with high-stakes testing as a means of enforcing school accountability contributes to the 'crowding out' of vocational education from mainstream curriculum provision (Lewis 2007) and with the longer-term effect of lowering educational performance and skill levels in the workforce (Symonds et al 2011).

Effect on attainment in other subjects

Chapter 1 showed that the majority of pupils take a combination of GCSE and vocational qualifications, so there are likely to be implications for the performance of pupils in academic subjects. Jin et al (2011) found that in schools where take-up of vocational subjects was the greatest there were corresponding improvements in the attainment of pupils in maths and English, suggesting the possibility that one effect of schools offering vocational subjects is to improve attainment in all other subjects. The authors suggest that possible reasons for this include the idea that having more vocational subjects in a curriculum allows for more efficient timetabling of maths and English provision and that effort to improve league table position is a common cause behind both the increase in vocational subject uptake and academic attainment.

However, it is also possible that offering vocational qualifications improved school engagement and motivation, which consequently improved maths and English outcomes. In a study of 'disengaged' pupils for the DfE (Ross 2011) it was found that those taking vocational subjects were about 70 per cent more likely to achieve five A*–G grades at key stage 4 than similar pupils who did not take a vocational subject. Corroborating these findings, research for ASDAN (Harrison et al 2012) also demonstrates that those who took their Certificate of Personal Effectiveness were more likely to gain a grade A*–C in maths and English. These complementarities risk being lost by schools' response to the league table reforms, with the greatest effect likely to be on disadvantaged pupils.

A summary of the issues

The organisation of school accountability in the English schools system is based around high-stakes tests, the results of which are made public. This creates a system in which secondary school education is modelled around performance in these tests. This has two main effects on vocational education: the first is to make the vocational offering of school

contingent on the extent to which vocational qualifications will improve a school's position in the league table; the second is to alter the design of vocational education towards an academic track.

High-stakes testing does not exist in isolation of other factors that shape how the school accountability system affects vocational provision. However:

- The view of schools as autonomous institutions combined with an institutional performance measure creates disincentives for partnership working (HoC CSF 2009).
- As schools are an almost-monopolist supplier of qualifications at 16, the supply of vocational qualifications is determined primarily by schools' own needs, and the autonomy of schools means that other stakeholders have little influence.
- The school accountability system is highly focused on the wishes of central government, inhibiting schools from working in partnership with and being responsive to local organisations and the business community.

3. CHANGING THE RELATIONSHIP BETWEEN SCHOOL ACCOUNTABILITY AND VOCATIONAL EDUCATION

WHAT CAN WE LEARN FROM OTHER COUNTRIES?

This chapter presents a description of school accountability systems and vocational education in schools in four countries: Australia, the Netherlands, Canada and Singapore. These countries have been identified because they appear to combine high-quality vocational provision with a school accountability system that seems to have no undue influence over it. These countries also perform better both in terms of educational attainment[13] and in terms of youth labour market outcomes, compared to the UK (PISA ranking = 22; youth unemployment rate = 18.9 per cent[14]).

Table 3.1
Key metrics for UK and comparator countries

	PISA rank	Youth unemployment rate
UK	22	18.9%
Australia	11	11.5%
Netherlands	11	6.6%
Canada	8	15.2%
Singapore	4	12.9%

Australia

PISA ranking = 11; youth unemployment rate = 11.5 per cent

School accountability

Education policy in Australia is mostly devolved to regional government and the school inspection system is limited. However, there is common data collection and a standardised school performance profile is produced for each school and published on the My School website.[15] Highly detailed school performance data is available to parents and stakeholders on this website, covering a variety of performance measures and contextual information. In the design of the system the production of a headline figure of school performance was specifically resisted. The only measure that resembles a headline indicator is the results of national standardised literacy and numeracy tests that are conducted every two years over a pupil's school career from the age of nine until age 15, after which states have different arrangements for high school leaving certificates. The use of standardised testing throughout schooling and the fact that it is not compulsory to complete high school seems to reduce the saliency of the end-of-school exams/ graduation. As such, the latter part of secondary education is focused around equipping pupils for the next stage, be that education, training or employment.

