Education, Training, Skills and an International Perspective

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November 2009
Introduction

Education, training and skills have been at the heart of the New Labour agenda. Certainly there has been a genuine expansion of education opportunities and a substantial increase in the resources dedicated to early years, primary and secondary school during the last decade. However, to the consternation of many, this policy focus on education has not generated gains across the entire education system and the underachievement of pupils from lower socio-economic backgrounds remains an endemic problem in the system. So one of the issues facing a new government is the same issue that faced Labour in 1997, namely how do we improve the educational performance of the poorest in our society? There are also of course new issues that any incoming government will need to tackle. As we move forward through the recession we are facing even more pressure on the system as unskilled or low skilled young people leave education and attempt to successfully enter a very difficult labour market. The new government will need to consider whether a demand driven “post Leitch” agenda will meet this challenge (Leitch, 2006). Will attempts to encourage firms to demand higher levels of skill really help these young people to make successful transitions? What will the impact of key supply side policies be? For example, what can we expect to happen following the increase in the compulsory participation and training age to 18? Will these changes actually generate the holy grail of increased skill levels, improvements in productivity and reductions in educational and income inequality?

This paper starts with a brief overview of recent trends in education achievement and compares the UK situation to that in some other countries. It asks whether the UK suffers from specific policy problems in the educational arena: for example does the UK have a particularly high proportion of unskilled workers or too few intermediate skilled workers, as received wisdom has it? The paper then considers potential policy solutions and in particular asks whether as we further increase the proportions of young people in education and training, this will genuinely upgrade skills and increase productivity?

Trends in education achievement and skills

This government has substantially increased the share of resources spent on education over the last ten years or so. The proportion of GDP spent on education rose from 5.2% to 5.9% between 1995 and 2006, the latest year for which OECD publishes comparable data. Per capita expenditure on primary and secondary education increased from 3.6% of GDP to 4.3% over the same period (OECD, 2009). Certainly the government has done much to live up to their claim that education is a top priority, a claim which has been made in the Queen’s speech at the opening of every parliament since 1997\(^1\). So what has happened to education and skills in the UK during this past decade?

Firstly, there has been a large increase in post-compulsory education participation in the UK since 1997, but this is a trend which dates back 40 years rather than just over the past decade.

\(^1\) Thanks go to Ruth Lupton for highlighting this point. See her broader discussion in Lupton et al. 2008.
decade. The proportion of young people remaining on in full time education beyond the age of 16 now stands at 80%, up from 70% in 1997 and from just under half the age group in 1985. Furthermore, the higher education participation rate has also risen dramatically since the 1980s, although it has remained stagnant at around 40% for the last few years.

Despite this increase in education participation, there are some signs that all is not well across the entire system. The proportion of young people (16-18 year olds) who are not in education, employment or training (NEET) has remained at approximately one in ten for much of the period. As we enter recession the proportion of young people who are NEET has started to rise. Data from the Department Children Schools and Families indicates that whilst 56% of those young people who were not in education or training managed to find work in 2007, only 49% did in 2008, the latest year for which we have data. Given economic conditions, the rise in youth unemployment is perhaps unsurprising. However, what must be remembered is that a persistent one in ten young people have, throughout the boom years, found it difficult to enter the labour market and that this is a structural not a cyclical problem.

Conventional wisdom has it that the problem with our NEET group is due to our “long tail of low achieving students”, i.e. too high a proportion of each cohort dropping out of the education system at age 16 with few or no qualifications. In fact the proportion of each cohort not achieving a pass at GCSE at age 16, has reduced from 8% in 1997 to 5% in 2007, whilst the proportion not achieving 5 pass grades at GCSE reduced from 13.6% in 1997 to 10.1% in 2007. In comparison with other countries however, the UK still has a relatively low proportion of young people participating in full or part time education (Figure 1). In 2007, 71% of young people age 15-19 in the UK were in full time or part time education, as compared to 81% for the OECD as a whole, and 84% for the 19 EU countries. These international comparisons may explain the political momentum behind increasing the education and training participation age to 18 by 2015, although since the law does not specify exactly what type of education and training the young person must be enrolled in, it is not as yet clear how this legislative change will be enforced.

