

Powerful things that schools can now do with their data

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The use of ICT for performance data is fast becoming an issue as important for ICT professionals as its use in the curriculum. There is a wide gap at present between the 'Data-Confident' schools that use performance data systemically and know themselves well, and schools that use data in a more basic, functional way. The changes in the way that 'school standards' are being viewed require schools to demonstrate that 'Every Child Matters' rather than just those who gain 5 A-C grades. New data analysis tools are simple enough to support action research by all teachers into their pupils' performance. Schools could demonstrate the consistency of provision by publishing measures of 'Within School Variation'.*

There is a wide gap in the extent to which schools use performance data

Some five years ago a colleague and I started a project to help schools make better use of performance data. What we have learnt from this work convinces us that the use of data is underdeveloped in schools compared with other professional walks of life. At the same time we have seen many individual examples of good practice in the use of data. There is a wide gap between schools making very effective use of data for self evaluation, and those for whom data use is still at a fairly basic level of development. Schools in the former category are generally those who know themselves well, and for whom an Ofsted inspection report would hold no surprises. For schools in the latter category, school improvement activities may not always be effectively targeted, and achievement patterns for some groups of learners may not be fully explored. One of the toolkits that we are using in our work with schools can be seen at www.4matrix.org/toolkit. This presents a checklist of the best practice that we have seen in relation to the roles of middle and senior leaders, and the school as a whole. A four-point development scale is presented, from *functional*, where the use of data is currently fairly rudimentary, through to *systemic*, where the use of data is more embedded and making a bigger difference. One effect of this toolkit is to point out to schools the potential for catching up with those schools that are making a high impact use of their performance data for tracking, for diagnostics, and for action-research.

A broader view of 'standards' is emerging

The key measure of a school's outputs has for many years been the percentage of 5 A*-Cs achieved by pupils. This indicator has traditionally been used to indicate the percentage of students who would be suitably qualified for entry into a school sixth form, and hence into higher education. But we are now in an age when 14-19 professional diplomas are emerging to provide lines of learning better geared to the requirements of the world of work. It has become important to know how pupils achieve across a broader profile of courses and learning outcomes. If 'Every Child Matters', we need to look at what all pupils are achieving. The inclusion in RAISEonline of Contextual Value Added (CVA) data has been a significant step forward in looking more holistically at the outputs of schools. CVA uses the technique of 'multi-level regression analysis' to discount a range of variables so that comparisons between schools can be made on a fairer basis. CVA is a good indicator to use to judge how well a school is providing for all of its pupils, but as Ofsted point out, an inspection will aim to collect a broad range of additional information to add to the data provided through RAISEonline. Some schools will have an advantage in this area because, within the briefness of current inspections, they will be able to provide additional measures arising from their own analyses of their performance.

Investigating 'Within School Variation' is a good focus for school improvement

'Consistency of provision' as a school performance indicator was given a boost a few years ago through a project by the National College for School Leadership (NCSL) into 'Within School Variation' (WSV). Measures of Within School Variation can show the degree of consistency between teaching and learning across every subject and every group of learners. If a pupil, Jack, gets an 'F' grade in one subject but 'C' grades in all his other subjects, how would we explain this? Exploring Within School Variation will tell us whether Jack, or his teacher, should have tried harder. The DCSF estimates that eliminating negative variation could raise standards (i.e. % A*-C grades) by 10%. The NCSL work has demonstrated that Within School Variation is a very suitable focus for school improvement, and this important work deserves to be followed up within any new Standards initiative.

A school with low variation could be a better school than one with a high league table position

Were it not for the broader data set provided by RAISEonline, standards would equate to 'Some Children Matter' – i.e. those who achieve 5A*-C's. School leadership, and how it is judged, is closely bound up with this subtlety, for even today there will be headteachers who may interpret school improvement solely in terms of increasing the number of pupils achieving 5A*-C grades, i.e. the school's league table position. In some schools this could be at the expense of pupils at the two ends of the attainment range, who may find less attention given to them. In the worst cases some schools will put their pupils onto unsuitable, but 'easier'

courses in order to achieve this outcome. So, in reality, which would be the better school? One which has a high league table position but has uneven provision, or a school that is more concerned that every pupil will get the best that the school can provide? And, as a parent, would you prefer your child to go to a school with a high league table position - but with a chance that they might experience uneven teaching - or a school that can demonstrate that it does the best for all pupils?

