

Pupil Attainment:

Time for a three Rs guarantee

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The views expressed in this paper are those of the authors alone.

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Introduction

Schools policy is complex and controversial, partly because it seeks to achieve a wide range of objectives. This paper presents an overview of how well the English schools system is performing against one of its key objectives, attainment, together with some interim conclusions and recommendations.

When asked what schools are for, many people would reply something along the lines of, 'to give young people the skills and knowledge they need to succeed in life'. There is a great deal of validity in such a common sense formulation. Young people need to develop skills at school such as the ability to read and write to a good standard, and to learn the habits of reasoning, work and inquiry. These skills and abilities are prerequisites of personal independence and for undertaking the next stages of further and higher education.

There is of course a much wider set of goals beyond attainment that the schools system seeks to achieve. The 'Every Child Matters' agenda, first set out in a government Green Paper in 2003, lays out five key objectives for young people: be healthy, stay safe, enjoy and achieve, make a positive contribution, and achieve economic wellbeing (DfES 2003). While schools have a role in relation to all of these, our report will focus principally on attainment. But there are of course strong links between the five outcomes: children who are not healthy are unlikely to make good progress at school; safety is the foundation of all children's services; and individual attainment is likely to facilitate each pupil in making a positive contribution and going on to achieve economic well-being and independence.

Our concern to see young people acquiring core skills such as literacy and numeracy is reflected in the National Curriculum and in the key stage tests for pupils taken around ages seven, 11 and 14. The results of these tests are used to measure individual pupil achievement, to hold schools to account for their performance, and also to show whether attainment is rising across the country. Another paper published with this report (Brooks and Tough 2006) investigates the issue of assessment in more detail.

It is worth thinking for a moment about what our objectives should be in relation to attainment. One commonly heard formulation is that 'every child should reach their full potential', but it is difficult to know exactly what this means. One way of finding out what the Department for Education and Skills (DfES) is trying to achieve is to look at its series of Public Service Agreements (PSAs), the objectives for which the Secretary of State is held responsible. A number of these PSAs relate to attainment at school, as the box below shows:

DfES PSA Targets

6. Raise standards in English and mathematics so that:

- by 2006, 85 per cent of 11-year-olds achieve level 4 or above, with this level of performance sustained to 2008; and
- by 2008, the proportion of schools in which fewer than 65 per cent of pupils achieve level 4 or above is reduced by 40 per cent.

7. Raise standards in English, mathematics, ICT and science in secondary education so that:

- by 2007, 85 per cent of 14-year-olds achieve level 5 or above in English, mathematics and ICT (80 per cent in science) nationally, with this level of performance sustained to 2008; and
- by 2008, in all schools at least 50 per cent of pupils achieve level 5 or above in each of English, mathematics and science.

10. By 2008, 60 per cent of those aged 16 to achieve the equivalent of 5 GCSEs at grades A* to C; and in all schools at least 20 per cent of pupils to achieve this standard by 2004, rising to 25 per cent by 2006 and 30 per cent by 2008.

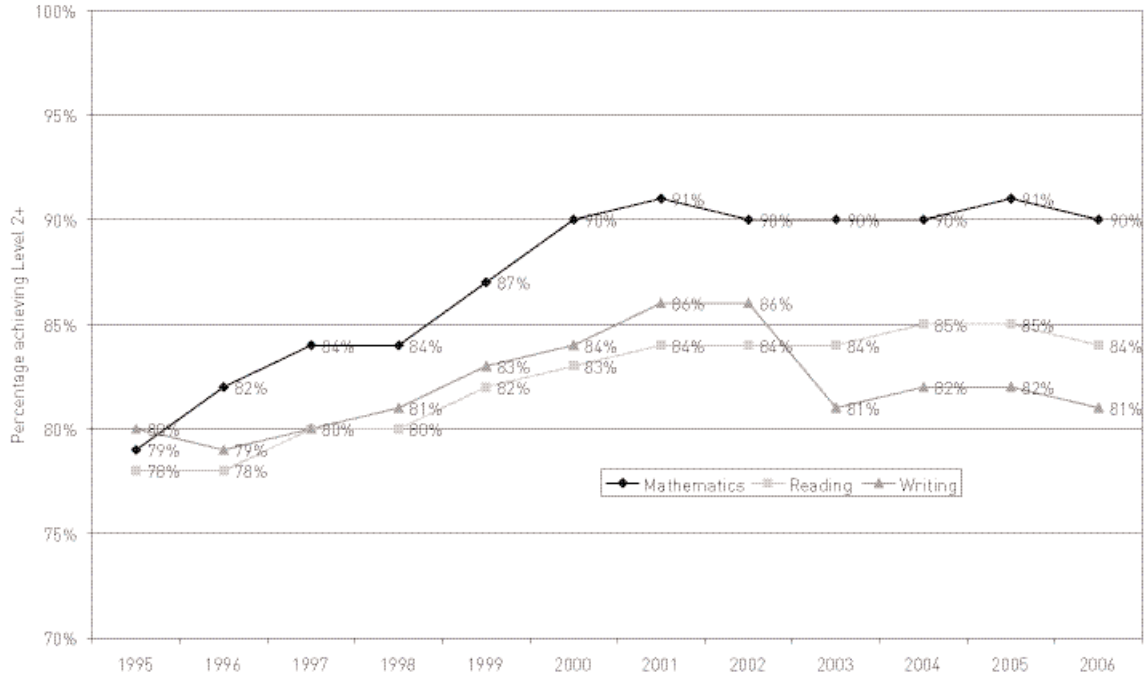
Source: HM Treasury 2004

The objectives that the Department is trying to achieve thus fall into two categories: to raise average attainment across the board, and to make sure that average attainment in each school does not fall below a floor level. Two questions naturally arise: are these objectives being met; and are they the right objectives?

Overall attainment in schools

The following charts show the proportion of young people in England reaching the benchmark level of attainment (level 2 at Key Stage 1 and level 4 at Key Stage 2) at the two key stages in primary school, from 1995 when national performance tables were first published, to the latest results in 2006.

Figure 1 Attainment at Key Stage 1 in England, 1995 to 2006



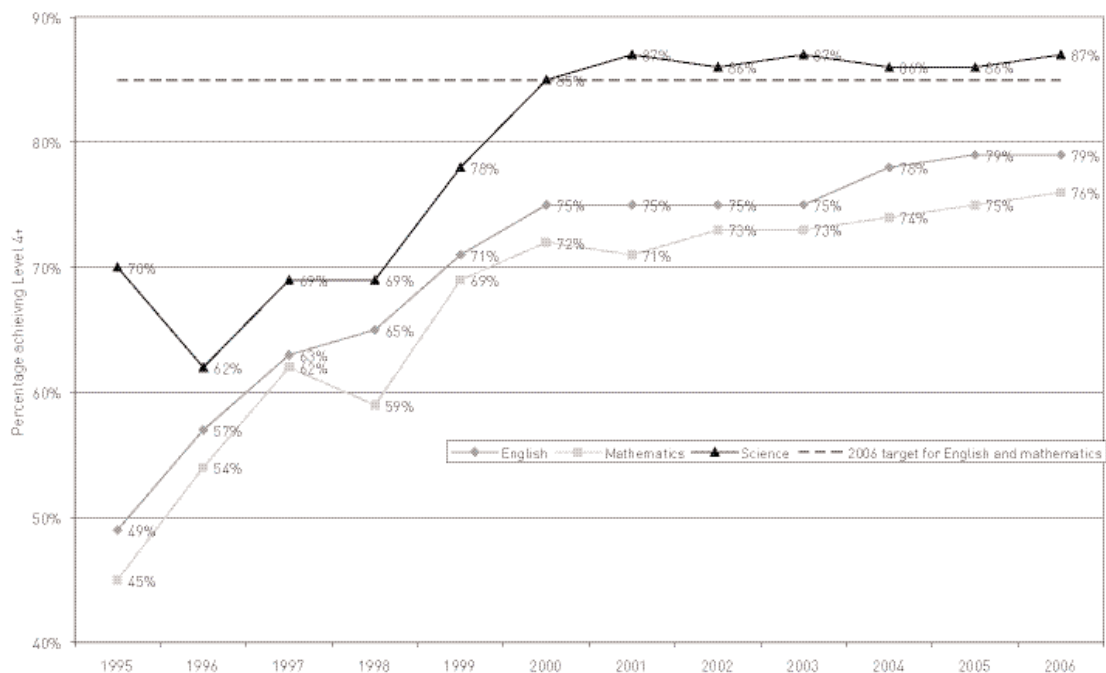
Notes: 1. The figures for 2004 are derived from combining task/test results for non trial schools and teacher assessment results for trial schools (see footnote 1 for more details).