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4 Derived from information provided to the Houses of Parliament in response to a Parliamentary Question. See Hansard 21 July Column 936W and http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm080107/text/80107w0045.htm.
Figure 1: OECD full time and part time participation in education at age 15-19 in 2007

Source: OECD. Table C1.2. See Annex 3 for notes (www.oecd.org/edu/eag2009).

Notes:

Focusing on cognitive skills specifically, data from the OECD Programme for International Student Assessment (PISA), suggest that UK pupils are above average in science, and average in mathematics and reading at the age of 15. However, the UK working age population has a deficit of basic skills. This is obvious from international comparisons of the skill levels of adults and the fact that the wage return to basic skills in the UK is much higher than in many other OECD countries, suggesting a skill shortage (Denny et al. 2003; Hansen and Vignoles, 2005). How do we reconcile the low level of skill of a sizeable proportion of UK adults with the PISA result that suggests that UK fifteen year olds perform at a similar level to fifteen year olds in other countries? Part of the answer is that in other countries more basic skills are acquired post age 15 than in the UK. This is, as discussed earlier, partly because in many other OECD countries a larger proportion of young people continue in full time education beyond this age.

The UK therefore has this contradiction, namely that in terms of our average performance, we compare well to other countries, but that at the bottom end we have a

http://www.oecd.org/dataoecd/60/1/39727764.ppt#2417
higher proportion of our population exiting the education system relatively early and achieving very little in terms of qualifications. It is this inequality in the UK system that has most worried New Labour over the last decade.

Gaps in cognitive and non cognitive achievement between socio-economically advantaged and disadvantaged individuals do indeed emerge early in the UK (Feinstein, 2003; George et al. 2007; Barreau et al. 2008; Goodman and Gregg, 2009) and remain entrenched. International test data from PISA confirms that the UK has higher than average socio-economic education achievement gaps. One fifth of deprived children (defined as those in receipt of free school meals) achieved 5 A*-C grade GCSEs in 2007, compared to around 50% of less deprived pupils, although the gap between FSM and non FSM students has reduced somewhat since 2003 (DCSF, 2008). The socio-economic gap, though narrowing somewhat in very recent years (see Figure 2), certainly remains large when you look at university participation and much of the increase in HE participation over time has been amongst more advantaged groups of students (Blanden, Gregg and Machin, 2005; Blanden and Machin, 2008). However, the socio-economic gap in HE participation largely reflects gaps in prior educational achievement rather than barriers to entry to HE (Chowdry et al. 2008). The underlying problem is diverging academic achievement between rich and poor students in the very early stages of their development.

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6 http://www.oecd.org/dataoecd/60/1/39727764.ppt#2390,21,Slide 21
7 The FSM rate has dropped during this period so this narrowing of the gap is not caused by selection bias.
8 This evidence is contentious. Some commentators argue that class based measures of social mobility are superior to those based on income (Goldthorpe and Jackson, 2008). However, other studies confirm that there was no major improvement in social mobility during this period (Ermisch and Nicoletti, 2007).
Figure 2: Higher Education Participation Rates by Socio-economic Class for Young People age 18-20

![Chart showing participation rates by socio-economic class](chart.png)

Source: (DIUS, 2008)

Notes: The figure shows the Full-time Young Participation by Socio-Economic Class (FYPSEC) measure. FYPSEC covers English domiciled 18-20 year old first time entrants to full time higher education at UK HEIs and English FE colleges who remain on their courses for at least 6 months.

Qualifications are another common metric to measure the skill (and by implication the productivity) of our work force. Equating qualifications across countries is notoriously difficult. It is evident however, from Figure 3 that the proportion of the UK population that is unqualified, and by implication lower skilled, is higher than in many other major competitor countries. The UK also has a lower proportion of its population with intermediate qualification levels.
Figure 3 Proportion of the Working Age Population with Different Levels of Qualification by Country

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However, the above figure actually *overstates* the qualification level of the UK working age population as it equates Level 2 General Certificates of Secondary Education (GCSEs) with other more advanced school leaving qualifications in other countries (Steedman et al. 2004).

