BIS | Department for Business Innovation & Skills

SOCIAL MOBILITY

A Literature Review

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Social Mobility: A Literature Review[1]

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EXECUTIVE SUMMARY

- Improving social mobility is widely seen as desirable, though the political challenges of pursuing a relative definition of social mobility – implying downward mobility for individuals from rich/middle income families – should not be underestimated.

- We know that countries with higher income inequality tend to have lower social mobility (at least when using income-based definitions of mobility). This is important in terms of understanding low social mobility in the UK and has some important consequences. First, it is likely to be very hard to increase social mobility without tackling inequality. Second, if tackling inequality involves measures to compress the wage distribution, this may also have long-run effects on efficiency and economic growth; in particular, there may be policies which could increase mobility but *reduce* economic growth.

- Policies aimed at improving social mobility are often targeted on the most disadvantaged individuals and specifically the least skilled. Perhaps counter-intuitively, this may not be the most efficient way of improving mobility. Evidence on skill complementarity suggests that investing in individuals with only very low levels of skill will be costly, and that achieving gains in their cognitive skills in particular will be difficult. For the individual however some of these investments may still mean an increase in wage.[6] Furthermore, there is increasing evidence that the UK labour market is "hollowing out", i.e. that there are fewer jobs in the middle, though the picture does look somewhat different if one considers jobs by skill level rather than income level and this evidence is still contentious. This feature of the labour market does, however, have potentially important implications for how we might intervene to improve social mobility. It suggests that it will be harder and more costly to help those at the bottom to move up a bit than it will be to help those somewhat above the bottom to move higher. It is therefore worth considering interventions that are not exclusively targeted at the bottom of the skill/deprivation distribution. It is also worth bearing in mind that the

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[6] McIntosh (2010) The economic value of intermediate vocational education and qualifications", UKCES

recent increase in the supply of graduates and highly skilled workers has not (as yet) resulted in a fall in the graduate wage premium. However, according to economic theory further increasing the supply of highly skilled workers in the absence of continuing dramatic increases in the demand for skills is likely to, reduce the upward pressure on wages at the top end. This therefore has the potential to reduce wage inequality (or at least slow down increases) and therefore help (in relative terms) those at the bottom (although this has not happened to a very large extent in the UK labour market to date).

- The fact that early investments have the potential to be more productive than later investments does not preclude the need for later investment, nor does it suggest that well designed late interventions cannot be effective. In fact, evidence suggests that early investments are most productive if they are followed up with later investments.

- The existing evidence suggests that cognitive skills are highly valued in the labour market, including basic skills such as literacy and numeracy which have higher economic returns in the UK than many other countries. However, there has not been a lot of research in this area and it is difficult to find evidence of effective interventions in adulthood that improve cognitive skills.

- There is emerging evidence that later inventions may be more effective if they are targeted at *non cognitive* skills (which we use to refer to a multiplicity of skills, from time management to teamwork and leadership skills, and from self-awareness to self-control). Certainly there is clear evidence that such non cognitive skills are highly valued in the labour market. Investment in policies which target non-cognitive skills specifically may therefore be an area which BIS should consider.

- Finally, interventions that change students' decisions at key points (e.g. the decision about whether to stay in full-time education beyond age 16), rather than their skills directly, could still have a positive impact on education outcomes and hence social mobility. These will be most productive where they also increase subsequent educational attainment.

There are various potential areas of intervention for BIS, specifically in the areas of **employment law**, **further education and skills** policy and **higher education**. However, an important general point to make is that many of the possible interventions, particularly those aimed at improving individuals' cognitive skills, are likely to move individuals up from the lower/middle rather than the bottom deciles of the skill/deprivation distribution.

Employment law

- ***Maternity/paternity leave***: in the UK context – in which unpaid parental leave is already available for up to 52 weeks following the child's birth (paid leave being slightly lower at 39 weeks) – the evidence suggests that a further increase in leave may have little or no effect in terms of increasing social mobility (and may even hinder it). Given that further extensions of parental leave may negatively affect firms, in terms of productivity and profitability, we can conclude that there is no strong case for extending parental leave.

- ***Minimum wage legislation***: the minimum wage has acted to reduce wage inequality and has not had negative effects on employment or indeed on the long run decisions made by young people to invest in more education (at least on the basis of evidence to date, which has largely not covered the recent recessionary period). This suggests that it may have had some positive effect on social mobility, though the impact of any future rises in the minimum wage is less clear.

Further Education:

- ***The role of FE:*** FE colleges tend to attract individuals from lower socio-economic backgrounds, as well as adults returning to learning. FE colleges are therefore a *potential* instrument for up-skilling young people and adults from deprived backgrounds. However, some of the lower level qualifications acquired in FE (such as NVQ 2 qualifications) do not improve individuals' labour market prospects in every sector. A key challenge for BIS here is to ensure that FE students acquire skills and qualifications that are genuinely valued by the labour market, and thus stand a chance of improving social mobility.

- ***Other benefits of FE:*** the non-economic benefits from education are measurable. The evidence suggests that staying on in school and acquiring even low wage return vocational qualifications may be worthwhile from both an individual and a societal perspective. However, since we measure social mobility in economic and occupational terms, investing in qualifications that are not valued in the labour market will not tend to improve mobility.

- ***Policies to encourage pupils to stay in full-time education***: the Education Maintenance Allowance successfully increased participation in post-compulsory education for 16-19 year olds from low income backgrounds, and to a lesser extent also increased their attainment; moreover, its benefits outweighed its costs (despite high deadweight). This suggests that future policies along the same lines – particularly if they are better targeted on the most deprived – may have the potential to improve social mobility, although it is crucial that attainment and not just participation are affected. It is less clear whether the imminent raising of the education participation leaving age to 18 – which will essentially force increased participation amongst poorer pupils – will have a similar effect, given that students will not be required to remain in *full time* education.

Skills:

- ***Apprenticeships***: the apprenticeship qualification is highly valued by the labour market (with returns exceeding those for degrees in some instances). However, apprenticeships are more likely to be taken by middle than low income students in the UK at least, hence such qualifications are likely to improve the social mobility of those in the middle rather than at the bottom of the distribution. Looking across different forms of FE learning such as college apprenticeships are more likely to be taken up by low income individuals.[7] We also need to be aware that, while apprenticeships are economically valuable, there is evidence from other countries that they can potentially lead to over specialisation and prevent

[7] Apprenticeships Pay Survey and Prior Qualifications Survey (forthcoming)

occupational and sector mobility. Recent UK evidence suggests that more portable vocational qualifications may have more value in the labour market.

- ***Training programs***: firms tend to offer training to those who are most likely to benefit. In general, these tend to be more skilled workers. (This is good independent evidence of complementarity in investments over time.) So employer provided training may reinforce existing differentials. However, government programmes which encourage or force firms to provide training to the lowest skilled (e.g. *Train to Gain*) have generally not produced gains in the earnings of those receiving training and have also resulted in high deadweight loss – however the evidence is not unambiguous. This suggests that this is not a viable route through which to increase social mobility.

- ***Lifelong learning***: while lifelong learning that leads to genuine upskilling may have a significant impact on individuals' earnings and hence potentially on social mobility, lifelong learning that does not lead to a qualification, or leads to a lower level qualification than already held, will not necessarily lead to earnings gains and hence may be unlikely to improve social mobility. Moreover, there is some emerging evidence that, at least in the short term, the labour market outcomes of young people working in jobs without training are as good as those working in jobs with training. This does not preclude the notion that some form of targeted support for individuals with low qualification levels to encourage specific types of lifelong learning would not be an effective route through which to increase social mobility; however, focusing on the improvement of non-cognitive rather than cognitive skills later in life may be more effective.

- ***Intergenerational transmission of skills:*** there is some evidence that high intensity (high cost) parenting programmes targeted at the very poor – such as the Family Nurse Partnership – improve a variety of mother and child outcomes, including the mother's employment prospects and the child's language development. However, the evidence from the majority of lower intensity (lower cost) interventions is weak, suggesting that this is not a viable way through which to affect social mobility.

Higher Education:

- ***Widening participation agenda*****:** there are a variety of explanations for why students from poorer backgrounds do not go on to HE. Key amongst these is prior attainment, including the decision about whether or not to stay in full-time education beyond age 16, which suggests that earlier interventions to improve such outcomes are likely to be important here as well. On the other hand, credit constraints do not appear to play a major role in driving participation once we condition on A-level scores. Moreover, there does not appear to be a dearth of aspirations for HE, even amongst low SES students. This suggest that interventions whose aim is to improve aspirations, such as Aimhigher, must also be shown to have improved HE participation if they are to offer any hope of improving social mobility. Finally, the variation in returns to HE by institution as well as degree subject suggests that simply encouraging HE participation per se will not be sufficient to ensure that we improve social mobility, but there is a need for more robust research evaluating interventions of this nature.