2. Due to a change in policy the figures for 2005 onwards are taken from teacher assessment results.

3. The 2006 data is provisional.

Source: DfES 2004, DfES 2006a, DfES 2006b

Figure 2 Attainment at Key Stage 2 in England, 1995 to 2006



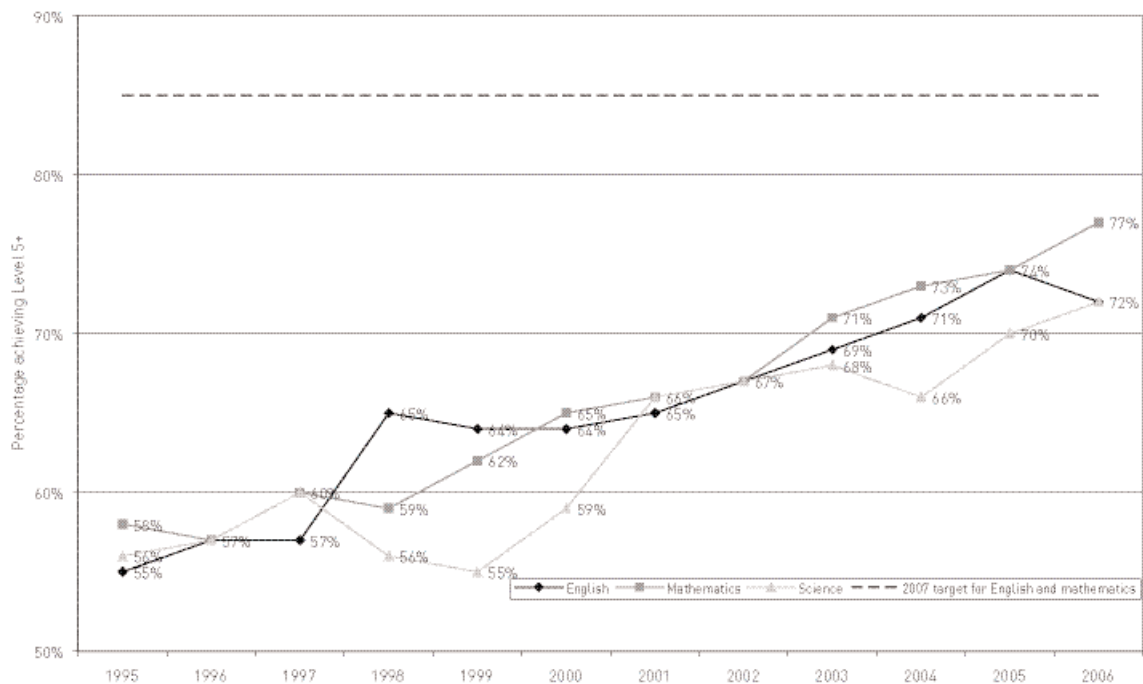
Note: The 2006 data is revised.

Source: DfES 2006c

Progress in the early key stages has slowed down significantly. At Key Stage 1, when children are about seven years old, the proportion of children reaching the target level in the 'three Rs' improved quite consistently from the mid 1990s until about 2001. After this time improvements have levelled off.¹ At Key Stage 2, at the end of primary school, results in science have followed a similar pattern of levelling out since about 2001, while results for English and mathematics have continued to rise somewhat, but much more slowly than they did prior to the year 2000. It is important to note, however, that while the proportion of young people reaching the benchmark appears to have levelled out, the average result has continued to rise due to many children achieving better results than the 'level four' benchmark. Perhaps the key point to note is that while around 80 per cent of 11- to 12-year-olds reach the benchmark level of attainment in the core subjects at the end of primary school, around one in five young people do not and we are currently making little headway into reducing this number.

Trends in overall attainment at Key Stages 3 and 4 have been somewhat different. At neither of these key stages has there been the same noticeable slow down in improvement seen over this period at Key Stages 1 and 2. Results for GCSEs are available further back in time, and show an interesting longer-term trend. The proportion of young people obtaining five 'good' GCSEs at grade C or above has been rising fairly consistently since their introduction. Nearly twice as many young people as in 1989 now get five good GCSEs. On the other hand around 40 per cent still do not reach the benchmark, and less than half of young people get five good GCSEs including English and mathematics.

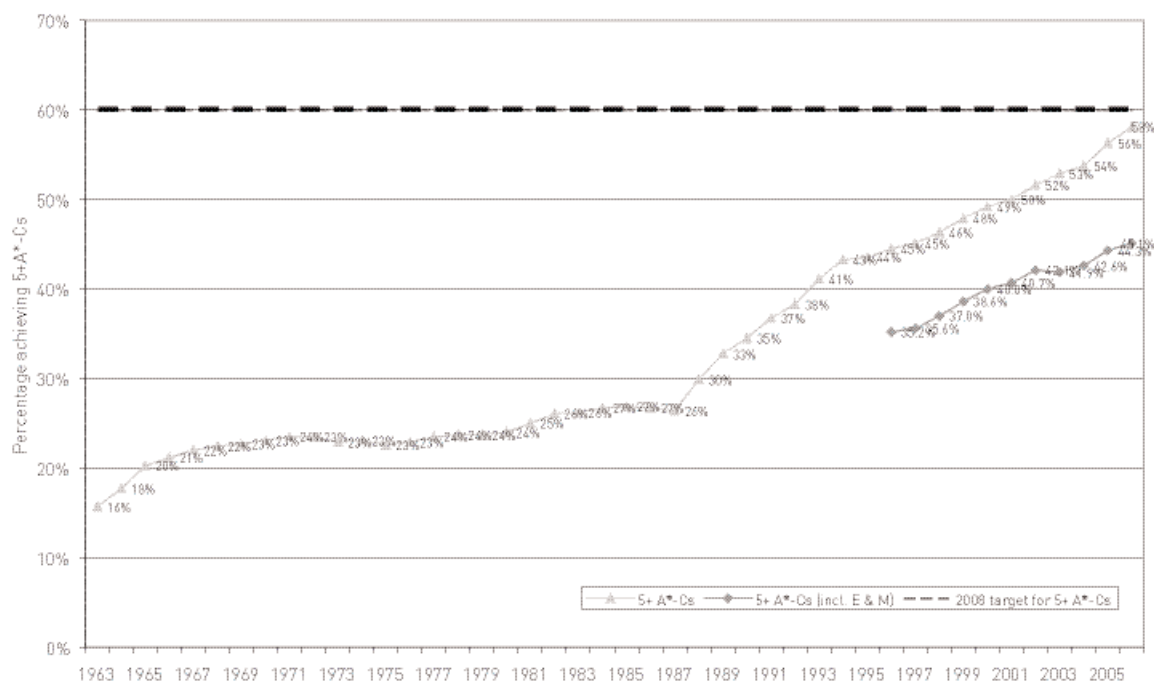
Figure 3 Attainment at Key Stage 3 in England, 1995 to 2006



Note: 1. The 2006 data is provisional.
 2. The 2007 target for science is 80 per cent of 14-year-olds achieving level 5 or above.
 3. Level 5 is the target or 'expected' level at Key Stage 3.
 Source: DfES 2006d

1. Since September 2004, there has been a shift to more emphasis on teacher assessment, away from national tests at Key Stage 1. Tests are still statutory but they are used to inform the teacher's judgment and there is much more flexibility regarding when and how the tests are used. The first annual statistics on this new basis are from 2005.