Vocational education

Around 40 per cent of Australian students undertake some form of vocational education before they leave school. Although education policy is devolved to states, vocational education exists within a national standardised framework, into which vocational education at the school level is directly linked. Vocational education is mostly delivered by registered training organisations (RTOs), which can be schools themselves or private providers, or a combination of both. Such vocational education usually includes a work placement, and school-based apprenticeships also exist – in these ways, vocational education is a blend of education and practical experience.

13 As measured by the average Programme for International Student Assessment (PISA) 2009 ranking across the three subjects of reading, maths and science, rounded to the nearest whole number. The PISA rankings themselves are based on the test scores in each of these subjects with the top country in each test ranked number 1, and so on.

14 This youth unemployment rate refers to the 15–24 unemployment rate in 2009, the most recent year for which comparable data was available for all countries.

15 http://www.myschool.edu.au/

Although there is no national system as such for vocational education before the age of 16, states have their own policies in this area. For instance, in Queensland, schools are free to provide vocational qualifications and education for 14–16 year olds and also to allow students to undertake vocational education outside of school with an RTO. A similar system operates in New South Wales, where all 14–16 vocational education leads to a nationally recognised qualification and there is the option of commencing a school-based apprenticeship at this age. The option to commence higher level (16–18) vocational education early also ensures a focus on the progress and needs of the student rather than the way the schooling system is structured.

The Australian government has attempted to recognise vocational education within schools as part of the school accountability system. The My School website provides information based on vocational education in schools, detailing the number of enrolments in vocational education and the qualifications completed and the industry area of the qualification. The data is descriptive rather than presented in terms of performance.

Implications for England

- Due to the lack of performance measurement based on the school-leaving diploma, vocational education does not have to be delivered by the school, which encourages a diversity of provision and innovative curriculum content.
- Reliance on standardised testing in numeracy and literacy throughout schooling negates the need for vocational education to be designed with school accountability in mind.
- The focus of pre-16 vocational education is preparation for 16–18 vocational qualifications.

The Netherlands

PISA ranking = 11; youth unemployment rate = 6.6 per cent

School accountability

The Dutch school system is a tripartite system of vocational (VMBO), technical/professional (HAVO) and academic schools (VWO) that separates pupils into these different tracks at age 12. While school accountability is conducted through annual inspections of every school, there is little in the way of published performance information for school accountability; performance is managed by municipal government monitoring. School-leaving qualifications are not used to assess school performance; the three routes of schooling each have their own separate diplomas.

Vocational education

With its early channelling of pupils into the vocational track and the separation of end-of-compulsory-schooling qualifications, it appears at first as if the Dutch system is an extreme formalisation of the dead-end route of vocational education that the UK is criticised for. However, not only is the vocational education of high quality, the system provides a clear path to higher education. Far from being the option for dropouts, the vocational track is the main route through secondary school: over half of all pupils take the VMBO route, indicating it is not a route for those at the lowest end of the attainment and motivation spectrum.

The curriculum content on the vocational track starts with two years of general academic education; the subsequent two years are based around specified industry sectors of care, engineering, business and agriculture, rather than a free choice in the combination of subjects. The design of the curriculum content is also determined by the ‘pathway’ that a

pupil chooses. A pathway is the route that the pupil intends to take after age 16 – further education with a more academic flavour, or a mix of work-based training and education. The school leaving age in the Netherlands is 18, so schools are able to put together a comprehensive high-quality package of vocational training.

Implications for England

- Separate tracks and the lack of high-stakes testing allows high-quality provision to be developed without being crowded out by academic studies.
- Clear pathways to further study are provided.
- The vocational curriculum is focused on a body of knowledge in a particular vocational area, rather than small, distinct vocational qualifications; it is also part of a programme that extends beyond age 16.
- Vocational education is the mainstream option and therefore does not have a low status.

Canada (Ontario)

PISA ranking = 8; youth unemployment rate = 15.2 per cent[16]

School accountability

There is no federal-level government department responsible for education in Canada; the vast majority of the design of the education system is done at the provincial government level. Provinces determine compulsory education ages, examinations and assessments, and school accountability. Some provinces have standardised tests to monitor school performance, but these are not linked to qualifications and tend to be in numeracy and literacy and occur around the ages of 13–15, before compulsory schooling ends.