Thus whether we look at education participation rates, cognitive skill levels or qualification levels, we come to the conclusion that the UK does indeed have a higher proportion of low skilled workers than many other countries. However, it is the interaction between the supply of skill and demand for skill that matters for the economy, an issue we now discuss.

**The value of education and training**

Rather than simply focusing on the stock of qualifications, we also need to understand the demand for skill and hence the economic value of skill in the UK labour market. Despite the expansion in the supply of graduates, UK degrees and higher level qualifications have held their economic value, measured in terms of the wage premium such qualifications attract. This suggests strong demand for such skills and reassures us that the productivity of graduates remains sufficiently high for a degree to command a wage premium in the labour market. However, the *variation* in graduate earnings is increasing, as we move towards a 50% participation rate in higher education and increased heterogeneity of the graduate group. Certainly the economic value of a degree varies substantially by subject and institution (Sloane and O’Leary, 2004; Walker and Zhu, 2005). Furthermore, for the newest graduates, there were also signs that the mean wage premium associated with a
degree was starting to fall, even before the recession. A new government will need to monitor this situation since rising graduate unemployment and falling rates of return to some degrees is likely to occur. This, combined with cuts in public expenditure, will have major implications for both the government and the HE sector itself. How we fund HE will be a pressing issue if the value of some degrees is falling and if public sector investment in HE is being reduced. At the very least, the government will need to protect students by ensuring universities provide sufficient validated information on likely graduate outcomes from different institutions and in different subjects.

At the other end of the skill distribution, it has been long observed that the wage return to lower level qualifications, particularly some new vocational qualifications like NVQ1 and NVQ2, is minimal (Deaden, Reed and Van Reenen 2006; Blundell, Dearden and Sianesi, 2005; Feinstein, Galindo-Rueda and Vignoles, 2006). Thus whilst apprenticeships continue to have a good economic value, many lower level vocational qualifications do not. Recent curricula changes have introduced a raft of new qualifications, many of them at GCSE level or below and with a vocational orientation. A new government will need to determine whether this continual curricula reform is really providing students with productivity enhancing qualifications that yield a good return in the labour market. Before attempting to invent yet more qualifications aimed at the least skilled workers, policy-makers need to also acknowledge that continual reform of the vocational qualification system has come at a price. Firstly, employers struggle to identify the worth of the myriad qualifications now available, and secondly, the school system has to spend a considerable amount of resource adapting to constant changes in curriculum. Letting the system bed down and enabling existing qualifications to be modified slowly may be the only way to allow the system to gain some stability and to incrementally improve the content of lower level vocational qualifications.

Policy Solutions

So looking both backward at what has worked during the last decade or so, and forward to the policy problems an incoming government will face, what are the likely policy solutions?

The evidence base suggests that investment in young children is critically important. Recent evidence from a large Joseph Rowntree funded project confirms the importance of early intervention and the intergenerational persistence of attitudes and aspirations that lead to the lower achievement of poorer children (Goodman and Gregg, 2009). This government has already recognised the importance of early investments in education. There has been a 40% increase in education expenditure in primary schools (since 97) and this has had positive impact on education achievement (Machin et al. 2007). By contrast government initiatives to improve adult skills have not proved as effective. For example, the pilot phase of the *Train to Gain* programme which subsidises firms to provide training to low skilled adults was associated with large deadweight loss (Abramovsky et al. 2008). If cuts in public expenditure on education and training are forthcoming, clearly an incoming government needs to cut with the effectiveness of different interventions in mind.
As has been said, there is a strong intergenerational component to educational achievement and family environment is crucially important in determining pupil outcomes (Goodman and Gregg, 2009; Chevalier et al. 2007; Plug 2004; Sacerdote 2002, Ermisch and Francesconi 2001; Teddlie and Reynolds, 2000; Todd and Wolpin, 2007). Policy-makers need to think about family based interventions, as indeed this government is doing with policies such as Every Child Matters (ECM) and Extended Schools. ECM is a broad collection of policies designed to both focus attention on the most vulnerable students and broaden the outcomes on which schools focus, Extended Schools is encouraging schools to provide additional facilities and out of hours care to children and their parents. The problem with these policies however, is that they are incredibly heterogenous, often general rather than targeted, and they were implemented nationwide without prior robust evaluation. It is therefore extremely difficult to determine whether such policies are actually reducing the socio-economic gap in any outcome. The evidence base on parenting programmes is more comprehensive, with a number of effective programmes that have been used in the US and UK, such as the Family Nursing Partnership, the Incredible Years Programme and SureStart (Olds et al. 1998; Bywater et al. 2009).