Figure 4 Attainment at O level/CCE/GCSE in England, 1963 to 2006



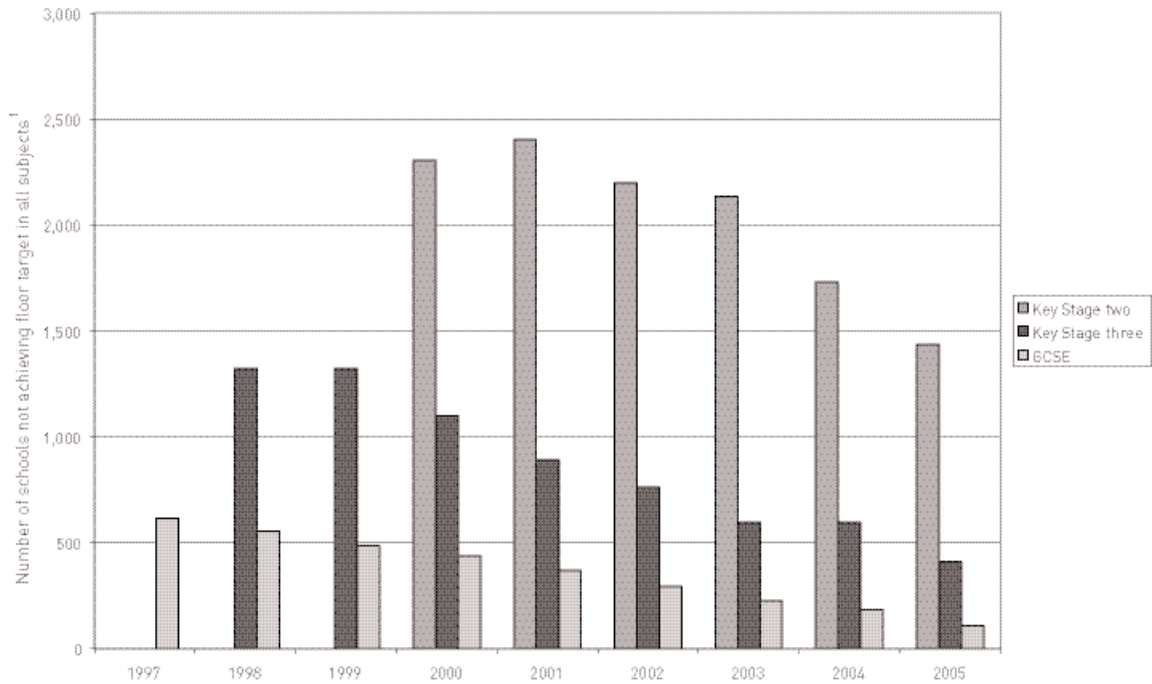
Notes: 1. For years 1963 to 1974 GCE O level passes were equivalent to present grades A*-C.
 2. School leaving age was raised to 15 on 1 September 1972.
 3. Grades A*-C include GCE O level grades A-C and CSE grade 1 up to 1986/87. GCSE grade A* was introduced in 1993/94.
 4. Percentages from 1974/75 to 1987/88 are taken from the School Leavers Survey, and include school leavers of any age from all schools except special schools.
 5. Percentages from 1988/89 to 1990/91 are taken from the School Examinations Survey, and are based on 15-year-old pupils in all schools except special schools.
 6. Percentages from 1991/92 are taken from the School Achievement and Attainment Tables data, and are based on 15-year-old pupils in all schools including special schools.
 7. Percentages from 1996/97 include GNVQ equivalents.
 8. Percentages from 2003/2004 include GCSEs and equivalents approved for use pre-16; for 2003/04, two sets of figures were published – GCSE/GNVQ only and GCSE and equivalents.
 9. The 2006 data is provisional.
 Source: DfES unpublished material, 2006, DfES 2006e, DfES 2006f

Attainment at the school and individual pupil level

Levels of attainment vary dramatically between different schools. For example, in the bottom ten per cent of schools only 32 per cent of pupils achieved five A*-C grades at GCSE in 2005, compared to 80 per cent in the top ten per cent of schools (DfES unpublished material, 2006). However, the number of schools with very low average attainment has decreased significantly in recent years (see Figure 5). In addition, the schools with the highest proportion of low-income pupils (as measured by entitlement to free school meals – ‘FSM’) have made the most progress in the recent past (See Figure 6). Both of these measures suggest that policy has successfully focused attention on some of the most challenging schools. However it is worth noting here that the non-FSM pupils have improved more than the FSM pupils within each FSM school band (DfES 2006g).

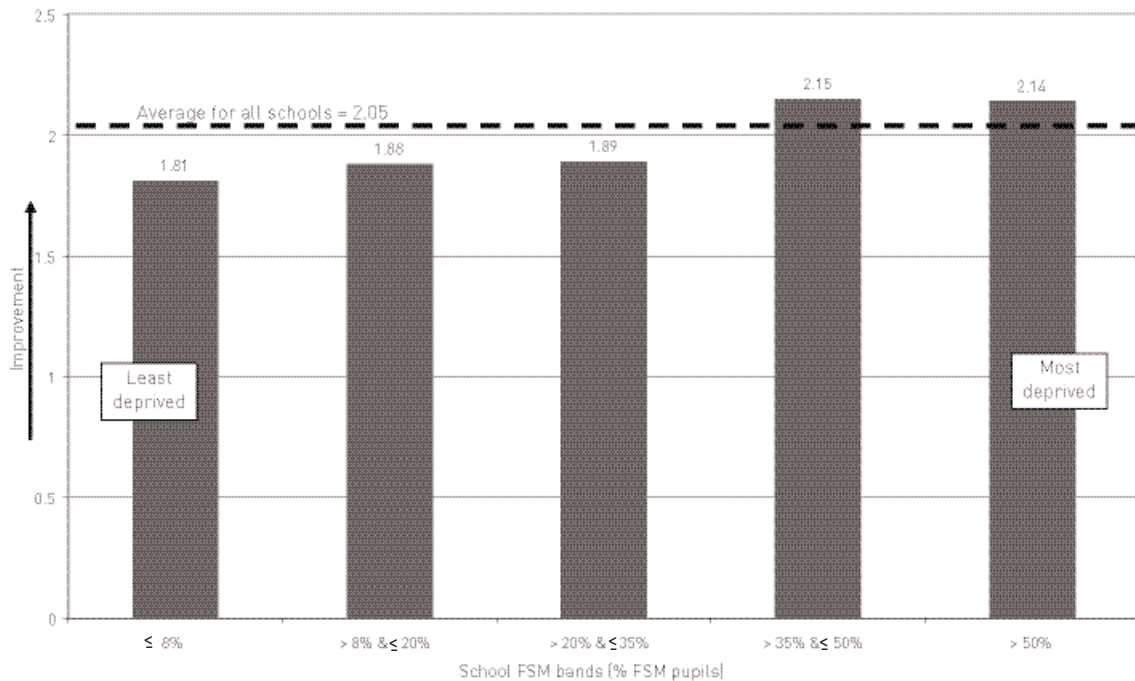
Unfortunately, the picture is much less positive at the individual pupil level, where there are large and unjustifiable variations in attainment between boys and girls, between different ethnic groups, and between those pupils entitled to free school meals and those who are not. To take just a few examples, across England only 51 per cent of boys achieved five or more good GCSEs in 2005 compared to 61 per cent of girls (see Figure 8), and only 33 per cent of Black Caribbean boys achieved it compared to 60 per cent of white girls (DfES 2006h). The percentage of Chinese girls achieving five or more A* to C at GCSE was 85 per cent in 2005 (ibid). In 2006, 61 per cent of pupils not eligible for FSM achieved five good GCSEs, compared with 33 per cent for pupils eligible for FSM (DfES 2006i). Over time, the percentages of girls and boys achieving the target levels at Key Stages 2 and 3 is very similar in both mathematics and science. However, a significant gender gap appears at both key stages in English with over 10 per cent more girls achieving the target level. Figure 7 shows the gap between girls and boys within reading and writing assessments at the end of primary school.