In Ontario, the tests are used to identify successful schools; the reasons for their success are investigated and shared with other schools. The emphasis is on collaboration and support, with action on poor performance being an instigator for additional support from other schools. *School-level* results are not published by government – results are only published at the *district* level[17], and it is districts that are judged on the district-level performance by the state government. If performance is in decline, districts must have a plan to improve performance (Corrigan 2008).

The only standardised national assessment takes place at ages 13 and 16. These results are only published at regional and local government level, and the assessment is not designed to assess school performance; it is not a qualification and pupils do not learn of their results.

Vocational education

Most vocational education in schools occurs after turning 16; in Ontario, the school-leaving age is 18, so pre-16 education can be tailored towards choices made post-16.

Despite the high degree of decentralisation in the Canadian school system, vocational qualifications that are linked to a specific trade are regulated by a national organisation, the Red Seal Program, which sets the standards for qualifying in 52 occupations. A qualification (a Red Seal Endorsement) is gained after a period of formal education/apprenticeship and passing an exam.

16 These figures relate to the whole of Canada; however, Ontario's PISA score is the same as Canada's overall, and while we do not have comparable figures on youth unemployment for Ontario, we do know that the all-age unemployment rate is similar between Ontario and Canada as a whole.

17 However, school-level results are published by the Fraser Institute, an independent organisation.

Aside from these specific trade qualifications, there is considerable latitude for local areas to develop their own vocational qualifications and programmes of study. In Ontario, for instance, school boards (similar to English local education authorities (LEAs) are able to develop 'high skills majors' vocational programmes of study in conjunction with local businesses and community groups that give students credit towards their high school leaving diploma. An evaluation of this programme has found tentative results that it increases student performance in other school subjects (Maharaj et al 2012) and the regional government credits the innovation as having been behind the increase in high school graduation from 68 per cent in 2003/04 to 81 per cent in 2010/11.

Implications for England

- The decoupling of school accountability measures and end-of-compulsory-schooling qualifications allows for innovative, locally designed programmes of study.
- The system of mutual support among schools in Ontario allows respect for schools with different strengths and different student bodies, negating any incentive to compete on standardised measures. Localised accountability for schools can work.
- Multiple school performance measures are used to assess all aspects of a school performance but are not shared (at the school level at least) with parents. This enables a holistic view of performance to be developed, without the risk of inadvertently creating a system that is concentrated on a single headline measure of performance.
- Pre-16 education can be tailored towards post-16 pathways.

Singapore

PISA ranking = 4; youth unemployment rate = 12.9 per cent

School accountability

The current system of school accountability in Singapore is unrecognisable from the system that existed throughout the 1990s. Then, it was based around a strong reliance on standardised testing and a rigid system of ranking schools. This system was deemed to have failed because it encouraged a high degree of 'teaching to the test', the disengagement of schools themselves from providing a quality education, and the growing mismatch between students, who were very adept at taking tests, and the labour market (Ng 2010).

In its place, a new system was developed with less emphasis on standardised testing; by 2004, all school performance information that related to standardised tests was removed completely from the public domain. This new system ('Teach Less, Learn More') is based around strong state-level control of the education system – teachers are employees of the central government. The performance monitoring of schools is done by government officials and a limited inspection regime exists (schools are inspected every six years). To rank and incentivise school improvement, test-based scores have been replaced by a system of financial incentives for teachers and pupils. The teacher performance management system is based on objectives that are wide in scope and do not relate to test scores.

Vocational education

Along the same lines as the Netherlands, Singapore has a system that separates pupils into different tracks at age 13. However, these tracks determine more the speed of learning than the content of the course of study. What constitutes 'vocational education' at school level does not contain much vocational content, rather it is more a preparation for the transition to vocational and technical schools at 16. The rigid high-stakes performance management system of the 1980s and 1990s meant that vocational

education was ‘crowded out’ by academic studies and commanded a very low status among pupils and wider society. This has changed substantially: now, the majority of students go through the vocational and technical further and higher education route, and all routes now lead to higher education (HE) unless a student chooses to enter the workforce. Indeed, high prestige and high graduating salaries are seen as crucial reasons why the vocational route in Singapore is so popular.