- ***Information, advice and guidance:*** if students from disadvantaged backgrounds underestimate the returns to a degree or overestimate how much it will cost them to obtain one, then interventions which aim to improve such information should increase participation. There is relatively little evidence about the effects of such policies to date, particularly in the UK, although one study in the US suggests that helping students from low income families to complete a student loan form may increase their likelihood of HE participation. However, the significant heterogeneity in returns by institution and degree subject suggest that much better guidance is needed for poorer students to navigate the HE system effectively, and there is a need for more evidence on interventions in this area.

Concluding remarks

The evidence clearly indicates the importance of both cognitive and non-cognitive skills in explaining social mobility or lack thereof. However, improving the cognitive skills of unskilled adults is likely to be a difficult way to improve social mobility, given the existing evidence that interventions to improve adults' cognitive skills are often costly and/or ineffective. However for the individual some evidence shows an increase in wages of those taking VQs.[8] The evidence, whilst very limited, is somewhat more optimistic about the scope to influence adults' non cognitive skills. Certainly there is a pressing need to improve the evidence base on the effectiveness of specific teen year and adult interventions, whether they are designed to impact on cognitive or non cognitive skills.

Moreover, policies to improve the social mobility of individuals in the middle of the distribution rather than the bottom may be more (cost) effective. Specifically, BIS should consider policies to increase the educational attainment and HE participation of those who have already gained skills and qualifications in school. This approach will have the added benefit of increasing the supply of skilled labour, reducing wage pressures at the top end and potentially reducing wage inequality. However, there is also a need for more research to identify high return interventions for the lowest skilled, to ensure that they don't get left behind.

It is crucial to recognise, however, that if policy is to improve social mobility via improvements in individuals' skill levels, then there must be genuine gains in skill levels, and the skills acquired must be valued in the labour market. We must avoid previous policy mistakes that tended to focus on qualification acquisition as an end in itself without recognising the need to bring about genuine improvements in skills levels.

[8] Jenkins et al (2007) "The returns to qualifications in England: updating the evidence base on level 2 and level 3 vocational qualifications",

INTRODUCTION

The structure of the report is as follows. We start with a brief overview of the measurement of social mobility, highlighting key issues as they relate to the policy concerns of the Department for Business, Innovation and Skills (BIS). We then provide a condensed summary of the key messages from the social mobility literature, with the aim of identifying sources of contention or areas in which the literature has relevant messages for BIS policy priorities. We end with an assessment of the effectiveness of select policies within each of the key areas of BIS policy responsibility, and offer some concluding remarks. We exclude discussion of higher education finance and related topics, such as the recently announced national scholarship programme, since these issues have recently been reviewed by Lord Browne in his Independent Review of Higher Education Funding and Student Finance.[9]

SECTION 1

We start by defining social mobility and outlining the implications this has for policy.

What is social mobility?

Social mobility is a tricky concept to define, but is often used to refer to the ability of individuals from disadvantaged backgrounds to move up in the world, akin to the notion of equality of opportunity. It is difficult for policymakers to target social mobility directly, so throughout this paper, we will be referring to policies that we might expect to affect some of the key *drivers* of social mobility, including income, education and occupation.

Relative vs. absolute mobility:

According to documentation we received, the Government is committed to a relative measure of social mobility. The political challenges of pursuing a relative definition of social mobility – which necessarily implies downward mobility for children from rich/middle income families – should not be underestimated. For BIS in particular, this has implications if, for example, one needs to see the relative higher education (HE) participation rate for individuals from higher socio-economic status (SES) backgrounds decline relative to the HE participation rate for lower SES groups.

Equity vs. efficiency:

Greater levels of social mobility are widely seen as desirable from an equity perspective. However, some measures that may improve social mobility, such as compressing the wage distribution, may have long run effects on efficiency and

[9] See http://hereview.independent.gov.uk/hereview/ for full details.

economic growth. Thus all interventions need to be considered along both dimensions.

Further, with limited resources, the investments we make in policies to increase social mobility must be cost effective. Undertaking interventions to improve social mobility at the very bottom of the social status or income distribution may be more expensive than interventions to improve the social mobility of those nearer the middle of the distribution. This means that programmes targeting individuals at the bottom of the distribution need to produce a considerably higher return for them to be cost effective compared to programmes targeting individuals in the middle of the distribution.

Research to date has generally not been very good at identifying such high return programmes, which suggests that from an efficiency perspective, it might be better to focus on helping those nearer the middle (e.g. 20^{th}-50^{th} percentiles) to move up the distribution rather than focusing resources on trying to help the bottom 10 percentiles. Of course, this has equity implications. This point is particularly relevant for BIS, since designing cost effective interventions to improve the cognitive skills (by which we mean IQ, literacy, numeracy, and so on) of those at the very bottom of the achievement distribution is (on the basis of existing evidence reviewed below) likely to be difficult and potentially very expensive.

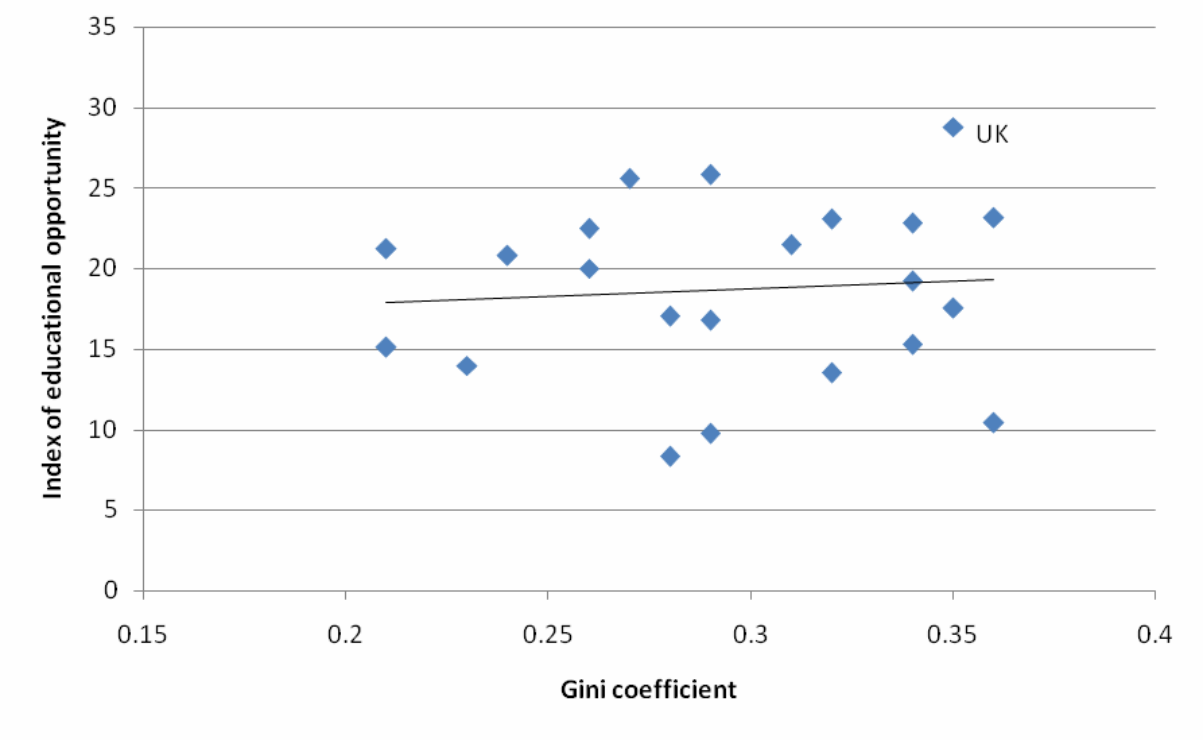
Inter- vs. intra-generational mobility:

Policies to improve intra-generational inequality, such as interventions to boost individuals' skills, are also likely to impact on inter-generational inequality (unless the entire distribution shifts upwards as a result), but the extent to which intra- and inter-generational mobility are affected may vary. Moreover, the length of the policy window is clearly different for intra- and inter-generational mobility. This issue has particular relevance for BIS given that many of the potential policy interventions under its control require investments which may only reap rewards in terms of inter-generational mobility some years down the line. For instance, efforts to improve parenting skills might not necessarily have an immediate effect on the parents' economic situation but may impact on their children's education and income in future. In a world in which it is often necessary to demonstrate instant impact, it is important to ensure that such long-term goals are not forgotten.

Relationship between social mobility and income inequality:

The relationship between income inequality and social mobility tends to be stronger if one considers income measures of social mobility as opposed to those based on education. If you measure social mobility using an index of educational opportunity (defined as the effect of family background on student performance), then there does not appear to be a strong relationship between income inequality and social mobility (see Figure 1 below).

Figure 1: Relationship between the Gini coefficient and an index of educational opportunity in OECD countries



Source: authors' calculations using Gini coefficients from the mid 1990s based on OECD statistics (available at: http://stats.oecd.org/index.aspx) and educational opportunity index figures taken from Schütz, Ursprung & Wößmann (2008).