Figure 5 Schools not reaching the floor target at Key Stage 2, Key Stage 3 and GCSE



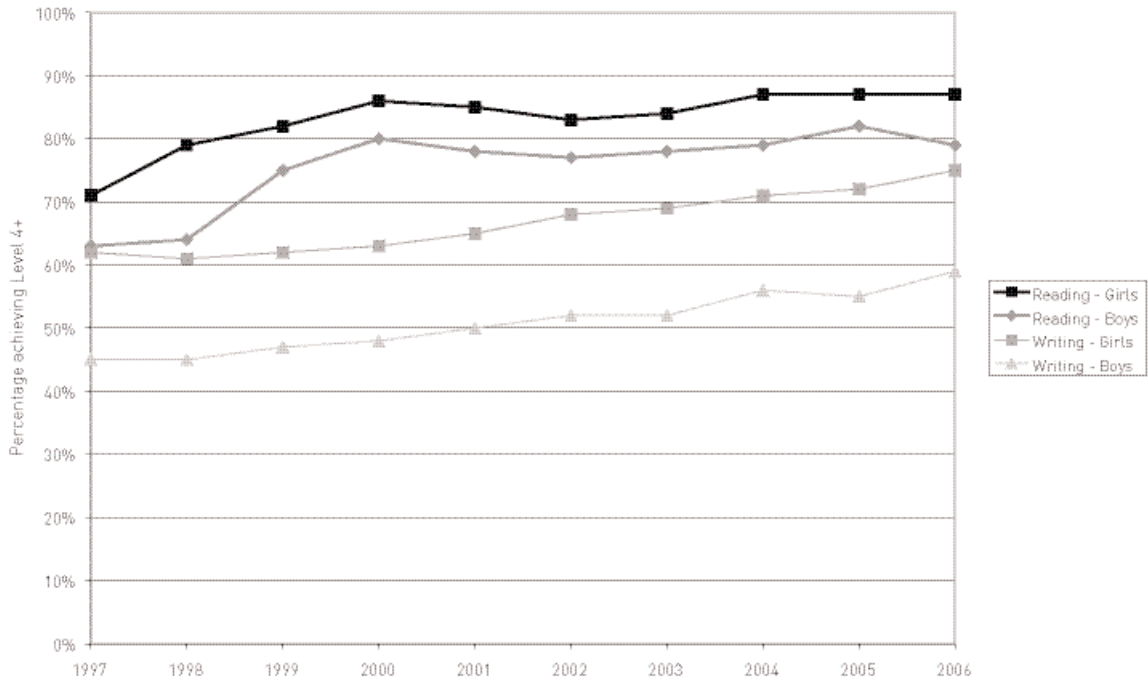
Note: See box on page 4 for floor targets for schools.
Source: DfES unpublished material, 2006

Figure 6 Change in Key Stage 2 Average Point Score for Schools by FSM school band, 1998 to 2005



Note: 1. All data is for maintained mainstream schools.
2. One point equals one term's progress. The average point score (APS) is derived from each pupil's Key Stage Test levels in English, mathematics and science.
Source: DfES 2006g

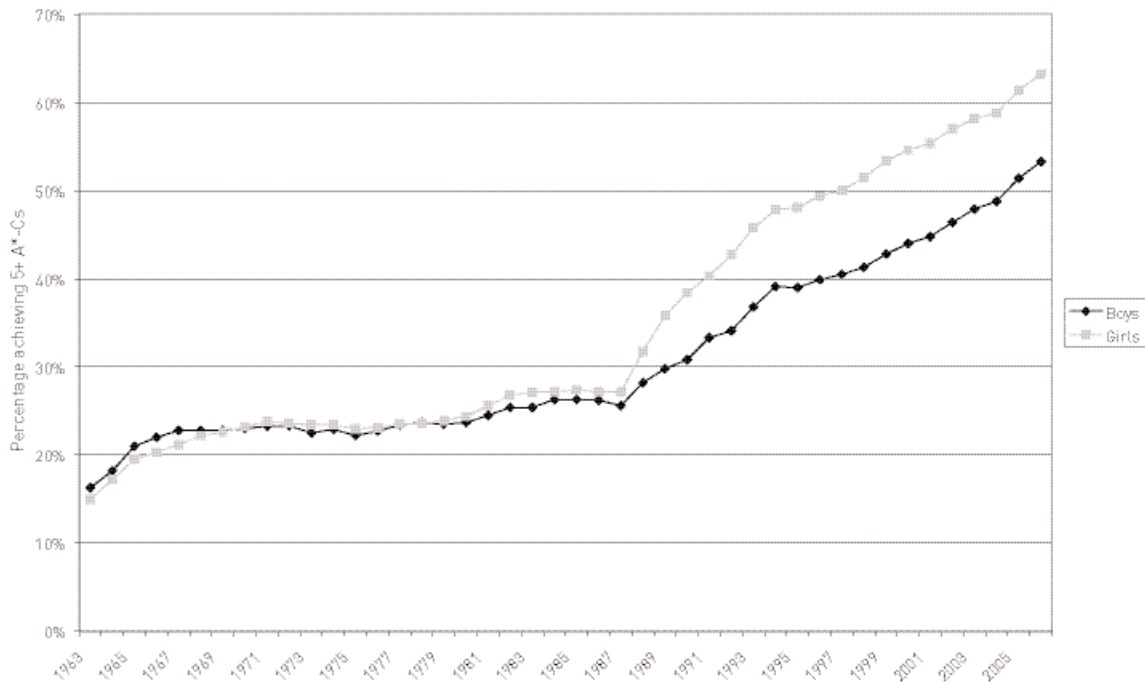
Figure 7 Attainment at Key Stage 2 in reading and writing by gender, 1997 to 2006



Note: The 2006 data is provisional.