Although designing interventions to reduce the socio-economic gap in cognitive and non cognitive outcomes remains a challenge, Goodman and Gregg (2009) conclude that there are a number of key areas that policy-makers need to tackle. These are a) improving the home learning environment of poorer families, b) encouraging poor families to believe that they can control their destiny and that increased effort will result in higher achievement, c) increasing the aspiration of poor parents for their children’s outcomes and d) tackling the behavior problems that poor children are more likely to exhibit e.g. ADHD or conduct disorder. This certainly gives a strong steer as to where future policy innovation should be.

Another question for any new government to consider is whether to further develop the quasi-market that now exists in the school system. Both major parties are now committed to markets and competition in education. In 1988, parents were first given the power to choose their child’s school, with the idea that schools would become more accountable as a consequence and that this would tend to improve educational standards. Yet recent empirical evidence suggests that competition between schools has had only a limited impact on mean education achievement (Gibbons et al. 2008; Burgess and Slater, 2006). Equally, marketisation has not led to big increases in social segregation across schools as was once feared (Gorard et al. 2003; Allen and Vignoles, 2008). So there has been a lack of a competition effect (for good or bad). This is partly because market forces are constrained in the UK and the introduction of parental choice has not radically altered the pre-existing system of allocation to schools according to residential location. Any policy change that frees up the market further, for example by allowing more schools to enter and exit the market, will need to be monitored both for its impact on both mean achievement in surrounding schools and its impact on social segregation across schools.
Although competition may not have had a measurable causal impact on achievement, school league tables have certainly increased the emphasis on the metrics of education, and the key thresholds that pupils are expected to achieve (e.g. 5 A*-C GCSEs). There is a danger that this diverts attention from broader educational goals and away from pupils who are not near particular thresholds. It may also encourage schools to meet government targets e.g. 5 A*-C GCSE via easier routes, for example by encouraging pupils to take easier equivalent qualifications. The government’s response to this problem was to include mathematics and English in the key metric of 5 A*-C GCSE grades to ensure that schools also focus on core academic subjects. Generally, this government has continued to grapple with the tension between setting targets for accountability reasons and yet avoiding schools’ subsequent efforts to meet these targets in less than optimal ways. The new government will no doubt continue to face this problem and the proposed “school report card”, will need to include a carefully considered mix of different measures of school performance. The metrics need to provide sufficient information to guide parents, be broad enough to avoid an overly narrow focus and relevant so that schools can genuinely be held accountable for the outcomes on the card. The latter point is crucial. As has been said earlier, most of the variation in pupil outcomes is not attributable to schools and is instead down to family environment. Holding schools accountable for outcomes that are currently outside their control is problematic and may reduce the motivation of teachers and hence the effectiveness of schools.

Linked to the idea that there is a real danger of policy over load, an incoming government needs to think about only adopting cost effective policies. For instance, we know that reductions in the pupil teacher ratio or indeed the pupil adult ratio are relatively costly in terms of the benefits they produce. Recent evidence suggests that the massive increase in the use of teaching assistants in the UK has not been associated with significant achievement gains (Blatchford et al. 2007). Improving teacher quality is likely to be more successful, although we are some way from knowing how best to do this (Rivkin, Hanushek and Kain, 2005; Slater et al. 2009). We need to find cost effective ways to improve teaching quality. For example, there is evidence that the increase in IT expenditure in schools has produced significant achievement gains in some subjects, presumably by improving the effectiveness of teaching (Machin et al. 2007). Centrally devised high quality lesson plans and resources for teachers, delivered via the internet, might be another way to help improve lesson quality and free up teacher time. Such potential interventions do however need to be fully evaluated prior to national implementation.