Implications for England

- A high-quality and prestigious HE route includes competitive and prestigious vocational HE institutions.
- There is an expectation that vocational learning continues beyond age 16.
- High-stakes standardised testing was found to have damaged learning and skills.
- Vocational education was made more attractive through a more sophisticated performance management system in schools, removing public performance measures, and heightening the status of the vocational route.

Common features of comparator systems

A number of features appear common to these countries with stable vocational systems.

- Schools are judged on a wide range of indicators, but in none of these countries are schools judged on the secondary school leaving qualification. This and the fact that the participation age is 18 in these countries[18] allows the curriculum content of the 14–16 age-group to be tailored to the students’ needs and interests and to focus on equipping students for the next stage.
- High-stakes testing for schools is a feature in some of these countries, and in the case of Australia and Canada it is conducted more regularly than in England. However, in no country is it applied at the end of compulsory schooling, and it is mainly based on tracking pupils’ progress through school in literacy and numeracy. The tests are also ‘low stakes’ from the pupils’ point of view.
- There is strong local and regional oversight of the education system; vocational education is provided with little central government interference but linked to defined national qualification frameworks.
- Vocational provision is not necessarily confined to schools (being provided, for example, through RTOs in Australia), even for students of compulsory school age; partnership arrangements with other institutions and local businesses are possible.
- Credible high-status pathways to HE ensure that vocational education is not seen as a dead-end option.
- Finally, in all the countries considered a large proportion of the pupil population take vocational qualifications, with low-attaining pupils tending not to be eligible for some vocational routes (west and Steedman 2003). The evidence from other countries’ experiences is that as soon as school accountability becomes focused on academic outcomes only, vocational education is ‘crowded out’ and becomes an option only for the lowest-attaining pupils.

18 In Australia and Canada this differs by state.

Comparing England to the European model

In addition to the countries examined, a key feature of many European countries' vocational systems is the extent to which vocational education is determined and coordinated by the 'social partners' of schools: the corporations, trade unions and government. The less-structured system that exists in England means that it relies on market signals to generate a supply of young skilled workers. But this system is vulnerable to the possibility of inaccurate market information and labour market mismatch, especially in niche and emerging sectors.

Furthermore, with schools as the main suppliers of 14–16 vocational qualifications, the system relies on schools being responsive to market signals. The school accountability system however has been shown to dominate these supply decisions, crowding out the opportunity for the supply of vocational qualifications to be market-driven, such that we get neither the liberal market approach nor the coordinated approach. The high degree of school autonomy combined with the school accountability system in England compared to other countries is a crucial part of this problem – in other countries, institutions are more able to work together to support mutually beneficial outcomes.

Problems in school vocational education systems

The preceding analysis is not to say that the systems reviewed are perfect by any means. On one hand, in some countries (as in England) where vocational education is weakly linked to labour market institutions and more closely linked to schools, vocational qualifications are continually under threat of being crowded out by academic education. On the other hand, in countries with greater corporate and state planning of vocational education and progression there is a growing need to provide more academic content in the vocational track, due to the lack of flexibility their systems offer in terms of preparing students for the future labour market (Bosch and Charest 2008). So, there is a trade-off.

In other countries where vocational education has a higher status, vocational qualifications are more rigorous. Indeed, there is evidence that in some cases they might be too successful, such as by attracting students who have been or would have been successful on the academic route, to the detriment of other students who miss out on vocational places (which occurred in vocational schools in Germany (Bellman et al 2008)). There is, therefore, a tension between establishing the high status of vocational education and the benefits of keeping pupils in education who otherwise would have left.

4. REFORMS TO CREATE A MORE RESILIENT, STABLE AND BETTER QUALITY SYSTEM

It is clear that having an effective school accountability system and high-quality vocational provision need not be so difficult to achieve in practice. Other countries manage to have both and outperform England on measures of both educational attainment and youth labour market outcomes. The following steps would move the English system closer to the standard set by these comparator countries.

