

Narrowing the Gaps: from data analysis to impact

The golden thread



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Introduction

...generations of low and middle-income young people will miss out unless we do more to close the educational attainment gap...For reasons of economic progress, we need a second wave of mobility. But, more than that, this is a question of basic justice. A talent unfulfilled is not just an opportunity cost. It is an opportunity lost.

(Alan Milburn MP, chair of the Government's panel on social mobility, July 2009)

Children entitled to free school meals (FSM) encompass the full spectrum of needs and backgrounds in the school community, including white and minority ethnic pupils, children in care, gifted and talented (G&T) children and those with special educational needs (SEN). Each child in this diverse group is an individual; they need adults who take the time to understand and personalise provision, through quality-first teaching, to help them to overcome barriers to learning through the systematic application of what works well. Many children do well but too many do not; there is an urgent national priority to unlock the potential of these children and to narrow gaps between those entitled to FSM and their peers.

Successful schools are single-minded in narrowing gaps. They:

- use data to identify gaps and to make them visible, pinpoint pupils at risk of underperforming and challenge those whose progress needs to accelerate
- accept no excuses
- take time to understand the needs of each pupil, know what works best for vulnerable and disadvantaged pupils and apply it consistently and relentlessly
- evaluate, celebrate and share success.

This publication focuses on one part of this: the effective use of data in primary and secondary schools and settings to focus and drive action to accelerate the progress of underachieving pupils entitled to FSM.

At the outset, however, it is important to be clear about what data will and will not do. Historic data relating to past cohorts will not necessarily tell you about current cohorts, though patterns often stubbornly repeat themselves. In addition, as every school knows, data must be complemented by teachers' professional and personal knowledge of children's potential. What data will do, however, is powerful and important. It helps schools to:

- identify patterns that repeat themselves year after year and that need intervention in relation to pupil groups, teachers, subjects or components of courses
- test these patterns against live data, tracking pupils in school now
- drive analysis down, to groups and individual pupils, to target action to support improvement.

The national picture

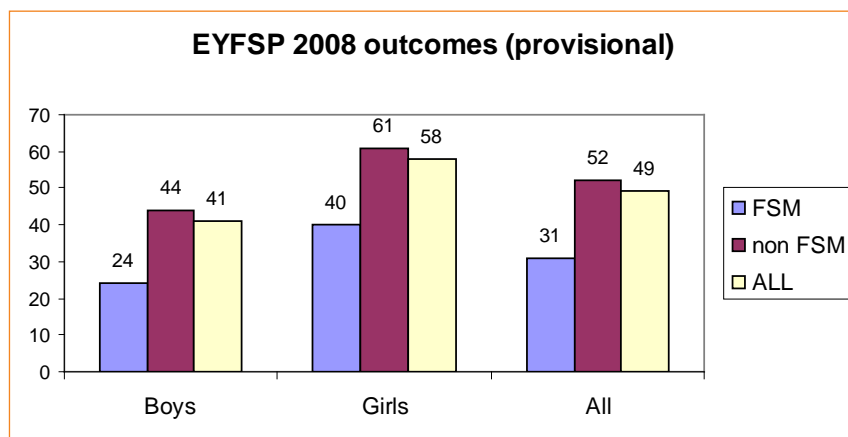
There have been considerable improvements in standards in the last ten years, with some positive signs of narrowing attainment gaps:

- more young children are reaching a good level of development and more young people than ever are reaching national expectations at the end of Key Stages 2 and 4
- results have risen in every local authority (LA) in the country
- schools serving the most deprived communities have made the most progress
- some underperforming minority ethnic groups have made above average progress.

Yet much remains to be done to increase rates of improvement if we are to succeed in tackling the deep-rooted underachievement of many children entitled to FSM and further narrow gaps in attainment. The DCSF publication, *Breaking the link – Everyone's business* (Ref: 00357-2009), highlights the urgent challenges that we face.

A key challenge relates to children from disadvantaged backgrounds. Some have made big gains but there is still a strong link between disadvantage and achievement with disadvantaged children falling behind from the early years. Children who start off in the bottom 20% in the Foundation Stage are six times more likely to be in the bottom 20% at Key Stage 1 than their peers. Chart 1, based on 2008 (provisional outcomes) for the Early Years Foundation Stage Profile, shows the stark difference in attainment between FSM and non-FSM children, boys and girls.

Chart 1



By the end of Key Stage 4, FSM pupils are more than three and a half times less likely to attain five or more (5+) A*–C grades at GCSE, including English and mathematics, than the rest of the cohort and, although the gap has narrowed slightly for girls, the gap between FSM boys and, in particular White British FSM boys and their peers shows little sign of narrowing.

Chart 2

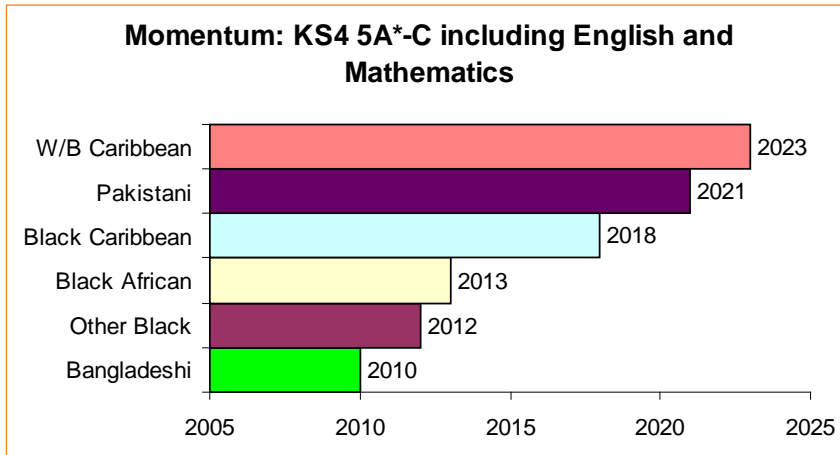


Chart 2 shows that, in relation to underperforming minority ethnic groups, at the current national rate of improvement the talents of too many pupils from minority ethnic groups will not be fulfilled. Some schools and some LAs have shown that they can buck the trend and increase rates of improvement; this gives us the confidence that we should and must see similar improvements elsewhere.