Source: DfES 1999, DfES unpublished material, 2006, DfES 2005, DfES 2006j

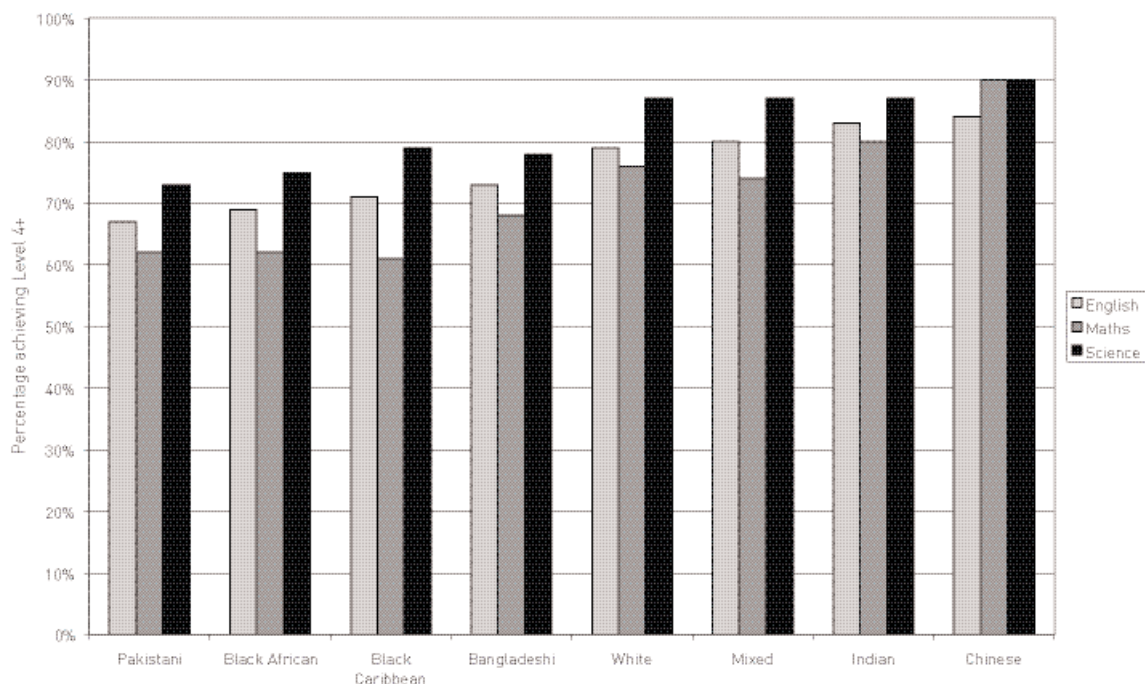
Figure 8 Attainment at GCSE by gender, 1963 to 2006



Notes: As for Figure 4.

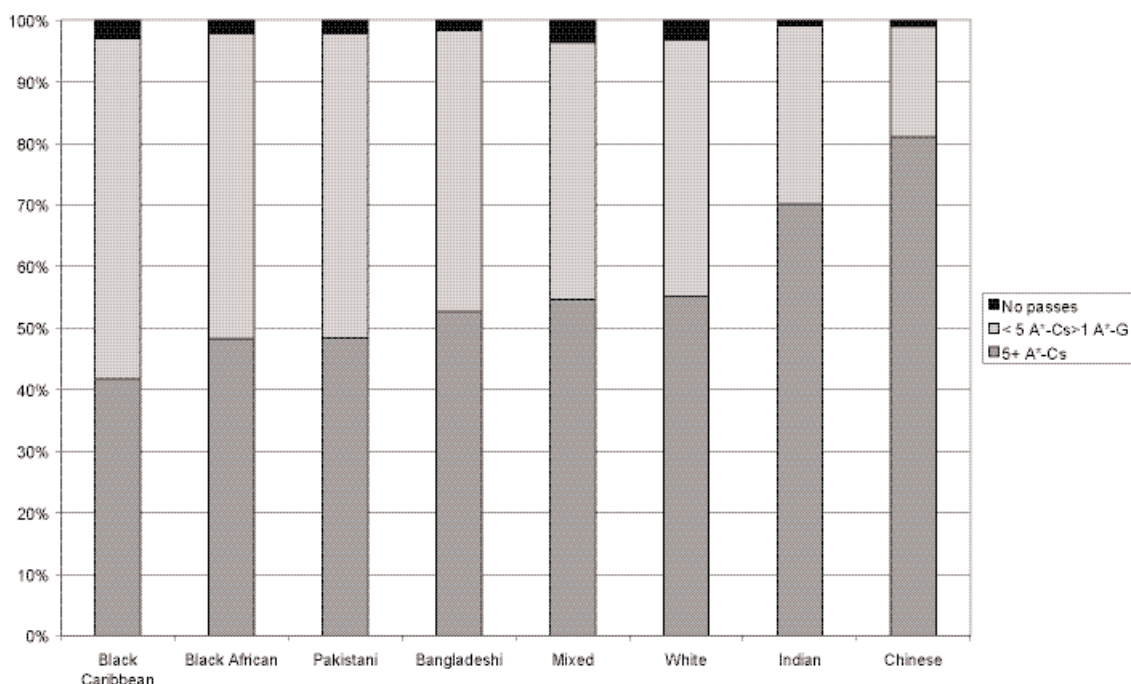
Source: DfES unpublished material, 2006, DfES 2006f

Figure 9 Attainment at Key Stage 2 English, mathematics and science by ethnic background, 2005



Note: Not all ethnicities are included.
Source: DfES 2006h

Figure 10 Attainment at GCSE by ethnic background, 2005



Note: Not all ethnicities are included.
Source: DfES 2006h

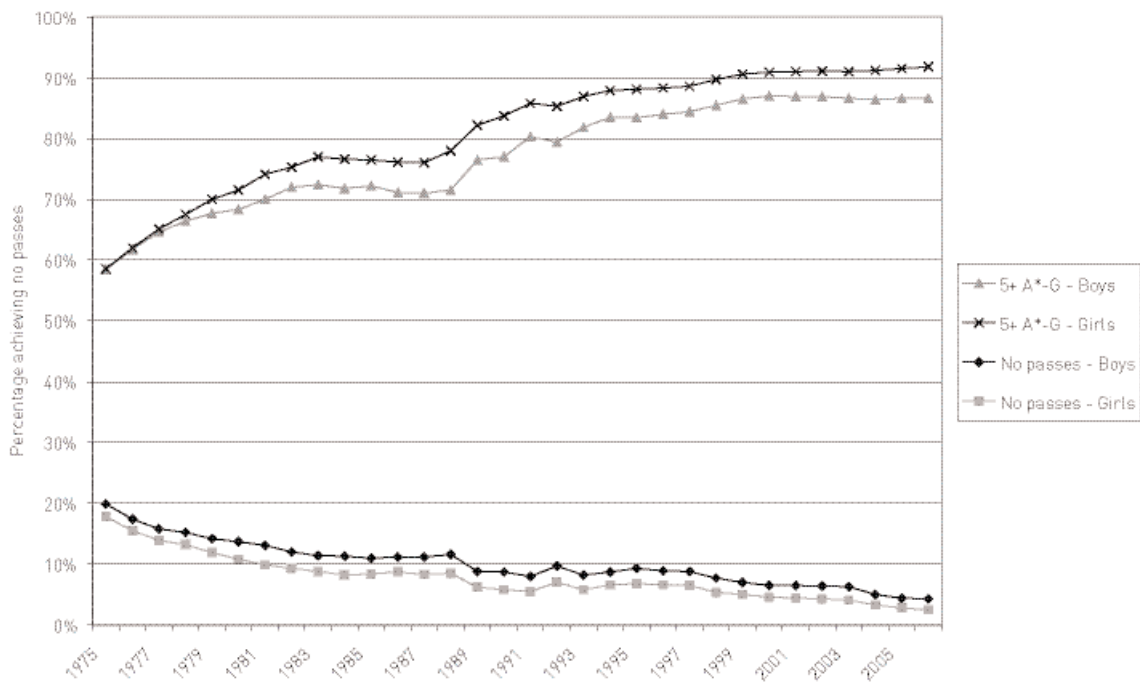
It is also possible to look at results for those pupils eligible for free school meals (and therefore from low-income homes) in comparison to the rest. At Key Stage 2, the gap in average attainment between those pupils eligible for free school meals and the rest has not narrowed at all over the period 1998 to 2005 (see Table 1). This means that it must be the more affluent pupils in the deprived schools who are doing relatively well. As our forthcoming paper (Brooks and Tough 2007) discusses, it is a major challenge to focus resources within schools on those pupils most in need.