On the other hand, if you measure social mobility using intergenerational income elasticity (i.e. the extent to which parents' income predicts their children's income), then a much stronger relationship emerges, with high income inequality countries invariably experiencing lower social mobility (see Figure 3 of d'Addio, 2007).[10] This latter finding may be at least partially explained by the fact that there will be a larger gap in income between those at the 20th percentile and those at the 50th percentile (for example) in countries with more unequal income distributions, such that individuals will have to increase their income by a greater amount in order to move the same number of places up the distribution. The experience of children in homes at the 20th and 50th percentiles is also likely to differ by more in high inequality countries, as measured by the material goods available to them and potentially the time parents have to spend with their children as opposed to at work (with consequent effects on their children's educational and economic outcomes). The mechanisms through which income influences social mobility are discussed below but the key point here is that the UK labour market has particular features that inhibit social mobility.

One relevant feature of the UK labour market is that, as in the US, there has been a rise in the demand for skill (Goldin & Katz, 2008; Machin, 2011). Further, the UK has

[10] This can be reconciled with the findings in Figure 1 if (for example) countries with high income inequality also tend to experience high returns to education (which seems plausible in the UK).

increasingly developed a U-shaped labour market, with the well known “hollowing out” of intermediate skill jobs in the middle of the distribution (Autor, 2010, Figure 6; Goos et al. 2007, 2009). This pattern is also found in the US (to a lesser extent), and in Germany, Austria and France, though the picture does look different if one considers jobs by skill level rather than income level and this evidence is still contentious. This feature of the labour market does, however, have potentially important implications for the ways in which we might intervene to improve social mobility.

Firstly, attempting to move individuals from the bottom to the middle of the skill/income distribution may be harder, as there are fewer jobs in the middle (though in the longer term increasing the supply of intermediate skilled workers may encourage firms to up-skill jobs in order to employ such workers). Secondly, we know that in the US and the UK there has been a stagnation of the enrolment rate in HE and, until recently at least, the demand for skilled workers has outstripped supply. This has pushed up the relative earnings of graduates and increased wage inequality, with consequences for social mobility. The fact that the economic return to a degree has not fallen suggests that if we could genuinely up-skill people, there would be sufficient demand for more skilled graduates. There is a crucially important caveat here, however: recent UK evidence suggests that not all degrees lead to economically valuable skills and hence simply increasing the graduation rate will not necessarily be sufficient; what people study at degree level matters too (Walker & Zhu, 2003).

Putting the issue of degree subject on one side, this interpretation of the UK labour market and its impact on social mobility has some important implications. It suggests that moving those in the middle of the skill distribution to higher levels of education may be easier than moving those from the bottom of the distribution. This would improve their social mobility directly, however it is also worth noting that further increasing the supply of highly skilled workers will, in the absence of continuing dramatic increases in the demand for skill, inevitably tend to reduce the upward pressure on wages at the top end. This therefore has the potential to reduce wage inequality (or at least slow down increases), although this has not happened to a very large extent in the UK labour market to date.

SECTION 2

We now consider some of the key messages to have emerged from the (large) social mobility literature in the UK and elsewhere, restricting our comments to evidence that is central to the particular policy challenges faced by BIS.

Early vs. late intervention

The empirical, and indeed the theoretical, evidence is clear that interventions which are made earlier in a child’s development are: a) likely to be more effective in boosting a child’s cognitive achievement, and b) may be a necessary requirement if a child is to develop good cognitive skills and have successful economic and non-economic outcomes (Currie, 2001, Carneiro & Heckman, 2003; Waldfogel, 2002, 2004; Shuetz et al. 2008; Leuven et al. 2004, Esping-Andersen 2004).

Early interventions are likely to be more productive both because neurological evidence suggests that the brain is more malleable at earlier ages and because there are more years over which the returns can accumulate. Yet the fact that earlier interventions have the potential to be more effective does not preclude the need for later investment, nor does it suggest that well designed late interventions cannot be effective.

This is supported by growing evidence that our understanding of brain development has been somewhat flawed. While the evidence still supports the notion that sensitive periods for primary function (e.g. vision, movement, memory) tend to occur very early in life, there is now increasing evidence that further brain development in adolescents and adults is possible. In particular, Blakemore (2010) and Blakemore & Choudhury (2006) suggest that performance on tasks of executive function and cognitive control continues to improve as late as adolescence and early adulthood. For example, Maguire, Gadian, Johnsrude, Good, Ashburner, Frackowiak & Frith (2000) show that the hippocampus (which is essential for 'spatial memory') is larger in London taxi drivers than in non-taxi drivers, and, moreover, that its size is related to the amount of time the person has been driving taxis. Similarly, studies of dementia have shown that adults who use their cognitive skills are less likely to suffer some of the effects of dementia, though this remains a controversial area of research and there is a need for further random control trials (Valenzuela et al. 2009).

Another important point here is that there is a strong body of empirical evidence which suggests that both skills are passed on across generations (e.g. Blanden et al, 2010; Crawford, Goodman & Joyce, 2010). This implies that state investments in the early years are often about substituting for poor quality parental inputs. Hence to invest in parents to improve their skills is to invest in the early years of a child's life.

In summary, although early intervention is likely to be highly productive in improving children's academic capabilities, this does not imply that later investments are not productive. In particular, the evidence reviewed in the next section suggests that interventions that change students decisions at key points (for example, the decision about staying in full-time education beyond age 16), rather than their capabilities, could still have an impact on educational outcomes and hence social mobility (Jackson et al. 2007).

Complementarity of investments at different ages and across different skills

Building on the arguments outlined above, there is some evidence that if early investments are not followed up by later investments, they may not produce genuine long-term benefits. This would reinforce the case for later intervention. Certainly one needs to determine whether a one-off investment in early childhood that is not followed up can really lead to long run improvements in child outcomes. In fact there is remarkably little evidence on this. This is partly due to the methodological challenges involved in measuring long-run effects from early interventions. In particular, individuals tend to drop out of very long-term studies and as a consequence, the studies that have suggested long-term, non-decaying effects tend to be based on extremely small and selected samples.

Small sample sizes aside, Barnett (1998) concludes that many but not all pre-school programmes show a positive long-term impact on educational attainment but not on IQ, though the magnitude of the effects vary according to the programme. By contrast, Currie & Thomas (2000) found that the HeadStart programme (a US initiative similar to the UK's Sure Start) had minimal longer-run impact on ethnic minorities since they went on to poor quality schools after the initial early intervention was over. This suggests that even an effective pre-school programme, such as HeadStart, still requires ongoing further investment if long-term gains are to be secured.

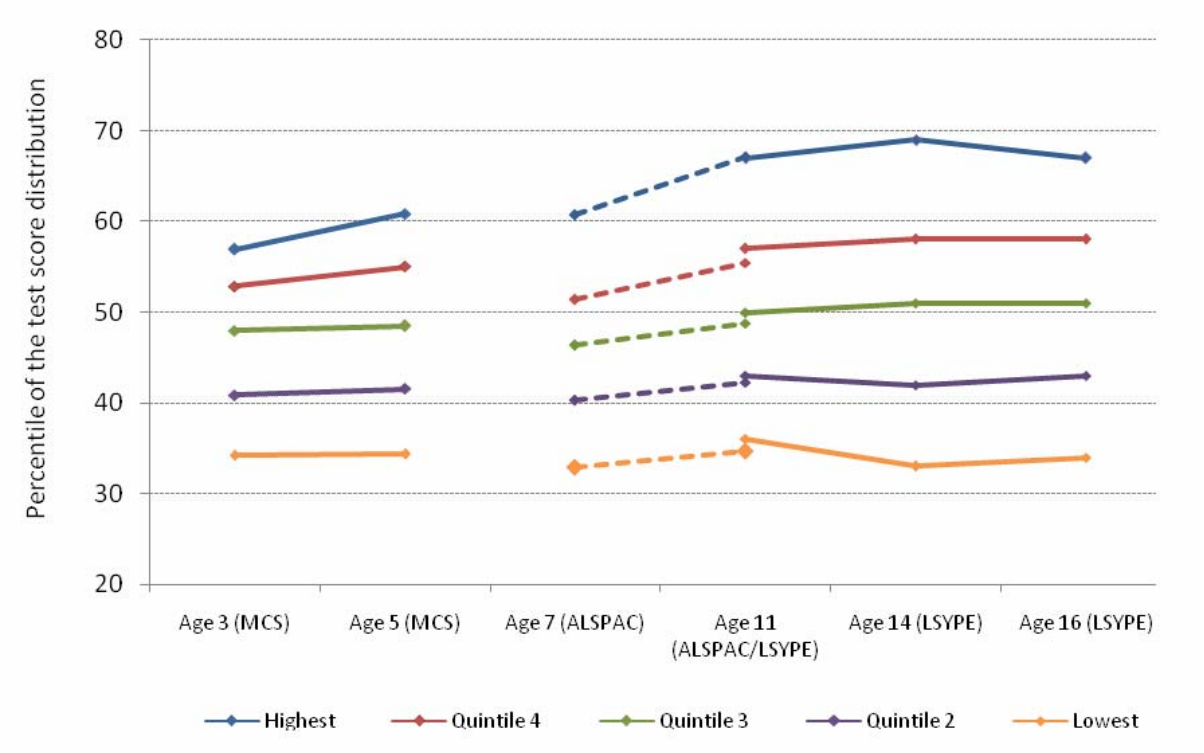
Work by Katherine Magnuson on parenting programmes also did not find long-run persistent effects, although in many cases, parenting programmes do not produce short-run effects either (Waldfogel, 2004). Equally there are UK programmes and early interventions that appear to have had at least medium-term effects, for example the literacy and numeracy hours (Machin & McNally, 2004). The observed medium-run impact of such interventions may be at least partly attributable to the fact that they were adopted during a period when there were continued investments made to improve the quality of schooling in the UK and hence the children who benefited from these programmes did indeed receive further investments.