High-achieving schools will be those that are also Data Confident

We have suggested the term 'Data Confidence' to describe what is developed during the movement from *functional* to *systemic* use of performance data. An easy caricature of the School of the Past is the deputy head spending two or more days in late August with a spreadsheet to produce grade lists to give out to subject leaders on the first day of term. For this school, data analysis is something done by the few and passed down to the many. Meanwhile, over in the Data Confident school, all teachers will have access to the school's data, and furthermore will have the tools needed to undertake research into the comparative achievement of selected groups of pupils. In these schools, subject leaders will take a lead with the other teachers of their subject to analyse performance. They will make significant use of data for tracking performance, diagnosing improvements and analysing results. They will understand the issues connected with interpreting data sensibly. They will review with their colleagues their work as a subject area and its impact, using a range of data about the performance of individuals and groups. They will ensure that professional support is targeted with the purpose of increasing pupil achievement and reducing negative variation. They will link their priorities for development to issues revealed by their interpretation of their data, and they will not leave performance problems unnoticed behind summative grade lists. They will focus their subject plans on tackling underachievement, whilst sharing the reasons why some pupils really blossom in particular circumstances.

Headteachers in Data Confident Schools have a different priority

Meanwhile, the headteacher of the Data Confident School will downplay the school's league table position in favour of showing what the school does for all learners. They will make the ironing out of inequalities in provision their top priority, and will be able to demonstrate that Every Child Matters by being able to prove that provision is good for every learner. They will push the evidence base downwards for teachers and subject leaders to research, analyse and report on, and they will promote and support action-research approaches to school improvement. Because of these priorities, they will be able to present inspectors with an independent, school-owned analysis of the school's performance.

Data Confident schools are more in control of their own standards

Official data uses CVA adjustments based on aggregate national trends in the performance of particular groups. But this has little meaning at class level, because a good teacher will aim to do the best for every pupil - and not expect some individual pupils to do less well because of their ethnicity or gender etc.

By contrast, teachers will know the often complex and subtle history of each pupil's learning that will provide a local contextual explanation of their performance at any particular point in time. Good provision will be adaptable, responding to what schools know about the teaching and learning dynamic. School self-evaluation offers teachers an opportunity to evaluate pupils' performance with school-contextual data, and hence will provide measures to support the school's own view of its performance. Importantly, self-evaluation places ownership and control of standards much more firmly in the hands of schools themselves. This last point cannot be overemphasised. Data Confident Schools don't wait in fear for Ofsted to come and judge them. They will have secure, school-level evidence of their own effectiveness and will be taking a lead in promoting their own high standards. They will know their school better than Ofsted can. For them, an inspection would be an endorsement. For the less data-confident schools, 'standards' will be someone else's agenda.



Simple, yet powerful, tools can now examine provision and forecast achievement

In our work with over 130 secondary schools, we have used feedback from teachers to guide the development of simple-to-use tools that allow a school to analyse Within School Variation, and to research the performance of selected groups of pupil at individual, group, subject and school level. Importantly, these tools extract and use the data already present in a school's MIS rather than expect teachers to type in data. As well as analysing the most recent terminal examination results, additional tools can be used to forecast patterns of Within School Variation from year 10 mock examination results or Year 9 scores. Rather than 'contextualising' value-added information about subject and pupil performance, teachers can make their own interpretations from unadjusted data. These tools allow 'group achievement commonalities' to be investigated, and provide a good basis for teacher-level action research and for tracking change.

We have also assembled an Action Research Toolkit which prompts for many of the 'candidate factors' that can be investigated in seeking to improve the link between effective teaching and effective learning. These suggest the exploration of achievement across groups and subjects in relation to whole school factors like gender and ethnic groups; subject arrangements like choice, level and entry; pupil contextual factors like high or low verbal reasoning scores, the effect of teaching 'Learning to Learn' skills, group size etc.; teaching arrangements and teaching styles – for example, teachers who ask pupils how they would like the lesson organised, teachers who make good use of ICT etc. ; and the impact of school initiatives like homework clubs, or extra-curricular activities.

How will schools prove that, for them, 'Every Child Matters'

We have worked with schools in many different contexts in their development of the use of performance data. Several schools to date have made use of a range of data tools in their journey out of special measures. But having a range of data tools is just the starting point. Establishing a cycle of school improvement, well informed by the effective use of data, is the other part of the equation. Good schools will be those that can show that they know themselves well, are targeting negative variation, and can show evidence of improvement over time.

At the Naace 'Making Information Work' conference last year we posed the question "Should every school be expected to prove that for them 'Every Child Matters' - rather than just those pupils who will get 5 A*-C grades?" If the answer is 'yes', then there is much to be done to ensure that all schools are helped on the journey towards becoming Data Confident.

More details about this work can be seen at www.4matrix.org. Comments from school senior leaders about this approach to school improvement can be viewed at www.4matrix.org/comments