Table 1 Attainment gaps at Key Stage 2, 1998-2005

		Non-FSM	FSM	Gap (non-FSM – FSM)
Key Stage 2 English	1998 m.a.p.s.	26.2	23.4	2.8
	2005 m.a.p.s.	27.6	24.6	3
Key Stage 2 maths	1998 m.a.p.s.	25.7	22.9	2.8
	2005 m.a.p.s.	27.6	24.7	2.9

Note: m.a.p.s. = mean average point score
 Source: DfES 2006k, Fabian Society 2006

Figure 11 Attainment at GCSE in England, 1975 to 2006



Notes: as for Figure 4, plus: Grades A*-G include GCE O level grades A-E and CSE grades 1-5 up to 1986/87.
 Source: DfES unpublished material, 2006, DfES 2006f

Many pupils are left behind

Many pupils leave school with effectively no qualifications and very poor basic skills, and this group should be of particular concern. One of the most stubborn failures of education policy in recent years is the persistent group of around ten per cent of young people who leave school without achieving five GCSEs of any kind, let alone five passes at A*-C grade. There has been little or no progress in reducing their numbers since 2000.

Within this group some do even worse. In 2006 around four per cent of boys and around 2.5 per cent of girls left school with no qualifications at all – not even one GCSE pass at G grade or its equivalent in GNVQs (see Figure 11).

These young people are far more likely to become NEET – not in education, employment or training – which is associated with a wide range of negative outcomes later on in life, such as poor health, inactivity, unemployment and low income (Chevalier and Feinstein 2006, Centre for Research on the Wider Benefits of Learning 2006, Green *et al* 2003). Table 2 shows that 33 per cent of 17- to 19-year-old males and 37 per cent of females who did not achieve any GCSEs were NEET, compared to 8 per cent of males and 11 per cent of females who gained five or more A* to Cs at GCSE (McIntosh 2006).

It is possible to identify those children who are at risk of leaving school with poor qualifications relatively early. Perhaps unsurprisingly, poor early attainment is a good predictor of poor results later on. What is more surprising is how stark the dividing lines are at the moment between those who succeed early and

Table 2 Labour force status of 17- to 19-year-olds, 2004

Males						
School qualifications	Employed	Training	Studying	Unemployed ¹	Inactive ²	NEET ³
No GCSEs	44.1%	4.3%	19.1%	20.1%	12.5%	32.6%
D-Fs at GCSE	52.7%	6.3%	16.2%	15.8%	8.9%	24.7%
1-4 A*-Cs at GCSE	59.8%	3.3%	17.3%	16.0%	3.6%	19.6%
5+ A*-Cs at GCSE	55.1%	1.9%	35.2%	6.2%	1.7%	7.9%
Females						
School qualifications	Employed	Training	Studying	Unemployed ¹	Inactive ²	NEET ³
No GCSEs	39.2%	2.3%	22.0%	11.5%	25.0%	36.5%
D-Fs at GCSE	48.6%	5.8%	15.5%	14.5%	15.7%	30.2%
1-4 A*-Cs at GCSE	58.2%	2.5%	17.4%	11.3%	10.6%	21.9%
5+ A*-Cs at GCSE	55.9%	1.7%	31.6%	6.4%	4.4%	10.8%

Notes: 1. 'Unemployed' here refers to those actively seeking work i.e. they want to work, they have looked for work in the previous four weeks and they are available to begin work within two weeks (ILO definition).
 2. 'Inactive' refers to those who are neither in employment, education or training nor looking for a job.
 3. Not in education, employment or training (the sum of the Unemployed and Inactive columns).
 4. This analysis uses the Labour Force Survey.

Source: McIntosh 2006

keep on succeeding, and those who fail early and continue to fail. Figure 12 shows the chances of GCSE success in 2005 for an average pupil, given their prior attainment at the end of primary school in reading, writing and mathematics². The differences are dramatic. Eighty per cent of the pupils who reached at least the target level in reading, writing and mathematics achieved five A*-C grades. Missing the target level in either reading or maths halved this to just 40 per cent. Missing the target level in any two of these three core skills halved a pupil's chances again so that just one in five of these pupils achieved five A*-C grades. For those who missed in all three, the figure was just seven per cent. The 'three Rs' turn out to be extremely good predictors of future success. In 2006 21 per cent of boys did not achieve level 4 in reading at Key Stage 2 and 41 per cent did not reach level 4 in writing (DfES 2006j).

A similar pattern can be observed between Key Stage 1 and Key Stage 2 (see Table 3). For example, of those pupils reaching level 2C³ in reading and writing at the end of Key Stage 1, 65 per cent reached at least level 4 in English at the end of Key Stage 2 in 2006. Of those who are one level below (ie level 1) only 33 per cent reached at least level 4. The pattern is replicated in mathematics where less than half (44 per cent) of those who achieved a level 2C at Key Stage 1 in mathematics reached level 4 at Key Stage 2 in 2006 but only 16 per cent of those with a level 1 did so. These numbers in Table 3 also illustrate why level 2B at Key Stage 1 is often considered a more important benchmark than level 2C.

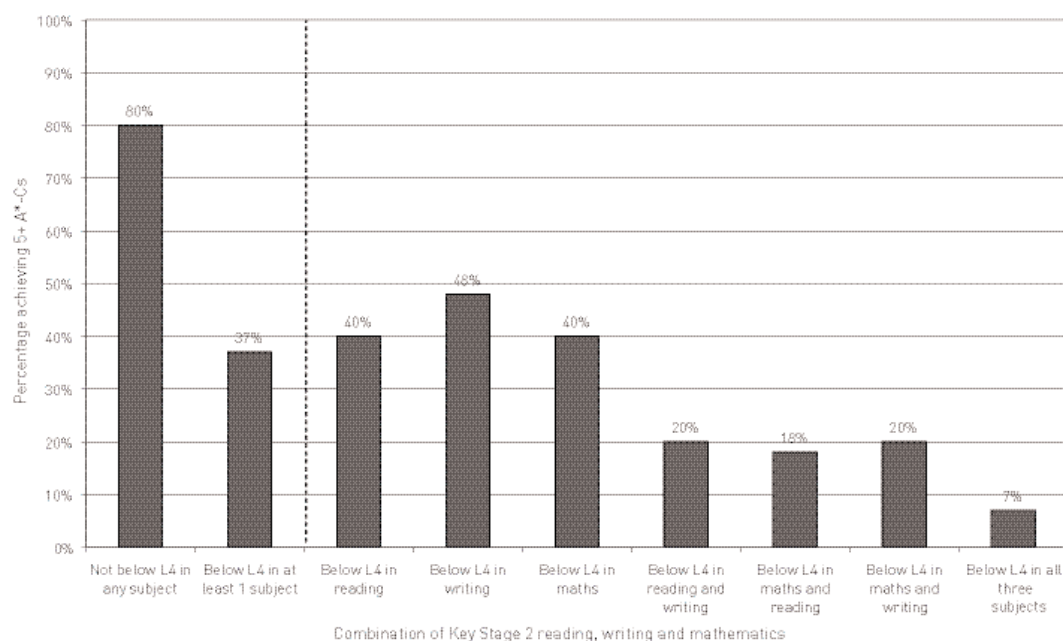
Another group that we should be particularly concerned about are those who make little or no progress after they make the transition from primary to secondary school. As shown above, prior attainment is a strong predictor of future success but it is interesting to look at how persistent low attainment is. Do pupils get stuck in the lowest performing quartile/ decile or is there considerably flow between attainment at different key stages?