The new government will also need to implement the raising of the education and training participation age. As mentioned earlier, it is not clear what real impact this legislative change might have. However, policy-makers can learn from the experience of a robustly evaluated programme, namely the Education Maintenance Allowance (EMA). The objective of the EMA was to raise post-compulsory educational participation of young people from low income families. EMA is a means tested allowance paid weekly in term time to students aged 16-19 who staying on in full time education. In 2008,
556,702 young people aged 16-19 claimed EMA, around 35% of each cohort\(^9\). One unique feature of the EMA is that it was evaluated prior to national implementation (Dearden et al. 2009)\(^10\). Whilst Dearden et al. (2009) found a small significant impact from EMA on participation (2-3 percentage points) they found no significant impact from EMA on female qualification rates and only small effects for males. In other words, although paying poorer students to remain on in full time education may have induced them to do so, the impact on their educational achievement in the long run is not proven. Thus the decision to extend compulsory education and training to age 18 will not necessarily lead to genuine increases in young people’s qualification and skill levels.

Indeed, the challenge of teaching young people who would otherwise have exited the school system in a way that both engages them and boosts their skill should not be understated. The system singularly fails to achieve this for around one in ten young people who currently leave the education system at 16 with insufficient skills to enable them to find work. Engaging in economically valuable vocational training, such as apprenticeships, is seen as the answer. However, just as schools struggle to engage these disadvantaged young people, so firms do not want to employ or train them. Providing these youngsters with sufficient cognitive and non cognitive skill to enable them to access work, further education or training will continue to be a critical challenge facing the incoming government.

And what about adults who have passed through the system and are currently are languishing in low skill jobs or unemployment? There is only weak evidence that adult policy interventions to improve adult cognitive skills can be successful. For example, trying to improve literacy and numeracy in adulthood has proved very difficult to do (Torgeson et al 2004). When the state intervenes to encourage adults to up skill (or at least get qualifications) often it has little impact on their wages (Blundell, Dearden and Sianesi, 2005; Feinstein, Galindo-Rueda and Vignoles, 2006). State interventions for adults are often of poor quality (NAO, 2008) and target driven. Most fundamentally, Cunha and Heckman (2008) have suggested that cognitive skills are less malleable later in life and policy focus might better be on non cognitive skills, which are also rewarded in the labour market. Leitch (2006) also suggested that there is insufficient demand for skills from employers, and that employers do not invest enough in the training of their employees. The policy agenda has therefore been to encourage greater levels of employer training and to enhance employers’ input into the training system. Occupational licensing, Investors in People and Sector Skills Councils can all be seen as attempts to encourage employers to upskill their work force, and to play a greater role in the design of qualifications.

It is not clear what the impact of policy efforts to stimulate the demand for skill has been. Empirical evidence suggests that employer provided training is beneficial to both workers

\(^9\) This proportion is calculated from the Longitudinal Study of Young People in England and the Youth Cohort Study http://www.dcsf.gov.uk/rsgateway/DB/SBU/b000795/YCS_LSYPE_Bulletin_final.pdf
\(^10\) The evaluation design was based on a longitudinal cohort study of random samples of young people living in EMA pilot areas and control areas.
and firms, and that there are potentially sizeable spillovers from training (Dearden et al. 2006). However, UK employers actually train their workers to a greater extent than employers in other countries, although they do invest a marginally lower proportion of labour costs on training (Hogarth, Bosworth et al. 2009). Thus whether there really is a deficiency of demand for skill in the UK labour market remains unproven and on the basis of existing evidence it is very difficult to determine whether attempts to boost demand for skill will be effective, at least without resorting to compulsion. Furthermore demand side policies to encourage employer training, such as Train to Gain, need to be assessed for their deadweight loss before being implemented on a wide spread basis.

So in summary, the incoming government has a full agenda on education, training and skills. The main messages are that we should intervene early rather than late. Although little consolation for the current generation of low skilled adults, in the long run, interventions that improve the skills of young people will resolve our current problem of low skilled adults. Equally simply increasing participation post 16 will not automatically mean rising skill levels. Instead, specific (and early) family focused interventions are needed to genuinely improve the skill levels of deprived young people. However, after more than a decade of constant policy reform, politicians might remember that the system needs time to respond to change and less may be more in this particular policy domain.

References


Leitch Review of Skills (2006), Prosperity for all in the global economy- world class skills, Final Report, December, HMSO.


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