Figures 2 and 3 provide some empirical support for this argument, by showing how educational attainment and non-cognitive skills (which we tend to use to refer to a multiplicity of skills, from time management to teamwork and leadership skills, and from self-awareness to self-control, which in this case are collectively measured by the Strengths & Difficulties Questionnaire[11]) develop over time. These figures are constructed using data from three overlapping cohort studies: the Millennium Cohort Study (MCS)[12], the Avon Longitudinal Study of Parents and Children (ALSPAC)[13], and the Longitudinal Study of Young People in England (LSYPE).[14]

Figure 2 highlights the large socio-economic gaps that already exist in cognitive skills by age 3, but also shows how these gaps increase over time, particularly during the primary school years. This may at least partially occur as a result of the high degree of sorting into primary schools in England on the basis of socio-economic status (e.g. Burgess & Briggs, 2010), with the poor cognitive skills of students from low socio-economic backgrounds worsened by poor quality schooling, and the better cognitive skills of students from higher socio-economic backgrounds improved by higher quality schooling. The widening gaps are also likely to reflect differential parental investment in low and high SES children over time. This reinforces the findings elsewhere in the literature (and discussed above) of the complementary nature of skills over the lifecycle.

[11] The Strengths and Difficulties Questionnaire (SDQ) is a behavioural screening instrument designed for 3-16 year olds, with 5 questions in each of the following 5 domains: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and pro-social behaviour. See http://www.sdqinfo.org for more details.
[12] See http://www.cls.ioe.ac.uk/text.asp?section=000100020001 for more details.
[13] See http://www.bristol.ac.uk/alspac/ for more details.
[14] See https://ilsype.gide.net/workspaces/public/wiki/Welcome for more details.

Figure 2: Educational attainment by quintile of socio-economic status, across surveys and ages

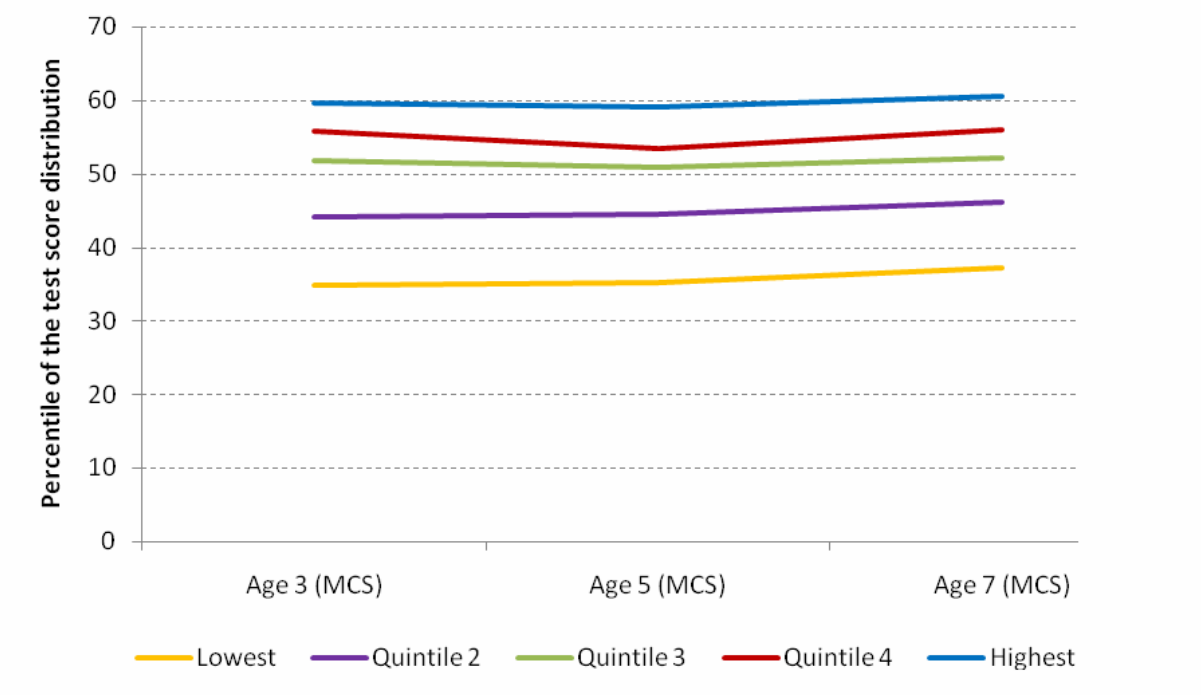


Source: Goodman & Gregg (2010).

Notes: each sample of children is divided into fifths, ranked according to a constructed measure of socio-economic status which is based on their parents' income, social class, housing tenure, and a self-reported measure of financial difficulties. The dotted lines in the middle, covering ages 7 to 11, reflect the fact that this sample is derived from ALSPAC data, which is a sample of children from the Avon area, rather than a national sample, and as such are not directly comparable to the other datasets used.

Figure 3 focuses on the development of non-cognitive skills amongst children in the MCS (severe attrition in the ALSPAC sample means that the figures for older children are not directly comparable, and non-cognitive skills are not measured in the same way in the LSYPE). In contrast to the findings for cognitive skills, there appears to be some narrowing of the gap between age 3 and age 7, suggesting that the investments that are made in respect of non-cognitive skills (either by the state or by parents) may be more effective amongst children from the poorest backgrounds (although there may be some censoring of the scores of high SES children, given that this is a measure of behavioural difficulties). To the extent that such skills are valued in the labour market (and are able to compensate for poorer cognitive skills), this provides some hope for the value of targeted non-cognitive interventions as a means of increasing social mobility. The evidence base on the effectiveness of interventions to improve non-cognitive skills amongst older teenagers and adults is discussed in more detail below.

Figure 3: SDQ score by quintile of socio-economic status, by age in the MCS



Source: Authors' calculations for the purposes of this paper.

Notes: the MCS sample is divided into fifths, ranked according to a constructed measure of socio-economic status which is based on their parents' income, social class, housing tenure, and a self-reported measure of financial difficulties.

The argument that we need both early and later investments is also important from a cost effectiveness perspective. The fact that many early interventions are effective implies that these early interventions will reduce the costs of any later investments. Hence a complementary programme of sustained investment is likely to be more cost effective.

There may also be complementarities between investments in different types of skills at the same age. For example, children who are able to behave appropriately in class are more likely to benefit from classroom instruction. While there is relatively little evidence on the effectiveness of interventions which take such complementary approaches, there is evidence of increasing labour market returns for individuals with endowments of both cognitive and non-cognitive skills (e.g. Weinberger, 2010), which suggests that interventions which simultaneously target both cognitive and non-cognitive skills may also be worthy of further consideration.

Importance of non-cognitive skills, particularly at later ages:

Much of the evidence about the beneficial effects of early intervention is on the specific issue of cognitive skills. Cognitive skill development is an important route through which social mobility can occur, i.e. individuals can acquire more education as a consequence of interventions that improve their cognitive skill, they can go on to

gain higher levels of qualifications and hence earn relatively more than they would otherwise have done. However, there are other routes to improved labour market outcomes, for example via the development of *non-cognitive skills*. It is important to make some general points about the role of these skills, as they are a potentially important area for BIS investment.

The importance of non-cognitive skills for labour market outcomes – as well as a whole range of other outcomes, including teenage pregnancy and involvement in crime – has long been recognised (e.g. Bowles, Gintis & Osborne, 2001; Heckman, Stixrud & Urzua, 2006; Carneiro, Crawford & Goodman, 2007; Borghans, Duckworth, Heckman, & ter Weel, 2008), and indeed seems to be increasing over time (e.g. Weinberger, 2010).