Boys are more likely than girls to remain in the lowest decile of attainment between Key Stage 2 and Key Stage 4 with 36 per cent of boys in the lowest decile at Key Stage 2 still there at Key Stage 4 compared to 27 per cent of girls. They are also less likely to remain in the top half of the attainment distribution between

2. Results in science are much less significant as a predictor of future outcomes.

3. Level 2 at Key Stage 1 is broken down into 3 with level 2C being the lowest and level 2A the highest.

Figure 12 Attainment at GCSE by combinations of Key Stage 2 attainment in reading, writing and mathematics, 2005



Notes: 1. Figure shows results of cohort who took their GCSEs in 2005. The cohort therefore took their Key Stage 3 tests in 2003.
 2. The results include all pupils aged 15 on the PLASC ((pupil level annual school census)) database at the beginning of the school year.
 3. Based on provisional data.
 Source: DfES unpublished analysis, 2006l

Table 3 Attainment of pupils in all schools at Key Stage 2, 2006, by prior attainment at Key Stage 1

	Key Stage 1 level	Percentage achieving Key Stage 2 level							Total	Level 4 or above	
		A	B	N	2	3	4	5			5
Key Stage 1 reading and writing results to Key Stage 2 English	W	2	58	12	3	19	6	0	100	6	0
	1	2	11	6	4	45	31	1	100	33	1
	2C	1	1	1	1	31	61	4	100	65	4
	2B	1	0	0	0	11	73	15	100	88	15
	2A	0	0	0	0	2	61	36	100	97	36
	3 or above	0	0	0	0	0	25	74	100	99	74
Key Stage 1 mathematics results to Key Stage 2 mathematics	Level 2 or above	1	0	0	0	8	52	39	100	91	39
	W	2	58	14	3	18	4	0	100	4	0
	1	2	16	13	5	47	15	0	100	16	0
	2C	1	2	3	2	47	42	2	100	44	2
	2B	1	0	1	1	23	65	10	100	75	10
	2A	1	0	0	0	7	61	31	100	92	31
Key Stage 1 mathematics results to Key Stage 2 mathematics	3 or above	0	0	0	0	1	25	74	100	99	74
	Level 2 or above	1	0	1	1	15	46	37	100	83	37

Notes: 1. Only pupils with a valid level at both Key Stage 1 and Key Stage 2 are included, excluding pupils who were absent or disapplied from the Key Stage 1 tests. Only pupils who have reached the end of Key Stage 2 in 2006 are included. In most cases, these pupils will have taken Key Stage 1 tests in 2002.
 2. Valid results at Key Stage 2 include levels 2-5, working below the level of the test (B), took test but failed to register a level (N), absent (A), unable to access test (T) and malpractice cases. Malpractice and T values (all zero) are not included in the calculations for the table. For this table, valid results at Key Stage 1 are levels 1, 2A, 2B, 2C, 3 and 4, and working below level 1 (W).
 3. 94 per cent of pupils with a valid result in English and mathematics at Key Stage 2 also have a valid result (excluding absent or disapplied) at Key Stage 1.
 The Key Stage 1 level reading and writing is the average level, calculated using the reading and writing results.
 Source: DfES 2006c

these key stages, with 72 per cent and 82 per cent remaining respectively (Cassen and Kingdon 2006⁴). There are considerable differences in the likelihood of remaining in the lowest 10 per cent between pupils with different ethnic backgrounds. White British pupils have the highest chance of remaining in the bottom 10 per cent at Key Stage 4 if there at Key Stage 2 (34 per cent), closely followed by Black Caribbean (30 per cent) (ibid). In contrast, only 11 per cent of pupils with Indian ethnicity in the bottom 10 per cent at Key Stage 2 stayed there at Key Stage 4. Wilson *et al* (2005) show that once individual level characteristics such as family poverty (as measured by eligibility for free school meals) have been taken into account, all ethnic minority groups make better average progress during secondary school than white students and much of this progress is seen during Key Stage 4 where the exams are arguably more significant for the pupil⁵.

Table 4 Progress made by pupils from different ethnic backgrounds between Key Stage 2 and Key Stage 4

	% of schools/LAs where ethnic group progress is faster than white pupils' progress (1)		% of pupils moving group between Key Stage 2 and Key Stage 4 (2)		
	% of schools	% of LAs	% staying in same group	% moving to higher group	% moving to lower group
Black African	87%	98%	11%	61%	28%
Black Caribbean	53%	49%	11%	39%	50%
Black other	56%	55%	12%	41%	47%
Bangladeshi	92%	97%	11%	62%	27%
Indian	95%	99%	9%	71%	20%
Pakistani	92%	100%	12%	57%	31%
Chinese	86%	100%	6%	79%	15%
Other	73%	90%	10%	57%	33%
White			11%	51%	38%

Notes: 1. This is the percentage of schools/local authorities (LAs) where Key Stage 2 to 4 value added measures are greater for the specific ethnic group relative to white pupils in that school/LA. The percentages take account of the ethnic group population in each school.

2. Overall Key Stage 2 score has 17 distinct values. Therefore, total GCSE (KS4) point score was split into 17 distinct groups to mimic Key Stage 2 attainment. The presented figures are constructed on the basis of these 'groups' and movement between the groups between key stages.

3. This analysis uses the PLASC dataset 2002.

4. The data refers to raw data and does not take account of individual characteristics of the individual pupils.

Source: Wilson *et al* 2005

4. Cassen and Kingdon's analysis uses the 2003 PLASC dataset.

5. Some (about one third) of the progress is related to language and changes in pupils' ability in English language (Wilson *et al* 2005).

Analysis and recommendations

The challenges seem fairly clear. Overall attainment in English schools is rising, and the number of poor schools is falling. However, the overall rate of improvement has slowed down; there are stubborn gaps in attainment between different groups of pupils; and a significant minority continues to leave primary school with poor skills and secondary school with few qualifications.

System-wide and school-level incentives

Schools have a number of different incentives. One is to improve their performance in the national tests at the end of each key stage, especially those at the end of primary and secondary schooling. Another strong incentive is to satisfy Ofsted inspectors that the standard of provision in the school is good, and attainment is of central importance to this judgment. These incentives are designed to support the achievement of the Department's own Public Service Agreement targets, which focus on overall standards (the proportion of pupils reaching the target level of attainment at each key stage) and floor targets for schools.

One of the problems we have identified is the slowdown in improvement in overall standards. Our accompanying paper on assessment (Brooks and Tough 2006) is intended to support the objective for such improvement, essentially by freeing up teachers to use the most effective teaching and assessment methods. The other main problem we have identified is the lack of progress in relation to low attainment. Our education system does not contain the incentives to focus the attention of any of the key actors – the Department for Education and Skills, local authorities, and individual schools – on the attainment and progress of the most disadvantaged learners. It should thus come as no surprise that the inequalities and problems that we have identified continue to exist.

We recommend:

- The Department for Education and Skills should have an objective, enshrined as a Public Service Agreement, to reduce the gap between average pupil attainment at the end of the key stages and attainment by disadvantaged groups including children in receipt of free school meals, looked after children, and children from low-attaining ethnic groups.

