

Perspectives on Education: Effects from accountabilities



Perspectives on Education is a series of reports presenting well-argued and evidenced views from across the education sector, with the aim of promoting informed debate.

How do accountability systems affect the quality of science education?

Professor Sir John Holman

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Not everything that can be counted counts, and not everything that counts can be counted.

Albert Einstein

The Wellcome Trust is committed to improving the quality of science education in the UK. We established, and continue to fund, the National Science Learning Centre¹ to help teachers to inspire a new generation of young scientists, and we are interested in policy making that ensures a high-quality science education is available to all young people, not just the fortunate few. We realise that a good education in science – or indeed in any discipline – is impossible without good governance and accountability, and this has prompted us to look more deeply at the accountability systems within which schools in England operate.

As Andreas Schleicher's article on lessons from around the world shows, there is a global trend towards increasing the use of data to hold public services to account. This 'new public management' movement is not confined to England, nor to education: it is a global trend that affects policing, health, research and universities as well as schools.

England is not alone in having schools which operate in an environment where the accountability stakes are high, but the weight of accountability seems to bear particularly heavily here, and has noticeable consequences for the quality

of science education. Two elements bear down hard on English schools: external testing and Ofsted inspections.

Giving the headteacher's perspective, Joan Sjøvoll's article demonstrates how strongly the behaviour of both primary and secondary schools is shaped by test performance, which determines their ranking among other local schools, and thus their popularity, pupil numbers and income – and in some circumstances the headteacher's job prospects and ultimate closure. While this undoubtedly focuses the mind, it can cause collateral damage to science teaching, as schools adopt a formulaic approach in which teaching and learning are cramped around a narrow focus: teaching to the test and 'safe' teaching. The casualties can be stimulating, exploratory practical work and teaching that opens eyes to the wonder of science, its excitement and its value for future study and careers. Primary schools are not immune to these pressures: the removal of external tests in science in 2010 may have led to less test preparation, but it has downgraded the importance of science in many schools as headteachers concentrate on the externally tested mathematics and English².

Mike Tomlinson's analysis of the impact of Ofsted inspections acknowledges that inspection has raised overall standards over time, but shows that the dominant input to inspection judgements is raw data

– thus reinforcing the grip that test performance has on schools and their behaviour.

So what might be done to limit the perverse consequences of testing and inspection? Andreas Schleicher shows that balance and coherence are needed among the various elements of evaluation, assessment and accountability. In systems where schools are held strongly to account, the schools with the greatest degree of autonomy do best. With the Department for Education emphasising greater school autonomy, particularly through the academies programme, it is clear that strong accountability systems will and probably should be with us for a while yet. But does accountability need to rely so heavily on test results, important though these are – especially when the test results used in league tables typically capture just one year's performance and even that is of the previous year?

No parent wants their child to come out of school without decent qualifications, but test results should be the beginning, not the end of the story. As Chris Williamson and Jo Field's article on school governance shows, governing bodies can play a critical role in ensuring the school provides a rich all-round experience as well as acceptable test results. If all governing bodies were strong and well-led, the accountability system would not need to be so 'high-stakes'. Once the basics of

test performance are established, there should be a much greater emphasis on the role of each governing body in holding the headteacher to account for providing a broad and rich student experience, including inspired teaching, excellent careers guidance, a range of extracurricular activities and a secure environment to foster pupils' self-confidence.

Even with more robust governing bodies, the external accountability system will continue to bite hard, so it's important to get it right. The articles here suggest that a system less reliant on a narrow set of examination performance measures should be explored. We offer the following reflections:

1. Headteachers will always be strongly influenced by performance indicators, but there should be a more nuanced range of indicators on the dashboard. Governors and parents, too, need direct access to a wider range of information so they can monitor performance and discriminate between schools. As Einstein said, "Not everything that can be counted counts, and not everything that counts can be counted." We need a broader range of indicators to assess qualities such as inspired teaching, pupils' self-confidence and employability, and the professional development of staff. Some measures may not be as robust or objective as others, but

they should be able to guide school leadership and highlight year-on-year change or differences between groups of pupils. As this publication goes to press, the Department for Education has made new proposals for performance measures that will widen the range of subjects on which schools will be measured – but these keep the strong focus on using test results to measure performance.