In the UK context, Blanden, Gregg & Macmillan (2007) relate the rising returns to non-cognitive skills to income inequality. In their analysis of the 1958 and 1970 British birth cohorts, they measure the relationship between non-cognitive skills, such as self esteem and anxiety, and wages. They find rising returns to these non-cognitive skills and suggest that the rise in the value of these skills in the labour market partly explains the rise in wage inequality between the two cohorts. This implies efforts to improve non-cognitive skills can potentially impact on social mobility both directly, in terms of improving the labour market outcomes of individuals, and indirectly, by increasing the supply of such skills and reducing the premium paid for them and hence inequality in wages. It is of course important to note that the same study also found that a similar proportion of social mobility is “explained” by cognitive skills as non-cognitive skills. Hence we do not argue that cognitive skills are unimportant, but merely seek to highlight that non-cognitive skills are important too.

Moreover, the neurological evidence cited above suggests that adolescence is an important time for the development of regions of the brain involved in what we would describe as non-cognitive skills, such as self-awareness, self-control, multi-tasking and planning (Blakemore, 2010). This supports evidence from Heckman and co-authors that later interventions that target non-cognitive skills may be more effective than those that target cognitive skills (e.g. Cunha, Heckman, Lochner & Masterov, 2006).

However, it is worth pointing out that the evidence base on the effectiveness of specific non cognitive interventions is still emerging and is by no means strong. In general, the evidence available to date suggests that interventions to influence brain development in later years are theoretically possible, and that later investments in non-cognitive skills are potentially more productive (at lower cost) than interventions in cognitive skills. However, this is by no means certain. Whilst more evidence on this is needed, it may be fruitful for BIS to explore the possibility of supporting policies to improve non-cognitive skills amongst adolescents and young adults. We discuss some of the most successful policies explored to date in Section 3.

Relative merits of high intensity, extremely focused interventions vs. low intensity, more broadly targeted interventions:

Much of the evidence to date highlights returns to high intensity early interventions (e.g. Perry Pre-School in the US), but there is less evidence about the benefits of lower intensity interventions targeted at a wider population. Some programmes in the UK, such as SureStart, are less intensive and yet have been effective in raising the cognitive achievement of children. This issue of intensity is clearly relevant to the equity vs. efficiency debate outlined above and also raises questions about the level of investment that is required to produce long-term benefits. Most of the specific interventions that we review below are not accompanied by a full cost-benefit analysis (CBA) to indicate their long-run effectiveness, and there remains an urgent need for policy interventions in this domain to be properly evaluated. Only then will we be able to determine whether high intensity programmes are necessary or whether some low intensity interventions might be equally successful.

Wider context issues:

Clearly there are a number of ways in which government policy might improve social mobility: skills and education policy is just one potential area for intervention. For example, labour market policies in their own right, and in conjunction with education and training policies, are also likely to be important for tackling social mobility and unchaining the cross-generational links in the drivers of mobility. This means that many potential interventions to improve social mobility will have cross departmental interest. This is of course the justification for a government wide approach to improving social mobility. In this review we consider only areas of direct interest to BIS but are mindful of other departmental interests in this issue (like active labour market policies – such as the New Deal for Young People – under the remit of the Department for Work and Pensions).

SECTION 3

The value of Sections 1 and 2 is that they allow us to understand how particular policies should be evaluated and how they might fit with other elements of a strategy. Below we draw on evidence from effective policy interventions to illustrate our arguments/points. In particular, we consider *current* policy interventions or possible policy interventions to signpost where BIS is most likely to get traction in terms of improving social mobility. Ideally one would assess the relative effectiveness of different policies on the basis of full cost benefit analyses. As has already been indicated, however, this is not going to be feasible in the time available, as in most instances full CBA is not available.

We consider three main policy domains that are relevant to BIS, namely **employment law**, **further education and skills** policy and **higher education**:

Employment law:

Maternity/paternity leave:

There is a wealth of evidence from the UK and elsewhere suggesting that maternal employment in the first year of a child's life has a detrimental effect on child outcomes (e.g. Brooks-Gunn, Han & Waldfogel, 2002; Gregg, Washbrook, Propper & Burgess; Shonkoff & Phillips, 2000; Smolensky & Gootman, 2003). There is also a body of evidence suggesting that maternity leave in the months immediately following a child's birth has positive effects on a range of short- and long-term outcomes for both mother and child, including child health (e.g. Ruhm, 2000; Berger, Hill & Waldfogel, 2005), maternal depression (e.g. Chatterji & Markowitz, 2004) and high school drop-out (Carneiro, Loken & Salvanes, 2010). Moreover, the findings in Carneiro et al (2010) suggest that these effects are driven by the additional time this leave allows the mother to spend with the child, rather than the associated increase in income (when the leave is paid); they also find that the effects are greatest amongst low educated mothers, particularly when they would have taken shorter amounts of leave prior to the reform, which suggests this might be a route through which to increase social mobility.

However, common to the majority of these studies is the fact that they consider increases in leave from an initially small number of months. By contrast, studies which focus on increases in leave from a relatively higher base tend to find little or no effect. For example, in a study investigating the impact of increasing parental leave from 12 to 15 months in Norway, Liu & Skans (2009) find no effect of the policy on mothers' earnings, child health, parental fertility, divorce rates or the mothers' mental health. They do, however, find a small positive effect of maternity leave on child cognitive test scores – but only for the children of well-educated mothers, suggesting that this may hurt rather than help social mobility. Similarly, Dustmann & Schonberg (2008) find no effect of an increase in unpaid maternity leave from 18 to 36 months in Germany on the likelihood of the child attending a high track school (or of increasing paid maternity leave from 2 to 6 months on the child's future wages).

Thus in the UK context – in which unpaid parental leave is already available for up to 52 weeks following the child's birth (paid leave being slightly lower at 39 weeks) – the evidence suggests that a further increase in leave may have little or no effect in terms of increasing social mobility (and may even hinder it). Given that further extensions of parental leave are likely to have potentially negative impacts on firms, in terms of productivity and profitability, we can conclude that there is no strong case for extending parental leave.

Minimum wage legislation:

Minimum wage legislation has the potential to impact on wage inequality and social mobility, mainly amongst those at the bottom of the distribution. Clearly the minimum wage can reduce wage inequality by raising the wage floor. For those in work this would reduce the real earnings gap between those at the upper and lower ends of the wage distribution. However, since the minimum wage can, under certain assumptions about the working of the labour market, reduce employment of low skilled workers, it could cause higher unemployment. Depending on benefit levels,

any increase in unemployment is likely to increase the inequality in family income levels.

The minimum wage may also have specific effects on younger people with long-term consequences for social mobility. Specifically, the minimum wage may encourage young people to enter the labour market earlier than they otherwise would, due to the higher wages on offer. This would tend to reduce their investment in education with consequences for their long-run labour market outcomes. This will apply particularly to low SES students who tend to have a higher preference for the present and who value more highly immediate financial reward. This will also apply to teenagers for whom the cost of further schooling is greater, in terms of the amount of intellectual effort needed and also in terms of direct (financial) and indirect (i.e. forgone earnings) costs induced by the extra years of education taken. An opposing effect of the minimum wage is possible, if the minimum wage were to cause firms to substitute higher qualified (older) workers for less qualified (younger) ones. This would tend to discourage young people from leaving school earlier and hence they are likely to make greater investments in their education. The net effect of these supply and demand side changes on education investment is an empirical issue (see Manacorda et al., 2006).

Empirical evidence to date, largely from the Low Pay Commission, suggests that the minimum wage has indeed increased wages at the low end and has not had any major impact on employment (Dickens, 2009). There have also been minimal effects from the introduction of a minimum wage for young people on participation in education and training (Dickerson & Jones, 2004; Frayne & Goodman, 2004). There is also some evidence (not directly linked to the introduction of the minimum wage) that higher wages among the low paid give rise to reductions in crimes against properties and vehicles (Machin & Meghir, 2004)

Hence we conclude that the minimum wage has reduced wage inequality and at the same time has not had significant negative effects on the employment of young people nor on their long term decisions about whether to invest in education (at least on the basis of research to date, which has largely not covered the recent recessionary period). This implies that the minimum wage has, if anything, reduced intra-generational inequality with potentially positive impacts on social mobility in the longer run.

Further Education:

There are four issues to be addressed here: 1) the overall effectiveness of Further Education (FE) and vocational education – in some circumstances this could be very important in determining both social mobility and inequality since this is more likely to be the route taken by low SES students; 2) the decision at 16/18 to stay in education of some kind; 3) the effectiveness of lifelong learning in driving up wages and employment; 4) the impact of education and skills in improving parental skills and thus outcomes for the next generation.

The overall effectiveness of FE:

Further Education plays a critical role in our education system. Around 30% of those who remain in full time education post-16 now undertake their study within an FE college and FE is also the main option for adults wanting to return to learning to up-skill, particularly from a low base. Amongst school leavers in particular, those enrolling in FE are the less advantaged and lower achieving pupils. They are also from less advantaged schools. Hence FE as an institution is a *potential* instrument for up-skilling young people and adults from deprived backgrounds and improving their labour market outcomes.