There has been essentially no progress in improving the number of pupils who achieve at least five GCSE passes at A*-G grade in recent years. It is likely that part of the reason for this is that concentration on the 'five good GCSEs' benchmark – which has seen steady improvement to 58 per cent of pupils in 2006 – has focused attention too high up the range of achievement. Schools have little incentive to focus on the bottom ten per cent of pupils, who are very unlikely to reach this level. Shifting the focus on to achieving five A*-Cs including in English and maths – achieved by 45 per cent of pupils in 2006 – could make this problem worse if there are not other compensating changes to policy. In the longer term it is hard to see exactly what role GCSEs will play in a schools system where young people are expected to stay in more or less full-time education until they achieve qualifications at the age of 18 or 19, and where their key choices are made at the age of 14 when they decide which qualification track to choose (diploma, GCSE/A level or baccalaureate).

Overall, fewer pupils reach the target level at each successive key stage. We have made the case that every pupil needs a solid foundation of reading, writing and mathematics at the end of primary school. After this point we think the priority should shift from universal attainment to universal progress – every child should make progress from the end of Key Stage 2 to Key Stage 3. Many pupils currently get stuck at this stage of their school career, even in some cases after making good progress at primary school. A progress-related target would mean that secondary schools would have to focus on the needs of each pupil's needs, even where average attainment in the school was good.

We therefore recommend:

- To ensure that all pupils build on this foundation, the existing national attainment targets for 14-year-olds should be replaced with a progress target that all pupils should make at least one level of progress between the end of Key Stages 2 and 3.

Teaching and classroom interventions, pupil entitlements

Many different factors affect pupil attainment, and only some of these are related to the schools system. We can think in broad terms of attainment being affected by the characteristics of individual pupils; by what happens to them outside school; and also by what happens within school. While the first two of these are

stronger predictors of pupil outcomes than the third, schools nonetheless do have a highly significant impact on attainment⁶. Our focus here is on the schools system rather than the wider environment, and the rest of this paper looks at how the system of national targets, school performance management, teaching approaches and classroom interventions can help raise attainment, particularly for low-achieving pupils.⁷

There is a rich literature investigating the effectiveness of different teaching approaches, and especially their effect on outcomes for low-achieving pupils⁸. However, all studies struggle with a range of methodological difficulties. This is a result of the extremely complex interaction of observable and unobservable factors such as pedagogical techniques, school resources, pupil and teacher characteristics, and the wider environment.

In addition, most interventions that target low attainment focus additional resources such as teacher time on the target group. This can make it difficult to determine whether improvements are due to a specific process, or whether they are simply a result of increased resources per pupil. Many targeted interventions do demonstrate some positive effect for at least some pupils, but it is often difficult to be confident both that the effect is more widely replicable, and also that the activity represents good value for money compared to other possible uses of the equivalent resources. This makes it hard to draw strong conclusions about specific interventions, but we can draw some conclusions at a reasonably high level of generality.

First, teacher quality is certainly one of the most important determinants of a pupil's educational success. Some teachers achieve consistently better results than their colleagues working in similar circumstances with similar pupils (Rivkin *et al* 2005). However, we are only just beginning to understand in any detail what it is that makes these teachers better, and some of the obvious factors like length of service or qualifications do not appear to be the most significant. Instead, teaching practice that is highly responsive to pupils, and which involves a rapid cycle of assessment of individual pupil needs and consequent adjustment of teaching practice, is central to achieving good progress (Black and Wiliam 1998).

This kind of teaching is designed to meet the needs of each pupil personally, but in the context of whole classroom teaching rather than individual tuition. In order to drive up overall standards, the use of assessment for learning and the most effective pedagogical techniques should become a priority in both initial teacher training and continued professional development. In addition, if we want to address underachievement, there needs to be a special focus on both developing these practices in the most challenging schools, and on ensuring that pupils at risk of low attainment are taught by the best teachers.

We should be cautious about imposing specific programmes and interventions on schools or local authorities unless they have been shown to be widely replicable and represent significant value for money. There are some specific programmes that do appear to meet these criteria. The National Literacy Project, which led to the national literacy hour, is a good example (Machin and McNally 2004). Reading Recovery, which targets one-to-one tuition on children who are having reading difficulties in their first years of primary school, is another (Burroughs-Lange 2006), and in the 2006 Pre-Budget Report the Chancellor announced the intention to expand this programme across England.

All pupils leaving primary school should have the necessary literacy and numeracy skills to make a success of their secondary schooling. The evidence suggests that this can be reasonably defined as reaching level four in each of reading, writing, and mathematics. To date, the strategy for achieving this has been to set overall attainment targets at the national level and to cascade these down through local authorities and Ofsted to individual schools. However, we should also approach the problem from the other direction and give individual pupils entitlements that impose duties upwards on schools.

We propose that primary school pupils should all have a 'three Rs guarantee' that entitles them to personalised, structured support if they are not achieving the target levels of literacy and numeracy. A 'three Rs guarantee' would work by requiring schools to identify pupils at risk of failing to achieve the necessary level of ability in reading, writing, and mathematics, and then to take action to address their

6. For example, see various papers since 1986 by Hanushek EA, or for a wide ranging survey see Vignoles *et al* (2000).

7. The accompanying paper (Brooks and Tough 2006) examines the assessment system and national testing at the end of the Key Stages. School admissions and funding will be the subject of forthcoming papers in the same series; recent ippr work has examined some of the wider and non-cognitive aspects of young people's development (Margo *et al* 2006); and a future ippr project will investigate parenting.

8. For a wide ranging introduction see Machin and Vignoles (2005).

specific needs. Table 5 below indicates the number of children in England that this would affect for each subject. Overall, in 2006 46 per cent of boys and 35 per cent of girls missed the target level at the end of primary school in at least one of reading, writing and mathematics (DfES 200j). Our recommendations would thus affect a large proportion of all primary school pupils in some way.

		Pupils not achieving at least the target level	
		Boys	Girls
Key Stage 1	Reading	55,600 (19%)	30,800 (11%)
	Writing	68,300 (24%)	35,300 (13%)
	Mathematics	31,400 (11%)	22,300 (8%)
Key Stage 2	Reading	62,500 (21%)	37,900 (13%)
	Writing	123,200 (41%)	73,400 (25%)
	Mathematics	70,600 (23%)	71,700 (25%)

Notes: 1. Numbers are rounded to the nearest 100.
2. Key Stage 1 figures are based on teacher assessment.
Source: DfES 2006b, 2006j

The specific package of support for these pupils, for example a reading recovery programme or another targeted intervention, should be left to the discretion of the individual school. However, schools would have to be able to give an account to parents and school inspectors of how they were fulfilling the child’s entitlement.

Schools are operating within a context of increasing financial resources, including an aspiration to increase per-pupil spending in the primary maintained sector to the average of the private sector. We do not attempt to estimate the additional costs of our proposal here, but we do not see the implied activity as simply additional to what schools are already doing. The purpose of the entitlement model is to focus attention and resources within the schools system on those pupils who are currently achieving the least. We will discuss funding in a separate paper in this series.

It would not be possible to guarantee that every child succeeded in every subject – the entitlement would be to the support, not to the outcome. The purpose of an entitlement model such as this is to focus the school’s attention on each pupil individually rather than just on average measures of performance, and thus to focus special attention on the pupils at greatest risk of low attainment.

We therefore recommend:

- Children below the expected level of attainment in literacy and numeracy in their first year of primary school should be entitled to an appropriate programme of structured support from their school, such as a reading recovery programme.
- The same should apply at the beginning of Key Stage 2 for all those children who were below the target level of attainment in reading, writing and mathematics at the end of Key Stage 1.
- How these entitlements are fulfilled should be down to the individual school, which should have the freedom to design the appropriate package of support, but it must give an account of what it is doing to the parents of the affected children, and each school’s arrangements should be inspected by Ofsted in the normal course of its activities.

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