Include a broader range of vocational qualifications in the school performance measures

The government is committed to excluding most vocational qualifications from the school performance measures. This is justified to some extent, in light of the evidence presented by the Wolf review showing the variable quality and value of many level 2 vocational qualifications. However, to totally ignore some vocational education in measuring school performance is short-sighted and risks substantially reducing the vocational education offered in schools. To this end, the government should consider ways in which schools' performance in vocational education can be included in their performance profile beyond the approved qualifications – as there is currently a diverse range of information included on school performance (such as the absenteeism rate or school finances) it seems perverse to exclude these vocational qualifications altogether. One way of making it easier for these vocational qualifications to be included would be to rationalise the number of vocational qualifications in existence. Arguably, England has too many vocational qualifications; by contrast, Australia restricts the number of qualifications offered, as does Canada.

Develop a richer school accountability framework that goes beyond end-of-school attainment

The countries profiled in this report have standardised testing *throughout* schooling, but then little or no performance measurement at the *end* of compulsory schooling. This creates the space for high-quality vocational provision to develop, and should be the direction of travel for changes in English education. By doing so, we would retain the test-based accountability that is clearly preferred by all political parties while removing the perverse incentives of school accountability from vocational education.

Clearly such a shift away from accountability at the end of key stage 4 would represent a major shift. In the short term at least, there is little likelihood of this coming about; indeed, given that schools no longer have to take key stage 3 tests, such a move would risk leaving some schools with no external accountability measures at all. Therefore, we should also consider shifting the emphasis of school performance measures towards those that gauge progress towards post-16 outcomes, such as the Education Destination Measures already produced and longer-term outcome measures. This would not only act against the tendency of policymakers to fund qualifications without considering their labour market value (Roberts 2012) but would also remove some of the problems created by high-stakes testing. Australia includes post-school destinations in its school performance indicators; it should be straightforward to do so in England as well. The government currently proposes destination measures in respect of Russell Group universities, but we could consider such measures for other labour market and education destinations.

Diversify provision

It is particularly problematic that in England the supply of qualifications is almost totally determined by the schools, which make these decisions based on league table measures. Instead, the system that supplies vocational education needs to be rebalanced towards the interests and demands of pupils and employers.

This lends support to an expansion of new 14–19 institutions with a vocational focus, such as university technical colleges, which have strong institutionalised links both to employers and universities. It is conceivable that further education colleges, which are now able to recruit at 14, could be the catalysts for some of this expansion.

We might also encourage more alternative providers and partners to deliver vocational education, along the lines of the Australian RTO model. Such a system would encourage the development (or reintroduction[19]) of valuable school-based apprenticeships. This shift towards diverse provision of vocational educational at age 14 would be encouraged by the creation of programmes of study that provide continuity from 14–19, such as those developed at university technical colleges and studio schools.

19 The Labour government introduced Young Apprenticeship programmes for 14–16-year-olds, which were withdrawn by the Coalition government.

CONCLUSION

Vocational education in England grew substantially over the last decade, strongly encouraged by the inclusion of vocational qualifications in school league tables as GCSE-equivalents. This has had benefits, as vocational education has been identified as improving labour market outcomes, school engagement and attainment in English and maths. However, it has also been recognised that such growth allowed for the development of qualifications that were of poor quality and had little value either in the labour market or as a means of progression to further study. In seeking to remedy this, the government has tightly restricted the value given to vocational qualifications in official school performance measures.

The response of schools has been to reduce the provision of vocational education, thereby demonstrating the sensitivity of schools' behaviour, and thus the provision of vocational education, to changes in the school accountability framework. England appears to be unique in the weight that the education system places on outcomes at the age of 16 and the extent to which school performance at this level dictates education provision. Other countries are able to offer high-quality vocational provision while also maintaining school standards by separating out the measurement of school performance from the qualifications and skills gained at the age at which compulsory education ends.

The strengthening of our vocational education system entails ensuring that schools are accountable for their provision of vocational learning, shifting away from an accountability system focused on a leaving certificate at age 16, and increasing and expanding 14–19 programmes of vocational study and post-school institutions.