For gifted and talented pupils there are also gaps, in relation both to identification and to outcomes. Only 5.9% of FSM pupils in primary schools and 7.3% of FSM pupils in secondary schools are identified as gifted and talented in comparison to 9.1% of non-FSM pupils in primary and 14.2% in secondary schools. There remain considerable gaps in attainment between FSM and non-FSM gifted and talented pupils. At Key Stage 4 in 2008, for example, the proportion of FSM gifted and talented pupils attaining three or more (3+) A*–A grades at GCSE was 34.1% in comparison to 59.7% of non-FSM gifted and talented pupils, a gap that has not narrowed in recent years.

More pupils with SEN are achieving national expectations at Key Stage 2 and the gap between pupils with SEN and the rest of the cohort achieving level 4 or above (L4+) in English and mathematics has reduced from 42 percentage points (ppts) to 39 ppts from 2005 to 2008. At Key Stage 4, the proportion of pupils with SEN who achieve five A*–C, including English and mathematics, has increased, from 8.0% in 2005 to 11.8% in 2008; however, the gap in achievement between these pupils and those without SEN has widened slightly, from 43 ppts to 45 ppts.

The evidence is clear. We need a concerted effort to narrow the gaps in attainment between disadvantaged vulnerable pupils and their peers. This is a national priority, reflected in the Government's targets of individual progress to achieve world-class standards, and narrowing the gaps in educational achievement for children from disadvantaged families. The focus on narrowing gaps is reflected in one of the strategic aims of the National Strategies.

...[to] improve outcomes for all children, with a particular focus on those from disadvantaged backgrounds, those on free school meals (FSM), those with special educational needs, gifted and talented pupils, and those from minority ethnic groups who are vulnerable to underperformance.

National Strategies Annual Plan Summary, 2009–10

It will be essential for every school and local authority to work through to a point of absolute clarity about where the gaps lie and which are the pupils whose progress needs to accelerate.

The purpose of this booklet

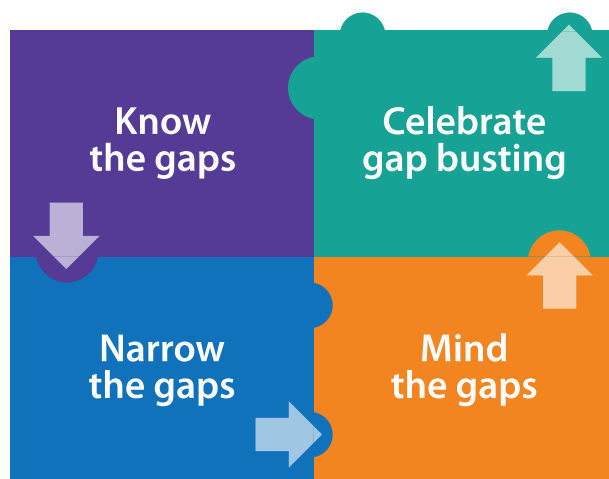
That's all very well, but what's the golden thread? Show me how it all connects; show me the thread that runs through from analysis of data to action that makes a difference to the life chances of children and young people.

Primary teacher

Using data to identify low attainment, weak progress and gaps in attainment has long been a focus of schools. This booklet aims to support senior teams, in both primary and secondary phases, by setting out a practical approach for seeing analysis through to impact, with a particular focus on narrowing gaps for disadvantaged groups of pupils. We have called this the 'golden thread' that connects analysis through to targeted action and impact. The following pages provide a summary of key actions, exemplified through a case study, with information about other relevant resources.

All schools have a very wide range of data on which to draw and, in many, there is now a depth of expertise; teachers and leaders have the capacity to absorb, analyse and use data effectively. Data analysis stimulates debate and informs evaluation. From complex analysis, however, simple messages must emerge to bring a sharp focus to the school's commitment to improve. As well as considered analysis of historic outcomes, effective systems track progress of current pupils against challenging targets. Live sets of data are routinely, rapidly and effectively used to bring challenge, to drive improvements to teaching and learning and to shape interventions to keep pupils on track.

The Narrowing the Gaps strategy, based on good practice in schools, focuses on four key elements of addressing under-performance of particular groups of pupils.



Know the gaps (good data analysis that leads to action and impact)

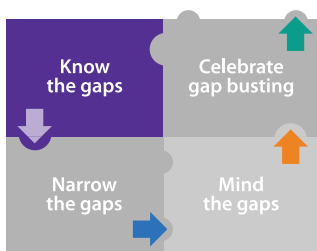
Narrow the gaps (planning for progression, effective pedagogy, personalised intervention)

Mind the gaps (systematic assessment and tracking)

Celebrate gap busting (acknowledge and build on successes)

Analysis to impact: the golden thread

This section provides a framework and suggests a series of actions to ensure effective use of data to narrow gaps. It sets out key steps drawn from successful schools and can be used as a tool for self-review and/or a structure for development to ensure that interrogation of data drives through to effective, focused and evaluated action – the golden thread of improvement.