FE has also become increasingly important due to structural changes that have occurred in the youth labour market. Even prior to the recession, the youth employment rate at age 16-19 had fallen substantially during the last decade and the NEET (Not in Education, Employment or Training) rate had risen, particularly since 2004. Young unqualified workers are increasingly finding entry into the labour market more difficult and in general entry into the labour market is being postponed to a somewhat older age. Hence for those who would otherwise enter the labour market at age 16, FE is a crucial stepping stone that could potentially ease their transition into the labour market.

For FE to be effective, however, it has to deliver a valuable curriculum and qualifications that lead to better labour market outcomes. We therefore also examine the notion that improved qualification rates and staying on post 16 (particularly in FE) will improve social mobility, as well as ensure better transitions into the labour market.

In a nutshell, the evidence on the value of qualifications suggests the following:

1). The value of even basic skills is high in the UK labour market. In particular, there is evidence that the rate of return to basic numeracy and literacy is higher in the UK than in competitor countries, suggesting a shortage of these skills (Machin & Vignoles, 2005).

2). The value of academic qualifications, such as GCSEs, A levels and degrees is also high, and part of the explanation for high wage inequality in the UK is the substantial return to such higher level qualifications.

3). Many vocational qualifications also yield a good return, particularly those at higher levels (i.e. level 3 and above) and those that are well recognised by the labour market (e.g. HND or BTEC).

4). The value of newer lower level vocational qualifications, such as NVQ2, is minimal on average, though it does vary by sector (Dearden et al. 2002). These qualifications are taken disproportionately by low SES students in FE.

Hence qualifications, or at least particular kinds of qualifications, are potentially valuable ways of enhancing the earnings of individuals, and can thus be seen as potential interventions to improve social mobility. Unfortunately, however, some of the qualifications offered in FE (and hence disproportionately taken by lower SES individuals) are less valuable than more academic qualifications. Hence acquisition

of qualifications has actually been acting to widen wage inequality rather than reduce it.

Of course qualifications (even of a lower level) could act as a means of narrowing the wage gap between low and high SES pupils if the former gain more from acquiring a qualification. However, Meghir & Palme, 2001, Carneiro & Heckman, 2003, and Carneiro, Heckman, & Vytlacil, 2006, find evidence that returns to adolescent education are lower for the most disadvantaged and least able. By contrast, Dearden, 1998 and Blundell et al., 2005, suggest that the return to higher education was lower for those with more educated fathers. Thus the evidence is mixed, but on balance does not imply that low SES students are going to gain more from lower level qualifications than their high SES counterparts.

Ensuring that low SES students acquire high quality education that results in qualifications that are valued in the labour market is therefore key if education and training is to result in improved social mobility. Since such qualifications are already available to those willing and able to take them (e.g. A levels), policy development needs to focus on improving the likelihood of low SES students taking such qualifications, which necessarily implies earlier investment to improve individuals' cognitive skills and educational attainment at school.

Other benefits of FE:

Thus far we have considered the effect of education or qualifications on wages, as this is one direct way in which these investments might influence social mobility. It is, however, worth highlighting that staying on in education longer, even without acquiring qualifications that are well rewarded in the labour market, may yield private and social benefits beyond wage returns. In terms of private benefits, Oreopoulos & Salvanes (2009) suggest that schooling "leads individuals to make better decisions about health, marriage and parenting. It also improves patience, making individuals more goal-oriented and less likely to engage in risky behaviours". (Although it must be said that other evidence on the causal relationship between education and health, for example, is rather more mixed; see, e.g. Clark & Royer, 2010.) There is also evidence from both the US and the UK that increasing education has a causal effect on reducing crime (Lochner & Moretti, 2004; Machin, Marie & Vujic, forthcoming 2011). Aside from the potential monetary returns, the possibility of reaping other benefits thus indicates that staying on in school and acquiring even low wage return vocational qualifications may be worthwhile from both an individual and a societal perspective, although this may not necessarily work to increase social mobility.

Policies to encourage pupils to stay in full-time education:

To the extent that participation in post-16 education confers private benefits (that are greater amongst individuals at the bottom of the income distribution), and may therefore increase social mobility, it is worth considering the effectiveness or otherwise of policies designed to increase participation at age 16, particularly amongst disadvantaged pupils.

The Education Maintenance Allowance (EMA) scheme was designed to give young people from disadvantaged backgrounds an added incentive to stay on in education and to help them meet some of the additional costs associated with full time

education. One unique feature of the EMA scheme is that it was evaluated prior to national implementation and the evaluation design was very methodologically robust. The evaluation of the EMA indicated a positive impact on education participation for those eligible for it, i.e. more deprived students from low income families. Specifically, the introduction of EMA appears to have lead to an increase in education participation at age 16 of 4.5 percentage points among those eligible for the EMA. This improvement in the participation rate of the most deprived students is in the context of an average education participation rate of 64.7% in the control sample (Dearden et al. 2005).

A follow up study (Chowdry et al. 2007), using more recent but somewhat lower quality (administrative) data, concurs that the EMA has positive (though somewhat smaller) effects on participation in full time education at age 16 and 17, which they find to be concentrated amongst white students from deprived backgrounds. Since EMA raised the education participation rate of deprived students, it thus directly narrowed the socio-economic gap in participation post-16. (This study also found that about two-thirds of the additional 16-year-old students – those drawn into education by EMA - and one-third of the additional 17-year-old students would have been NEET in the absence of the EMA.) The EMA was therefore successful in terms of its objective of reducing educational marginalisation.

However, the evidence on the impact of EMA on education achievement (i.e. qualifications achieved) and indeed subsequent labour market progress is somewhat more mixed. When focusing on the pilot authorities that introduced the EMA in 1999, Chowdry et al. (2007) found no significant impact on female qualification rates and only small effects for males. When they included all EMA pilot areas (both original and extension authorities), they found small but significant effects for both males and females, which were generally larger amongst ethnic minorities and those from deprived backgrounds. This difference between the effects of the EMA on participation and attainment may be potentially important given the recent decision to extend compulsory education and training to age 18.

There is also some evidence that the EMA led to a significant reduction in burglary convictions among 16-18 year olds – but only when piloted alongside the Home Office's Reducing Burglary Initiative (RBI). Feinstein & Sabates (2005) found that burglary rates fell by between 1.1 and 1.5 offences per 1,000 pupils in areas piloting both EMA and RBI, compared to areas in which neither of these policies were in operation. (Neither policy alone appeared to achieve statistically significant reductions.)

In summary, EMA has been shown to increase participation, and to a lesser extent increase attainment and perhaps reduce youth crime; moreover, its benefits outweigh its costs (despite high deadweight). The imminent change in the participation age to 18 may force the increased participation of low SES pupils but since students will not be required to remain in *full time* education it is not clear what the net effect of the law change will actually be. What the existing evidence base does suggest is that better targeted but similar interventions to EMA might raise the attainment of low SES students, and if they could be designed to have less deadweight loss than EMA, this would improve the cost benefit analysis of this particular type of intervention. Some caution is needed though. The impact of EMA on education achievement was typically smaller than its effect on participation. To

the extent that increased participation does not result in increased education achievement, this type of intervention may be unlikely to improve social mobility. It is not enough to get students to remain in education, the skills and qualifications they acquire matter too.

Skills:

Apprenticeships

Apprenticeships are extremely valuable in a number of countries and the returns to these qualifications are found to be consistently high in the UK (McIntosh, 2004, 2007). For instance, an apprenticeship with level 3 vocational qualifications results in an earnings return of around 12%. The value of an apprenticeship does, however, vary by type of apprenticeship, as shown in Table 1 below. A Modern Advanced apprenticeship, for example, yields a return of 13% for women and 20% for men, clearly a very economically valuable qualification.

Table 1: The Economic Value of Apprenticeships in the UK

	Males	Females
Recognised apprenticeship	8	-4
Recognised apprenticeship with NVQ3	16	2
Recognised apprenticeship with NVQ2	7	9
Modern Advanced apprenticeship	20	13
Modern Foundation apprenticeshp	18	0

Source: McIntosh (2007)

The value of apprenticeships is high in other countries too. For example, using German data, Krueger & Pischke (1995) found returns in the range of 15-20% and other work, which accounts for the fact that more able students tend to take apprenticeships, still finds that the economic value of apprenticeships is sizable (see Festerer et al., 2008).

There are two potential issues here about whether apprenticeships can act as an engine for social mobility. Firstly, if apprenticeships are taken by higher SES students they may, given the high return to these qualifications, further widen socio-economic gaps. Unfortunately, there is relatively little evidence on the SES background of those taking apprenticeships in the UK. Some preliminary analysis undertaken for the purposes of this review and based on the Labour Force Survey suggests that apprentices typically come from low and middle SES backgrounds (rather than high SES backgrounds), but that they are more likely to come from middle than low SES families. For example, individuals from the third and fourth quintiles of parental earnings are over-represented amongst apprentices (24% and 26% respectively), while individuals in the bottom two quintiles are under-represented amongst apprenticeships (18% each). A similar pattern emerges in terms of parental education. This suggests that apprenticeships may do more to help those in the middle rather than the bottom of the income distribution, with consequent implications for social mobility. However, more research is needed on this issue.