REFERENCES

Allen R and Burgess S (2010) *Can school league tables help parents choose schools?*, Bristol: Centre for Market and Public Organisation, University of Bristol. http://www.bristol.ac.uk/cmpo/publications/other/leaguetables.pdf

Bellman L, Hall A and Janik F (2008) 'Abitur and what next? Reasons for gaining double qualification in Germany', LASER discussion paper 18, Erlangen: University of Erlangen-Nuremberg

Bosch G and Charest J (2008) 'Vocational Training and the Labour Market in Liberal and Coordinated Economies', *Industrial Relations Journal*, 39(5): 428–447

Burgess S, Propper C, Slater H and Wilson D (2005) 'Who wins and who loses from school accountability? The distribution of educational gain in English secondary schools', CMPO working paper 128, Bristol: Centre for Market and Public Organisation, University of Bristol. http://www.bristol.ac.uk/cmpo/publications/papers/2005/wp128.pdf

Burgess S, Greaves E, Vignoles A and Wilson D (2009) 'What Parents Want: School preferences and school choice', CMPO working paper 222, Bristol: Centre for Market and Public Organisation, University of Bristol. http://www.bristol.ac.uk/cmpo/publications/papers/2009/wp222.pdf

Corrigan O (2008) *Technical Matters*, London: Policy Exchange

Dearden L, McGranahan L and Sianesi B (2003) 'An In-depth Analysis of the Returns to National Vocational Qualifications Obtained at Level 2', CEE discussion paper 46, London: Centre for the Economics of Education, London School of Economics and Political Science. http://cee.lse.ac.uk/ceedps/ceedp46.pdf

Department for Education [DfE] (2012) *2016 Performance Tables: Technical Guidance for Awarding Organisations*, London. http://media.education.gov.uk/assets/files/pdf/2/2016%20performance%20tables%20-%20technical%20guidance%20for%20awarding%20organisations.pdf

Department for Education [DfE] (2013) *Secondary School Accountability Consultation*, London. https://www.gov.uk/government/consultations/secondary-school-accountability-consultation

Galindo-Rueda F and Haskel J (2005) 'Skills, Workforce Characteristics and Firm-Level Productivity: Evidence from the Matched ABI/Employer Skills Survey', IZA discussion paper 1542, Bonn: Institute for the Study of Labor (IZA). http://www.iza.org/en/webcontent/publications/papers/viewAbstract?dp_id=1542

Gibbons S, Machin S and Silva O (2007) 'The educational impact of parental choice and school competition', *Centrepiece*, Winter 2006/07. http://cep.lse.ac.uk/centrepiece/v11i3/gibbons_machin_silva.pdf

Goos M and Manning A (2003) 'Lousy and Lovely Jobs: the Rising Polarization of Work in Britain', CEE working paper, London: Centre for the Economics of Education, London School of Economics and Political Science. http://eprints.lse.ac.uk/20002/1/Lousy_and_Lovely_Jobs_the_Rising_Polarization_of_Work_in_Britain.pdf

Greevy H, Knox A, Nunney F and Pye J (2012) *The effects of the English Baccalaureate (revised)*, IPSOS Mori for the Department for Education. https://www.education.gov.uk/publications/standard/publicationDetail/Page1/DFE-RR249

Hanushek EA, Woessmann L and Zhang L (2011) 'General education, vocational education, and labor-market outcomes over the life-cycle', NBER working paper 17504, Cambridge MA: National Bureau of Economic Research

Harrison N, James D and Last K (2012) *The impact of the pursuit of ASDAN's Certificate of Personal Effectiveness (CoPE) on GCSE attainment*, Bristol: ASDAN and University of the West of England. http://www.asdan.org.uk/About_ASDAN/uwe_research_report

House of Commons Children, Schools and Families Committee [HoC CSF] (2009) *School Accountability, First Report of Session 2009–10, Volume I*. http://www.publications.parliament.uk/pa/cm200910/cmselect/cmchilsch/88/88i.pdf

Jenkins A, Greenwood C and Vignoles A (2007) 'The Returns to Qualifications in England: updating the Evidence Base on Level 2 and Level 3 Vocational Qualifications', CEE discussion paper, London: Centre for the Economics of Education, London School of Economics and Political Science. http://eprints.lse.ac.uk/19378/1/The_Returns_to_Qualifications_in_England_Updating_the_Evidence_Base_on_Level_2_and_Level_3_Vocational_Qualifications.pdf