Know the gaps

1. Analyse and evaluate

Use data, including information about young children's development from the Early Years Foundation Stage Profile (EYFSP) and from previous early years settings, and analyses such as those provided through RAISEonline, to support evaluation of attainment and progress data to make evidence-based judgements of where gaps need to be narrowed.

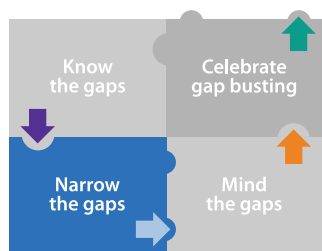
2. Agree priorities

Use the evaluation to identify the specific priorities for narrowing the gaps, checking historical data against live tracking data to identify patterns of underachievement. This can point to a clear and shared evaluation of the specific groups where there is potential to accelerate progress. The priorities may closely reflect the evaluation judgements or recognise an underlying, wider cause.

3. Set objectives

Set clear objectives. Once the specific focus has been identified, drill down further and identify the specific pupil group(s) – defined by prior attainment, gender, FSM eligibility, ethnicity, subject, year group or key stage – precisely enough for the school to be able to list targeted pupils. Expected outcomes, for example, in relation to the EYFSP, key-stage tests or GCSE results, should be identified and systems, processes and specific actions to underpin improvement agreed.

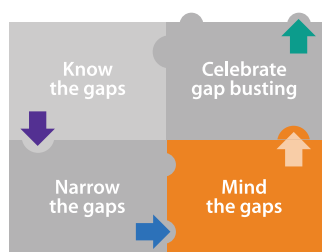




Narrow the gaps

4. Focus actions

Identify the actions and follow them through. Once the targeted pupils have been identified, establish what is likely to make most difference for each pupil in accelerating progress to narrow the gaps – ensure quality-first teaching, engage targeted pupils in a dialogue about their learning and progress, be clear about any intervention strategies, identify who will lead and be accountable for the accelerated progress of the identified pupils and how progress will be monitored and evaluated.



Mind the gaps

5. Measure impact

Agree at the outset how and when you will measure success against the targets set. Clarity about targets, milestones and success criteria provides a focus for assessing and tracking progress and judging success from the outcomes.

In practice, evaluation and reflection are present throughout. Clarity and formality about each of these elements in the sequence, however, can be helpful in focusing improvement. A summary of key actions is given below.

Key actions summary – the golden thread

1. Analyse and evaluate

- RAISEonline analysis of outcome data identifies groups making slow progress.
- Data checked against the self-evaluation form (SEF), challenged and confirmed through governors and school improvement partner (SIP).
- Comparative review carried out of live tracking data for similar groups currently in school.
- Specific progress groups identified.

Evaluation = judgement + evidence + progress group(s)

2. Agree priorities

- Priorities for narrowing gaps are agreed.

Priorities = specific area(s) for improvement

3. Set objectives

Clear and explicit definition of what success means, to specify:

- progress group(s), defined by prior attainment, gender, FSM eligibility, ethnicity, subject, year group or key stage precisely enough to be able to list target pupils
- outcomes, for example, in relation to GCSE results
- systems and processes required to underpin improvement.

Objectives = pupil group(s) + outcome + systems and processes

4. Focus actions

Confirm:

- who leads and is accountable for the accelerated progress of pupils identified
- what the school will do for each pupil and why it will work
- the resources allocated
- how and when to judge success, with an indication of milestones and sources of evidence.

Actions = lead + activities + resources + milestones (time line)

5. Measure impact

- Track progress and judge success.

Impact = tracking + evaluation

The process in action

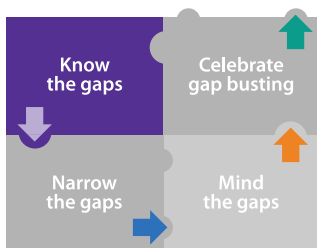
The process set out in this document is illustrated below in the form of a case study in the context of an inner city primary school. Although management and resource issues and the levels of complexity are different in different contexts, it is hoped that leadership teams in early years and secondary settings will be able to draw from this case study the general principles of effective data analysis, leading to action and impact.

The National Strategies e-learning module 'Raising the bar and closing the gaps', from the resource Evaluating school performance (www.standards.dcsf.gov.uk/nationalstrategies, select 'Leadership', 'Using data for school improvement', then 'Evaluating school performance'), supports analysis and use of data in relation to standards, progress and closing attainment gaps and provides early years and secondary examples, together with a further primary phase example.

The case study

High Tree primary school is a one-form entry primary school serving an area of relatively high deprivation. Its basic characteristics are:

- 46.2% of pupils eligible for FSM (national 16.9%)
- 12.8% from minority ethnic groups (national 21.9%)
- 8.4% of pupils speak English as an additional language (national 13.4%)
- 25.0% identified with SEN, including statements (national 19.2%)
- school deprivation indicator is 0.5 (national 0.2)



Know the gaps

1. Analysis and evaluation – what are our attainment gaps?

In the school's 2007 RAISEonline full report, we looked at the average point scores (APS) for English, mathematics and science at Key Stage 2 (Chart 3).