Another issue is the long run effects of apprenticeships. Adda et al. (2009) look at the long-term (20 year) effects of taking an apprenticeship in Germany. In the decade after their apprenticeship, those who took one had more rapid wage growth. Beyond that point, the wages of those without an apprenticeship continued to grow, whereas the wage growth of apprentices slowed. They present evidence that those with apprenticeships struggle to move sector more than those without, suggesting that apprenticeships may encourage excessive specialisation. Indeed in Germany there is policy concern about over specialisation and the extent to which access to occupations is restricted by use of qualification requirements. Hence we need to be cautious about whether apprenticeships that offer good wage premia on average also offer long term prospects that are as good as alternative routes. To ensure this, apprenticeships need to include a component of education and training that leads to portable skills. Equally, access to different occupations needs to remain open and not restricted to those with a particular apprenticeship qualification if the dynamism of the UK labour market is to be retained and hence individuals are able to move between occupations and sectors later in life. Recent work at IFS for the Wolf review has suggested that vocational qualifications which are more portable across sectors have higher economic value.

In summary, the apprenticeship qualification is highly valued by the labour market (with returns exceeding those for degrees in some instances). However, apprenticeships are more likely to be taken by middle than low income students, hence such qualifications are likely to improve the social mobility of those in the middle rather than those at the bottom of the distribution. We also need to be aware that, while apprenticeships are economically valuable, there is evidence from other countries that they can potentially lead to over specialisation and prevent occupational and sector mobility.

Training programs:

There is a large body of evidence that workplace training is economically beneficial to individuals, i.e. has a positive impact on their earnings and indeed their likelihood of employment (Arulampalam, Booth & Elias, 1997; Blanchflower & Lynch, 1992; Blundell et al, 1996; Feinstein, Galindo-Rueda & Vignoles, 2004; Marcotte, 2000; Pischke, 2005). Firm provided training by its nature involves firms selecting those workers they wish to train. This generates a problematic selection effect. Work by Pischke (2001) for Germany suggested that, as in the UK, work-related training increased wages, but after accounting for differences in fixed individual characteristics, the benefits of training became statistically insignificant (see also Leuven & Oosterbeek, 2002). Moreover, recent preliminary work carried out at the IFS suggests that young people working in jobs without training have, at least in the short run, similar labour market outcomes (e.g. in terms of subsequent wages and employment prospects) to those working in a job with training.

Certainly the returns to training are known to be heterogeneous (Heckman, Lalonde & Smith 1999). Some work (e.g. Blundell et al. 1996) has found the economic benefits of training to be higher for those with low levels of educational achievement. This might imply that work place training could be a potential lever to up-skill the less educated and hence narrow socio-economic gaps. However, Abramovsky et al. (2011) find that the likelihood of getting formal firm provided training is higher for

those with higher qualification levels, and Carneiro & Heckman (2003) find that the returns to training are lower for the less able. Hence it appears that, left to their own devices, firms offering workplace training will not improve social mobility but may in fact reinforce existing differentials.

One solution to this problem, which was the motivation behind the recent UK *Train to Gain programme,* is to encourage or even force firms to train the lowest skilled workers. Unfortunately, however, the evidence suggests that while firm-provided training generally yields high returns, it does not do so when the state forces firms to train individuals with the lowest skills. In general, the evidence suggests that government training programmes, particularly those targeted at the unemployed, have had little success in improving the economic outcomes of participants (Heckman, Lalonde & Smith, 1999). Moreover, interventions which have encouraged firms to provide training to the lowest skilled (e.g. *Train to Gain*) have also generally not produced gains in the earnings of those receiving training and have resulted in high deadweight loss (Abramovsky et al, 2011).

Lifelong learning:

Based on data from the British Household Panel Survey, Dorsett, Lui & Weale (2010) show that 22% of men aged 25 to 60 participate in lifelong learning leading to a qualification within 5 years of entering the sample; however, only 5% obtain a higher qualification as a result of doing so. They find modest positive effects of lifelong learning for those who do not obtain a higher qualification, but significant effects for those who do upgrade. Just over half of this effect is due to increased employment prospects. They find that returns are higher for those with initially low qualification levels and highest for those with no qualifications (as employment in this group tends to be so low) eg at age 40 the wage effect is 9% but rises to nearly 22% when employment is factored in).

However, those with higher initial qualifications were substantially more likely to participate in lifelong learning, and these results must be balanced against earlier evidence suggesting that there is little benefit to lifelong learning (e.g. Blanden, Buscha, Sturgis & Urwin, 2008; Jenkins, Vignoles, Wolf & Galindo-Rueda, 2002). There is also strong evidence from the US that students who complete General Educational Development (GED) certification (supposedly equivalent to high school graduation) do not see any return to this qualification in the labour market (e.g. Heckman & LaFontaine, 2006).

This suggests that while lifelong learning that leads to genuine upskilling may have a significant impact on individuals' earnings and hence potentially on social mobility, the lifelong learning that does not lead to a qualification, or leads to a lower level qualification than already held, will not necessarily lead to earnings gains and hence may be unlikely to improve social mobility. The evidence does not, however, imply that some form of targeted support for individuals with low qualification levels to encourage specific types of lifelong learning would not be an effective route through which to increase social mobility. However, policy needs to reflect the points made earlier about the difficulty of improving individuals' cognitive skills later in life and recognise that efforts to improve non-cognitive skills or parenting skills (see next section) may perhaps be more effective.

Intergenerational transmission of skills

There is widespread evidence of a strong correlation between a variety of parent and child outcomes in the UK, including income, education, social class, cognitive ability and basic skills (see, for example, Blanden, Gregg & Macmillan, 2007, 2010; De Coulon, Meschi & Vignoles, 2008; Dearden, Machin & Reed, 1997; Goldthorpe & Jackson, 2007). To the extent that these relationships are causal, this suggests that interventions which improve parents' skills (such as those discussed above) are likely to have a positive impact on the outcomes of their children as well.

To improve social mobility, however, interventions to improve parents' skills must be more successful and/or the transmission of such skills across generations must be greater amongst those from disadvantaged than advantaged backgrounds. There is rather less evidence on this, but De Coulon et al (2008) do find that the impact of parents' basic skills on child cognitive outcomes was greater for poorly educated parents. However, it must be remembered that the existing evidence cited above suggests that it is likely to be relatively difficult to improve adults' cognitive skills; indeed, we could find almost no evidence of policies that have successfully intervened to improve adults' cognitive skills. Hence a policy aimed at improving adults' basic skills needs to be carefully assessed in terms of its potential benefits in improving social mobility and its potentially high costs of implementation.

There are also other ways in which policy interventions aimed at parents may benefit children: for example, a wide range of parenting programmes have been introduced and evaluated in the UK and elsewhere, whose aims include better outcomes for children.

The Nurse Family Partnership in the US (recently introduced in the UK as the Family Nurse Partnership) – a preventive programme for young first time mothers from poor backgrounds, which involves regular and intensive home visits from a qualified nurse from pregnancy through to when the child turns two, and is designed to improve pregnancy outcomes, child health and development and parents' economic self-sufficiency – has been shown to improve infant emotional and language development, as well as encourage mothers into work, making them less reliant on public support programmes. Moreover, the impact of the programme tended to be greatest for those most at risk (Olds, 2006), and while this is a relatively expensive programme to implement, the available cost-benefit analysis suggests that its benefits outweigh its costs.[15]

However, Waldfogel (2004) reports that the evidence on the effectiveness of parenting programmes more generally is mixed, with very few having any impact on children's cognitive outcomes (the exception being family literacy interventions, such as the Peers Early Education Partnership programme – see Evangelou & Sylva 2003) or social and emotional development (the exception being programmes targeted specifically at children with severe behavioural problems, e.g. Webster-Stratton, 1998). This suggests that parenting programmes may need to be high intensity and hence high cost to be valuable in improving social mobility.

[15] See www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_118530

Higher Education:

We have made the argument that increasing the supply of graduates with economically valuable skills is likely to reduce wage inequality and hence help social mobility, albeit indirectly. However, when considering potential interventions to improve HE participation amongst lower SES groups, we need to recognise that we are likely to be moving individuals from the middle of the income distribution to the top, rather than improving the social mobility of those at the bottom of the distribution. Whilst this may be more cost effective for the reasons outlined earlier, it clearly has equity implications.

There are several issues in HE – beyond student finance which, as outlined above, is an issue we take to be outside the scope of this review – which might matter for social mobility. The first is directly related to the issue of staying on decisions at age 16 and how this may widen participation in HE. Related to this is the issue of the information, advice and guidance that is available to potential students, including advice over what curriculum to follow.