Jin W, Muriel A and Sibieta L (2011) *Subject and course choices at ages 14 and 16 amongst young people in England: insights from behavioural economics*, London: Institute for Fiscal Studies for the Department for Education. http://www.ifs.org.uk/publications/5734

Leitch S (2006) Prosperity for all in the global economy – world class skills, final report of the Leitch Review of Skills, London: HM Treasury. http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/media/6/4/leitch_finalreport051206.pdf

Lewis T (2007) 'School Reform in America', in Clarke L and Vinch C (eds) (2007) *Vocational Education: International Approaches, Developments and Systems*, Routledge

London Economics (2011) *Estimating the Returns to Intermediate and Low Level Vocational Qualifications*, report for the Department for Business, Innovation and Skills. http://www.londecon.co.uk/publication/estimating-the-returns-to-intermediate-and-low-level-vocational-qualifications

Maharaj S, Levin B and Segedin L (2012) 'The Impact of Selected High School Reforms in Ontario', paper presented to the Canadian Society for the Study of Education, Wilfrid Laurier University and University of Waterloo

Muir R (2013) *The impact of league table reform on vocational education in schools*, London: IPPR. http://www.ippr.org/publication/55/10247/the-impact-of-league-table-reform-on-vocational-education-in-schools

National Foundation for Educational Research [NFER] (2010) *Vocational Education: The Wolf Review*, London. https://www.nfer.ac.uk/nfer/publications/99924/99924.pdf

Ng PT (2010) 'The evolution and nature of school accountability in the Singapore education system', *Educational Assessment, Evaluation and Accountability*, 22(4): 275–292

Oates T (2013) 'Why "outcomes" aren't enough – qualifications policy should not be the only game in town', paper presented at the SKOPE conference, 15–16 April 2013, Richmond-Upon-Thames

OECD (2010) *Learning for jobs*, Paris. http://www.oecd.org/education/country-studies/learningforjobs.htm

Ofsted (2011) *Economics, business and enterprise education*, London. http://www.ofsted.gov.uk/resources/economics-business-and-enterprise-education

Ofsted (2013) *School Inspection Handbook*, London. http://www.ofsted.gov.uk/resources/school-inspection-handbook

Roberts S (2012) 'Gaining skills or just paying the bills?: workplace learning in the lower reaches of the retail sector', *Journal of Education and Work*, online, 31 January 2012

Ross A (2011) *Disengagement from Education among 14–16 year olds*, National Centre for Social Research for the Department for Children, Schools and Families. https://www.gov.uk/government/publications/disengagement-from-education-among-14-to-16-year-olds

Steedman H and Stoney S (2004) 'Disengagement 14–16: Context and Evidence', CEP discussion paper 654, London: Centre for Economic Performance, London School of Economics and Political Science. http://cep.lse.ac.uk/pubs/download/dp0654.pdf

Symonds W, Schwartz R and Ferguson R (2011) *Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century*, Cambridge MA: Pathways to Prosperity Project, Harvard Graduate School of Education. http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperity_Feb2011.pdf

Taylor M (2012) 'A big opportunity – likely to be missed', Matthew Taylor's Blog, 12 December 2012. http://www.matthewtaylorsblog.com/public-policy/a-big-opportunity-likely-to-be-missed/

Tomlinson M (2004) 14–19 *Curriculum and Qualifications Reform: Final Report of the Working Group on 14–19 Reform*, Department for Education and Skills. https://www.education.gov.uk/publications/standard/publicationDetail/Page1/DfE-0976-2004

West J and Steedman H (2003) 'Finding our way: Vocational Education in England', CEP occasional paper 18, London: Centre for Economic Performance, London School of Economics and Political Science. http://eprints.lse.ac.uk/13485/1/OP018.pdf

Wilson D, Croxson B and Atkinson A (2004) 'What Gets Measured Gets Done': Headteachers' Responses to the English Secondary School Performance Management System', CMPO working paper 107, Bristol: Centre for Market and Public Organisation, University of Bristol. http://www.bristol.ac.uk/cmpo/publications/papers/2004/wp107.pdf

Wolf A (2011) *Review of Vocational Education – The Wolf Report*, London: Department for Education. http://www.education.gov.uk/childrenandyoungpeople/youngpeople/qandlearning/a0074953/review-of-vocational-education-the-wolf-report