Chart 3

	All NC Core Subjects			English			Mathematics			Science		
	School	National	APS	School	National	APS	School	National	APS	School	National	APS
	Cohort	APS	APS	Cohort	APS	APS	Cohort	APS	APS	Cohort	APS	APS
All Pupils	32	25.3	28.0	32	24.5	27.6	32	25.1	27.3	32	26.4	29.0
Gender												
Male	18	26.1	27.9	18	24.9	27.0	18	26.6	27.6	18	26.6	29.0
Female	14	24.4	28.1	14	24.0	28.3	14	23.1	27.0	14	26.1	29.0
Free School Meals												
FSM	13	23.7	25.7	13	22.5	25.2	13	23.0	25.0	13	25.5	27.0
Non FSM	19	26.4	28.4	19	25.7	28.1	19	26.4	27.8	19	27.0	29.4

Results for all three subjects were below the national averages. We knew that gaps in attainment were worse in mathematics than in the other two subjects and that this had been a pattern in previous years. The 2007 RAISEonline report highlighted that in mathematics the gap between boys and girls and the gap between FSM and non-FSM pupils was wider than the national averages. The APS for girls was 3.5 ppts lower than that for boys, compared to 0.6 ppts nationally and APS for FSM pupils was 3.4 ppts lower than that for non-FSM, compared to a 2.8 ppts difference nationally.

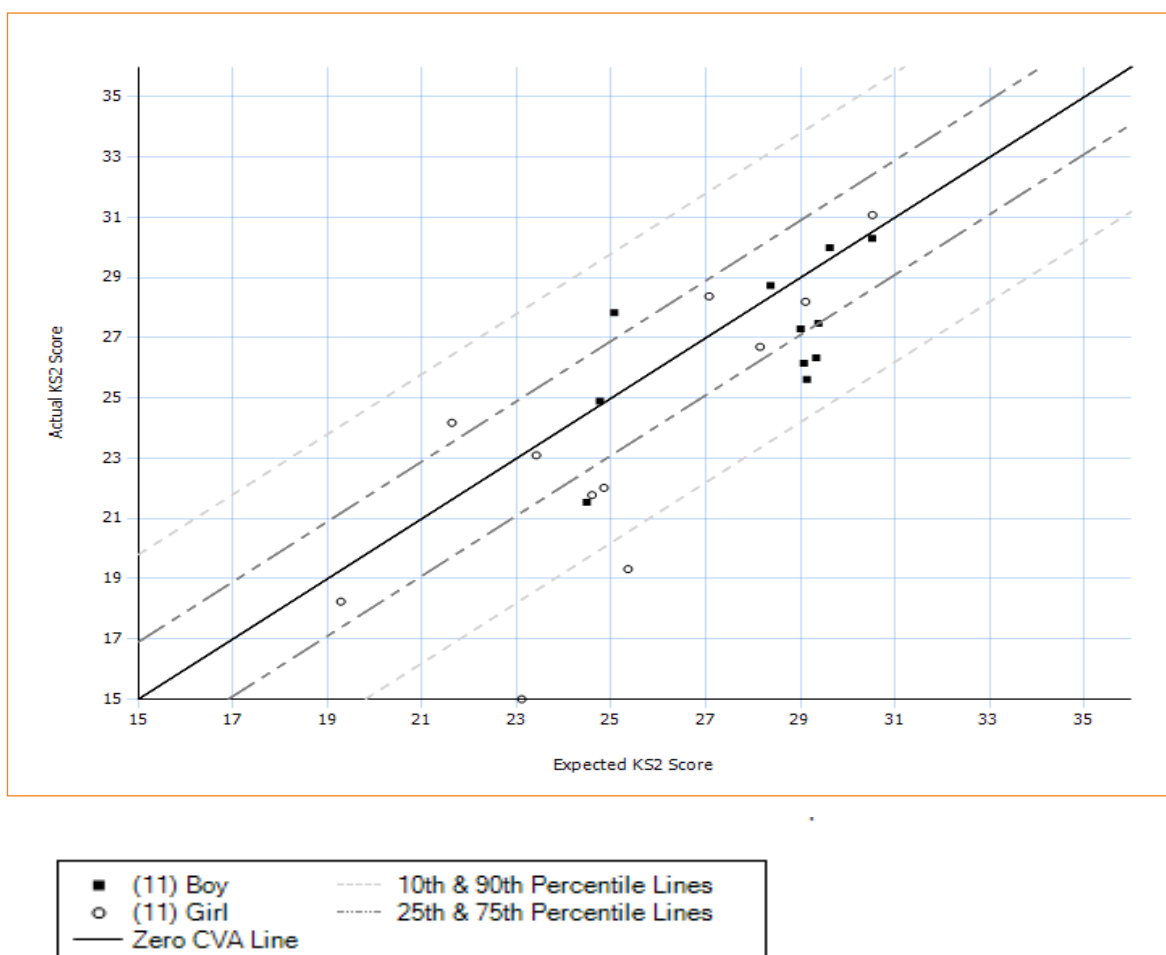
2. Priorities – what will be our focus?

From the main analysis and staff knowledge we decided that we needed to prioritise progress in mathematics. In order to set a specific objective, we decided to take a more detailed look at individual pupil outcomes in mathematics, using interactive RAISEonline.

We looked first at our Key Stage 1 to Key Stage 2 contextual value added (CVA) analysis by pupil, first looking at the spread of pupils by gender (Chart 4). This showed that 12 of our 22 pupils did broadly as expected. But the graph showed that our results were skewed: only two pupils (one boy and one girl) did significantly better than expected (above the 25th percentile line) whereas eight pupils (four boys and four girls) did significantly worse than expected (below the 75th percentile line), two of whom were below the 90th percentile line.