Widening participation agenda

Evidence from Chowdry et al (2010) suggests that the socio-economic gap in HE participation is driven largely by differences in secondary school attainment, and hence by participation decisions at age 16, rather than by attainment and participation decisions at age 18. (Jackson et al. (2007) concur that there is a wide socio-economic gap in terms of the staying on decision at age 16.) Interventions that are designed to increase staying on rates at 16 and consequent educational attainment (such as the EMA – see discussion above) are therefore important in terms of widening participation in HE too.

The fact that the EMA increased post-16 participation suggests that some credit constraints may operate in the UK education system. Evidence from higher education directly, however, suggests that credit constraints do not play a large role in determining either HE applications (Corver, 2010) or participation (Chowdry et al, 2010), conditional on prior attainment and other characteristics. (Although we cannot rule out the possibility that fear of debt or low aspirations may have some impact on how students engage with the compulsory schooling system or that at higher levels of fees credit constraints may not become a problem.) This evidence suggests that policies which seek to address credit constraints are unlikely in and of themselves to radically reduce the socio-economic gap in education achievement and hence long run outcomes, including social mobility.

There are relatively few programmes designed to increase participation in HE directly. One such programme is Aimhigher: Excellence Challenge, which was introduced in September 2001 in the same areas as those targeted by the Excellence in Cities (EiC) programme. Its stated aims were to raise aspirations and participation in higher education of individuals aged between 14 and 19, with a special focus on individuals from disadvantaged backgrounds.

Emmerson et al (2006a) found that the combined effect of Aimhigher and EiC was to increase the percentage of Year 11 pupils reporting that they would leave education at age 20 or above (i.e. would participate in HE) by 4.6 percentage points.

Emmerson et al (2006b) went on to find that individuals from more disadvantaged backgrounds (as indicated by those living on social housing or having unemployed fathers) seemed to benefit more from the policy than those from better-off backgrounds, with their probability of entering post-compulsory education significantly higher as a result. This suggests that Aimhigher may help to increase social mobility by encouraging individuals from poorer backgrounds to stay in education beyond age 16. However we do not know what effect it actually had on HE participation and further research in this area is called for.

Indeed, some caution is needed here. In fact, there does not appear to be a dearth of aspiration to go to university even amongst low SES students. Data from the Longitudinal Study of Young People in England suggests that around half of students in the poorest quintile of the SES distribution aspire to go to university at age 14, even though only around 13% go on to do so (Chowdry, Crawford & Goodman, 2010). Thus it is not clear that raised aspirations necessarily translate into higher university participation rates amongst low SES students and there is a clear need for robust research to determine whether Aimhigher genuinely did improve HE participation rather than just aspirations.

Another issue is the substantial variation in returns to HE by degree subject and institution. Given the heterogeneity of graduate outcomes, it is important to encourage not just HE participation in general, but participation at high quality institutions and in high return subjects in particular. There is relatively little evidence of the effectiveness of interventions of this nature either in the UK or elsewhere. The little that there is in the UK seems to come primarily from the Sutton Trust, which runs a series of programmes designed to encourage students from disadvantaged backgrounds to attend such universities.

For example, the STAR programme – run in collaboration with the universities of Exeter and Leeds – targets the top 10% of bright but disadvantaged students in low progression schools who live in the local areas. The idea is to support them over the three years prior to university admission (i.e. starting in Year 11, before the end of compulsory schooling), with the objective of encouraging them to apply to high quality universities. Places on this programme were allocated randomly amongst those who were eligible, and its impact on a range of outcomes is currently being evaluated by members of Durham University.[16]

The Sutton Trust also runs a series of summer schools at the universities of Bristol, Cambridge, Nottingham and St Andrews – week-long events designed to give bright students from non-privileged homes a taste of life at a leading university. Analysis by UCAS found that students who attended these events were three times as likely to apply to one of the summer school universities as applicants from similar backgrounds and with similar levels of attainment, and 60% began their degree at a Russell Group university.[17] This suggests that such targeted interventions may offer the opportunity of increasing participation at high status universities amongst students from disadvantaged backgrounds, and thus may potentially have a role to play in increasing social mobility in future. A crucial point here, however, is that those

[16] See http://www.suttontrust.com/projects/university/star-programme/
[17] See http://www.suttontrust.com/projects/university/sutton-trust-summer-schools/

attending these summer schools were by no means from the very bottom of the SES distribution, so again these are likely to improve mobility from the middle to the top, rather than the bottom to the middle.

The Sutton Trust also fund a scheme called “The Subject Matters”, in which admissions tutors from Cambridge University discuss the impact of A-level choices on degree and career options with Year 11 pupils and teachers from target schools. While there is no evidence on the effectiveness of this intervention on subsequent subject choice, it highlights the potential importance of intervening early enough to make a difference to choices at both 16 and 18.

Information, advice and guidance

One potential explanation for low HE participation rates amongst students from disadvantaged backgrounds is that they underestimate the returns to obtaining a degree; if this is true, then providing such students with better information about returns should increase participation. Another potential explanation is that individuals overestimate how much it will cost them to go to university; if this is true, then providing them with information about financial aid should increase participation. There are, however, relatively few studies that address these questions about HE specifically, and even fewer that consider the effects of interventions on participation directly (as opposed to intentions to apply, or perceptions of costs or returns).

The most relevant study carried out in the US (Bettinger, Long, Oreopoulos & Sanbonmatsu, 2009) randomly sampled a large group of individuals with family income below $45,000 and a family member aged 17-30 without a degree as they were completing their tax return, and offered them: a) the opportunity to have a college financial aid form completed (10,000 people); b) personalised information about their aid eligibility (1,650 people); c) a brochure on the importance of HE and general information about college costs (control group; 12,000 people). The authors found that dependent individuals in treatment group a) were 15 percentage points more likely to submit an aid form and 8 percentage points more likely to enrol in college than those in the control group c). Outcomes for those in treatment group b) were no different to those in the control group. Interestingly, the authors also found that the effects were largest amongst those in the lowest income households, while families with incomes close to $45,000 were actually less likely to go to college (presumably because they found out that they would have to contribute more than they had anticipated). In a UK context, this suggests that helping students from low income families to complete a student loan form may increase HE participation, and thus social mobility.

Another relevant study (albeit one carried out in a very different context) attempts to increase participation in primary school in Madagascar by offering individuals: a) a role model; b) basic information on the returns to schooling; c) both. Nguyen (2008) finds that provision of information on the returns to schooling increased test scores 5 months later by 0.2 standard deviations and school attendance by 3.5 percentage points compared to the control group. Interestingly, the role models were only successful in improving the test scores of individuals from poor backgrounds; the author hypothesises that this may be because role models tend to increase perceptions of the heterogeneity of returns to education. This finding is in contrast to other work on role models/mentors, e.g. Tierney & Grossman (1995), who find that

individuals involved in the Big Brother/Big Sister programme (which matches individuals aged 10 to 16 with an adult mentor) were, 18 months later, less likely to have initiated drug or alcohol use, hit someone or skipped class, and also had higher grades on average.

If these results can be translated to older students in a more developed country, then it suggests that providing even relatively basic information about the returns to university may increase HE participation. There are at least two pilot projects currently underway in the UK that aim to test this theory: 1) the website BestCourse4me.com provides statistical information for guidance counsellors, students and their parents on the value of degrees; 2) Sandra McNally at the LSE is carrying out a randomised control trial (funded by the ESRC), testing the effects of providing information about degree returns to students in London schools.

Concluding remarks

The evidence clearly indicates the importance of both cognitive and non-cognitive skills in explaining social mobility or lack thereof. However, improving the cognitive skills of unskilled adults is likely to be a difficult way to improve social mobility, given the existing evidence that interventions to improve adults' cognitive skills are often costly and/or ineffective. The evidence, whilst very limited, is somewhat more optimistic about the scope to influence adults' non cognitive skills. Certainly there is a pressing need to improve the evidence base on the effectiveness of specific teen year and adult interventions, whether they are designed to impact on cognitive or non cognitive skills.

Moreover, policies to improve the social mobility of individuals in the middle of the distribution rather than the bottom may be more (cost) effective. Specifically, BIS should consider policies to increase the educational attainment and HE participation of those who have already gained skills and qualifications in school. This approach will have the added benefit of increasing the supply of skilled labour, reducing wage pressures at the top end and potentially reducing wage inequality. However, there is also a need for more research to identify high return interventions for the lowest skilled, to ensure that they don't get left behind.

It is crucial to recognise, however, that if policy is to improve social mobility via improvements in individuals' skill levels, then there must be genuine gains in skill levels, and the skills acquired must be valued in the labour market. We must avoid previous policy mistakes that tended to focus on qualification acquisition as an end in itself without recognising the need to bring about genuine improvements in skills levels.

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