Chart 4: Key Stage 1 to Key Stage 2 contextual value added analysis by pupil 2007 (mathematics)

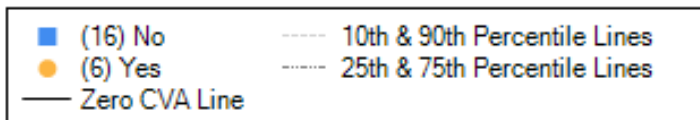
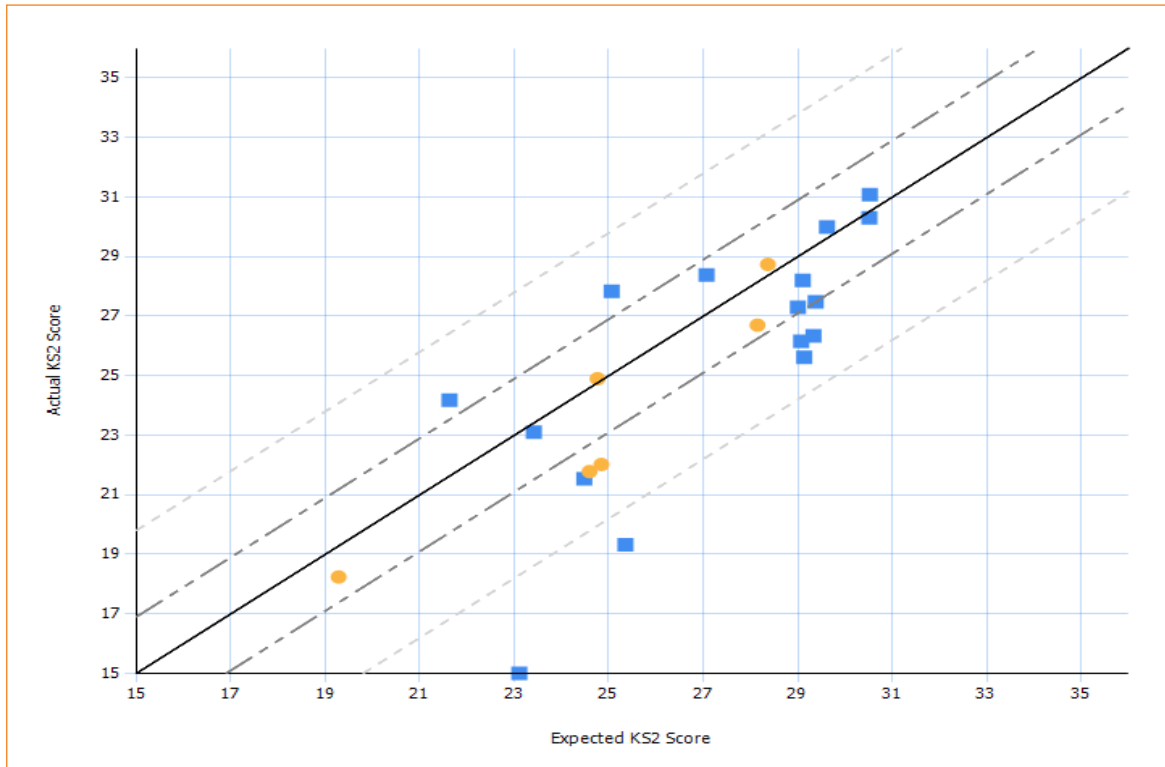
2007 primary mathematics (Key Stage 2) contextual value added line, showing spread of pupils by gender, based on comparing the predicted outcome with the actual outcome of each pupil.



The spread of pupils by free school meal entitlement (Chart 5) showed that, of the six pupils entitled to FSM, two had attained well below expectations (below the 75th percentile line) and none did significantly better than expected (above the 25th percentile line).

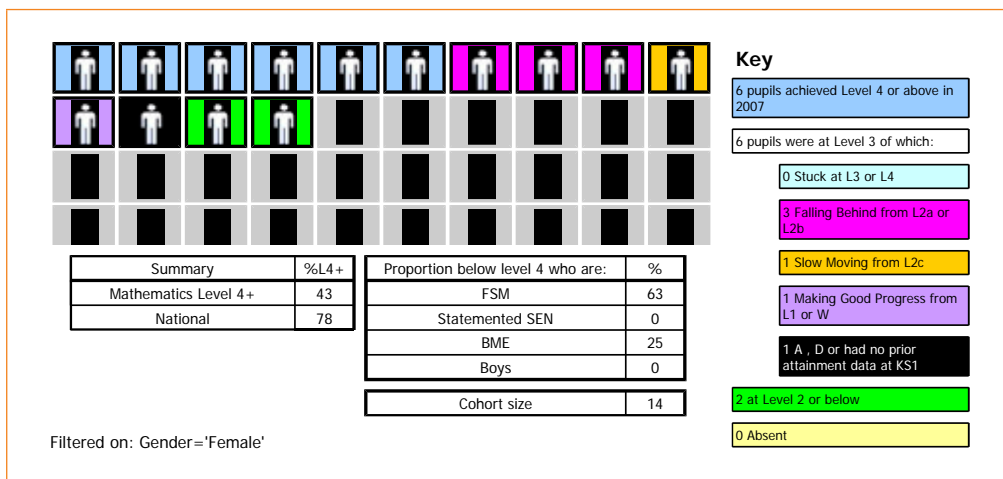
Chart 5: Key Stage 1 to Key Stage 2 contextual value added analysis by pupil 2007 (mathematics)

2007 primary mathematics (Key Stage 2) contextual value added line, showing spread of pupils by free school meal eligibility – the analysis is based upon comparing the predicted outcome with the actual outcome of each pupil.



The Key Stage 2 pupil progress chart (Chart 6), filtered on gender, showed that of the six girls who achieved level 3 at Key Stage 2, four had achieved level 2c or better at Key Stage 1, thus making only one level of progress.

Chart 6



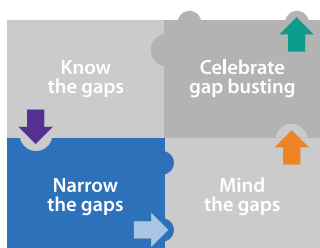
3. Setting objectives – which pupils should we target?

From these analyses we established our objective.

- To improve progression rates in mathematics with a particular focus on girls and FSM pupils.

We identified our intended outcome.

- All girls and all FSM pupils to achieve at least their predicted level in mathematics (all above the 75th percentile line on contextual value added analysis, and at least half of them above the zero CVA line).



Narrow the gaps

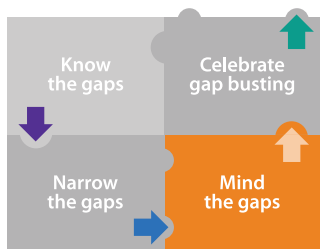
4. Actions – what will make the difference in our school?

As a staff we agreed on short-term and longer-term actions that were needed to improve progression in mathematics. Following the Williams review (Sir Peter Williams, Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, 2008) and knowing that we needed to give priority to mathematics, we had already identified a mathematics specialist. In the short-term, for the incoming Year 6 class, we agreed the following points.

- Early identification and intervention were essential if we were going to improve progress and results in Year 6. This would be done by the class teacher, in discussion with the headteacher. One-to-one tuition would be provided where appropriate.
- Individual pupil targets – end of key stage and interim curricular targets – would be set by the class teacher, supported by the mathematics specialist.
- An additional teaching assistant would be allocated to the class for one hour a day, to allow the class teacher to do some focused mathematics work with targeted pupils, including working on mathematical language with four pupils, two of whom were learning English as an additional language and two identified as having language and communication needs.
- The mathematics specialist would work with the class teacher in planning day-to-day lessons and, once a week, give additional enrichment work to a group of six FSM girls who were identified as not making expected progress.
- The mathematics specialist would also moderate teacher assessments to ensure tracking data is accurate and consistent.

Longer-term actions were also agreed.

- A programme of continuing professional development (CPD) should be provided, for all teaching and support staff, focusing on improving mental mathematics and using and applying mathematics, both having been identified as areas in which staff felt they needed to improve. There would be a particular emphasis on developing teachers' questioning techniques.
- Better systems for tracking pupils' progress in mathematics, starting with tracking from Key Stage 1 to Key Stage 2, would be set in place, alongside a clear approach to early intervention.



Mind the gaps

5. Impact – how will we know if we have been successful?

Using the enhanced tracking system, we agreed to monitor the progress of all pupils in Key Stage 2 each half-term. For the new Year 6 class we would monitor progress more frequently – every four weeks – based on the curriculum targets set by the class teacher, paying particular attention to the progress of the FSM girls. If there was any sign of progress stalling we would look again at the support we had in place and agree any further actions that might be necessary.

Our own teacher assessments and tracking systems indicated an improvement in progress but we were keen to see if these judgements were reflected in the Key Stage 2 test results. We were extremely pleased with the outcomes. Analyses showed that girls overall, and FSM pupils in particular, have done very well in the 2008 national tests, as revealed in Charts 7 and 8.

Chart 7: Key Stage 1 to Key Stage 2 contextual value added analysis by pupil 2008 (mathematics)

2008 primary mathematics (Key Stage 2) contextual value added line, showing spread of pupils by gender – the analysis is based upon comparing the predicted outcome with the actual outcome of each pupil.

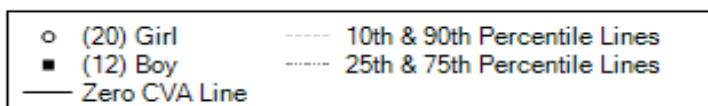
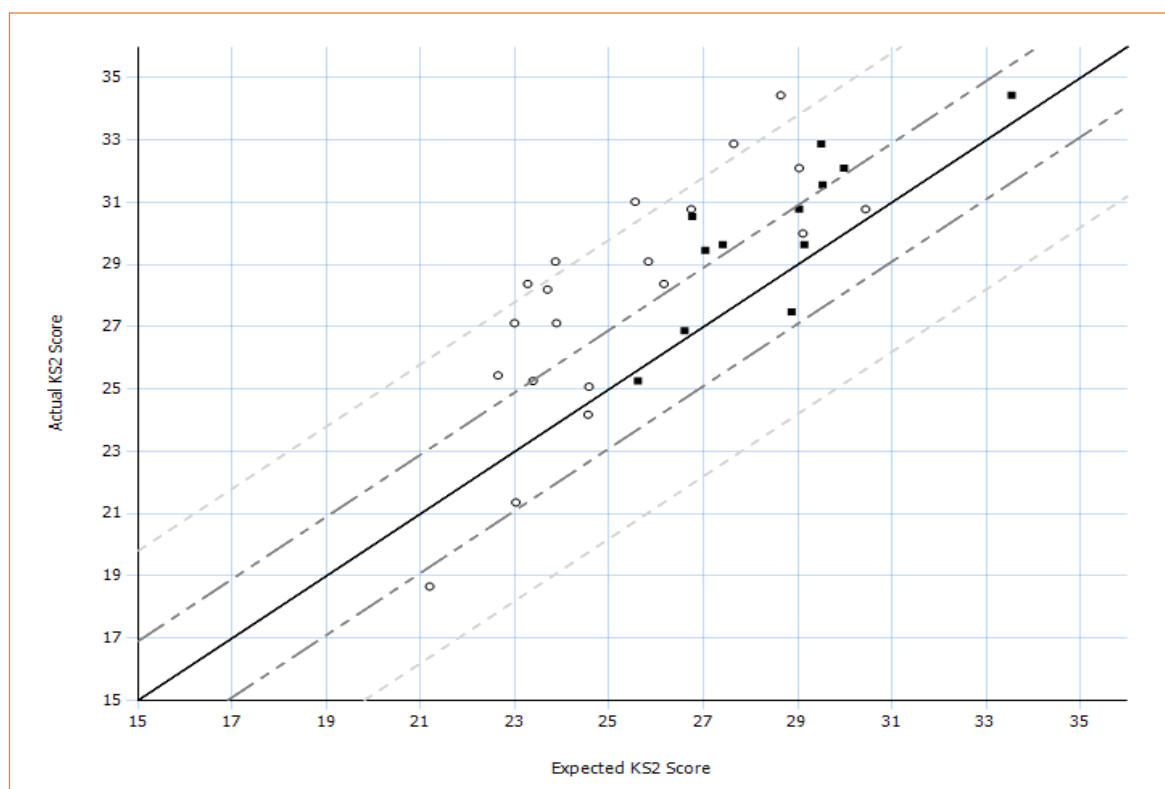
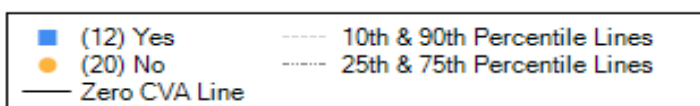
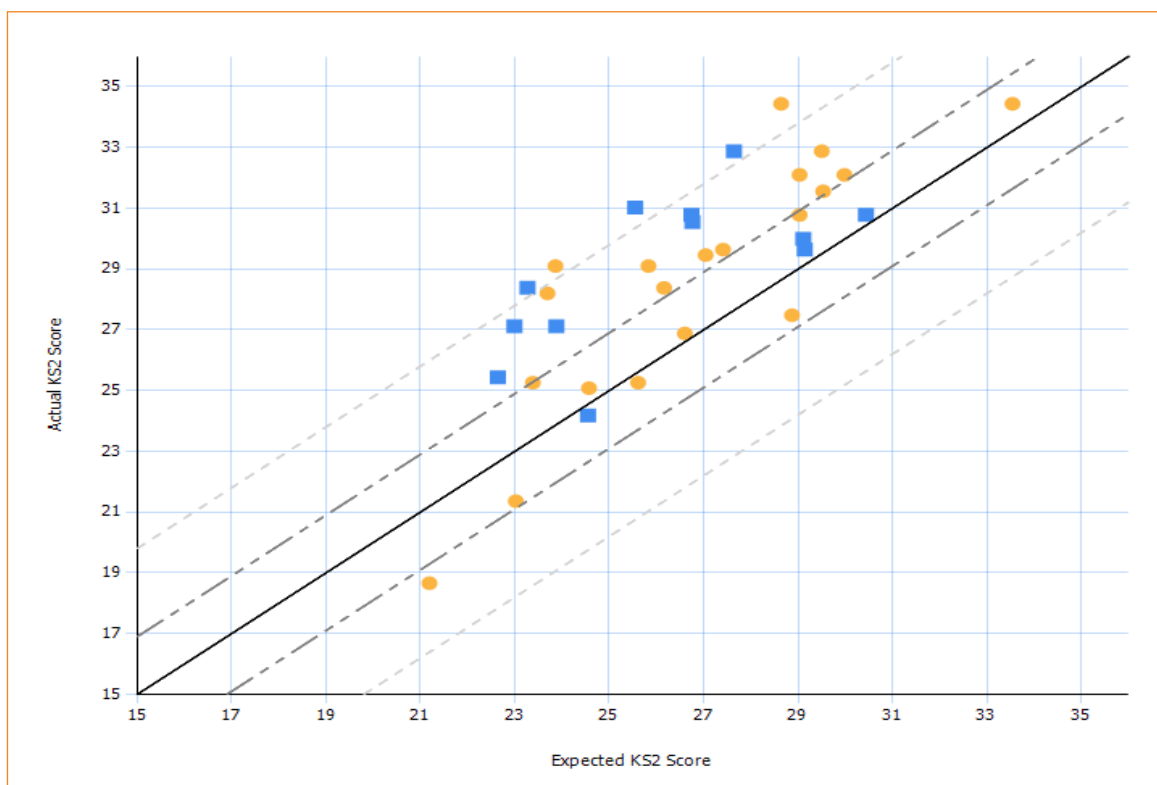


Chart 7 shows that the entire Year 6 cohort did well. All but one were above the 75th percentile line and 27 of the 32 pupils were above the zero CVA line. Results for girls were especially strong – 14 of the 20 girls were on or above the 25th percentile line, five of whom were above the 10th percentile line.

Chart 8: Key Stage 1 to Key Stage 2 contextual value added analysis by pupil 2008 (mathematics)

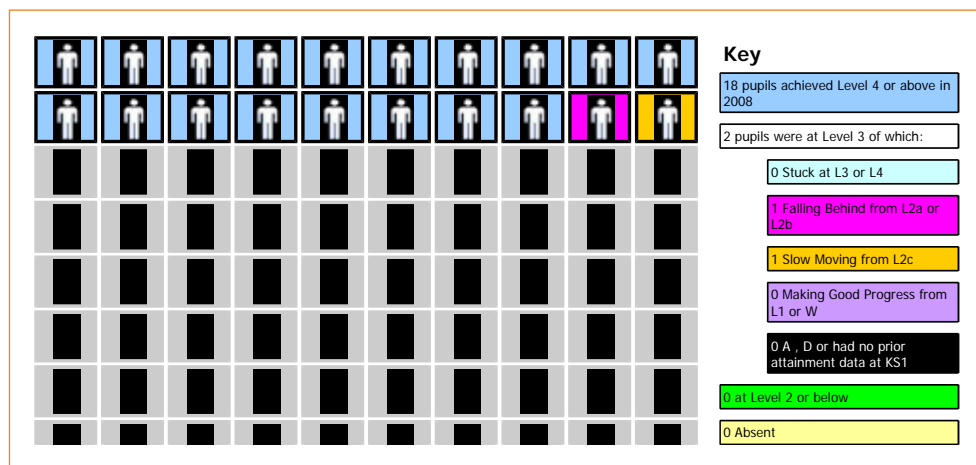


2008 primary mathematics (Key Stage 2) contextual value added line, showing spread of pupils by free school meal eligibility – the analysis is based upon comparing the predicted outcome with the actual outcome of each pupil.

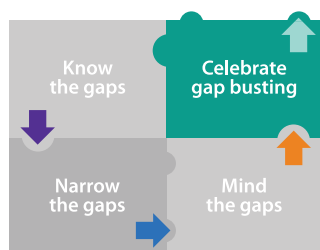
Chart 8 shows that eight of our 12 FSM pupils were above the 25th percentile line, three of whom were above the 10th percentile line. Only one of the FSM pupils was below the zero line.

The Key Stage 2 pupil progress chart (Chart 9) shows that in 2008 all but two of the 20 girls progressed to level 4 or above.

Chart 9



These were considerable improvements on our 2007 results. We feel that the focus we gave to girls in general, and FSM pupils in particular, has had a positive impact on the achievement of the whole cohort and lifted our results overall.



Celebrate gap busting

Our 2008 results have given us much to celebrate and have inspired in us the confidence and motivation to continue to tackle and overcome attainment gaps in our school.

What made the difference?

An analysis carried out by the Year 6 teacher and deputy headteacher indicated that, short-term, the key features of our success were as follows.

- The deeper analysis of the previous year's outcomes helped to identify patterns in attainment that needed to be addressed – attainment in mathematics in general and the gaps in attainment between boys and girls and between FSM and non-FSM pupils.
- Focusing on strengthening the quality of teaching of mathematics, on setting curriculum targets and on establishing routine tracking of pupils' progress were the most significant factors in this year's improvements.
- The sharper focus on target setting and tracking increased awareness of individual pupils' progress, or the lack of it, and helped to focus time and resources to particular pupils, mainly those entitled to FSM, who were at risk of underperforming.
- The role of the mathematics specialist was important in helping to clarify lines of progression in mathematics and to identify some underlying misconceptions, particularly in the case of three Year 6 pupils for whom we provided one-to-one tuition. The attention given to the specific aspects of mathematics that were preventing progress made a significant difference to these pupils' outcomes (they all attained level 4) and to their self-esteem and self-motivation.

Longer-term, staff felt that the focus on tracking and strengthening the quality of teaching mathematics across the school and a much clearer view of appropriate intervention will have the greatest influence on the outcomes of future cohorts. The tracking system has become a part of established practice in the school and this is leading to earlier identification of pupils whose progress is stalling or is too slow, better-informed target setting and an improved understanding of what interventions make a difference.

My next step, as a headteacher, is to use what we have learned in the last year and establish our approach to intervention planning. This takes in our policy on use of time, use of staff, what interventions will be used in particular circumstances and what professional support will be available for teachers and teaching assistants. This will enable us to make decisions that are better informed, more efficiently target the resources we have available and establish more consistent approaches to narrowing attainment gaps.

Resources and publications

Publications referenced for this guidance include:

- DCSF, 2009, *Breaking the link between disadvantage and low attainment – Everyone’s business* (Ref: DCSF-00357-2009)
- DCSF, 2009, *Deprivation and Education: The evidence on pupils in England, Foundation Stage to Key Stage 4* (Ref: DCSF-RTP-09-01)
- National Strategies, 2007, *Social class and achievement: case studies* (Ref: 00164-2009PDF-EN-03)
- National Strategies/DCSF, 2009, *Narrowing the Gaps: A priority for national, local and school action*
- NCSL, November 2008, *Successful leadership for promoting the achievement of white working class pupils: Vignettes – Report*
- NCSL, November 2008, *Successful leadership for promoting the achievement of white working class pupils: Vignettes – Twelve accounts of school life*

A range of guidance and resources to support schools in raising achievement and tackling attainment gaps is currently available on the National Strategies website (www.standards.dcsf.gov.uk/nationalstrategies). For guidance relating to specific under-performing groups, please see:

- ethnicity, social class and gender www.standards.dcsf.gov.uk/nationalstrategies, select ‘Inclusion’ and then ‘Ethnicity, social class and gender achievement’;
- gifted and talented pupils www.standards.dcsf.gov.uk/nationalstrategies, select ‘Inclusion’ and then ‘Gifted and talented’;
- pupils with special educational needs www.standards.dcsf.gov.uk/nationalstrategies, select ‘Inclusion’ and then ‘Special educational needs’.

Further, extended guidance will be provided in a dedicated Narrowing the Gaps area on the National Strategies website www.standards.dcsf.gov.uk/nationalstrategies. Select ‘Leadership’ and then ‘Narrowing the Gaps’.

Acknowledgements:

Extract from *Give parents the keys to a better school* article, published 21 July 2009, by Alan Milburn, The Times Online © Times Newspapers Ltd 2009. Used with kind permission.

Audience: Senior leaders in secondary, primary schools and early years settings

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