2. Governing bodies need to be more assertive in working with the senior leaders to set the strategic direction for the school and then holding them to account for its delivery. We are seeking to encourage this approach with our 'Recommended Code of Governance for Schools', now being piloted³.
3. Should Ofsted rely less on performance data and more on overall observation of what they find, as Mike Tomlinson suggests? Excellent science education needs practical work that stimulates and intrigues, teaching that inspires towards further study, and opportunities to show how the facts and theories of science explain the world around. These things are harder to measure than test results, but inspectors quickly recognise them when they see them. The performance of different groups of students should be monitored to ensure that they have equal opportunities in science.

In her article, Joan Sjøvoll declares that "the vision for the student experience includes high expectations for examination success, but it should also acknowledge the ways in which education enriches learning and develops students' independence, spirit of enquiry and practical skills". Sadly, Joan died shortly after completing her article, but she, and the other authors in this review, have pointed the way towards an accountability system that could deliver this vision for all pupils.

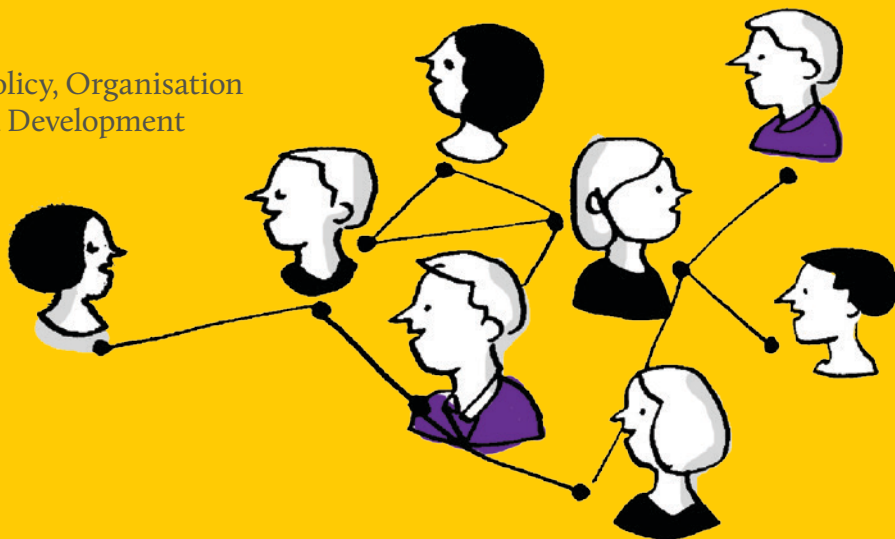
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Some lessons from around the world on evaluation and accountability

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The shift in many policy makers' thinking away from mere control over the resources and content of education towards a focus on outcomes has, in many countries, resulted in schools becoming more autonomous. This, in turn, influences approaches to evaluation and accountability so that knowledge about what works in education is shared between teachers, schools and administrations.

One of the most striking findings from the first PISA assessment in 2000 was that, in Finland, the highest performing education system, less than 5 per cent of the performance variation in the student population lay between schools: every school displayed similarly strong results. Such consistent strength is a powerful indicator of a functioning culture of continuous diagnosis, assessment and intervention. Results like these have motivated PISA to look in greater depth at how issues around assessment, work organisation, accountability and governance interact in providing a framework in which schools are given the incentives and the capacity to improve. The latest PISA assessment in 2009 came up with interesting findings in this respect:

- In countries where schools have greater autonomy over what is taught and how students are assessed, students tend to perform better. However, autonomy and accountability interact in important ways: in countries where schools

are held to account for their results, schools that enjoy greater autonomy in resource allocation tend to do better than those with less autonomy. In contrast, in countries where there are no such accountability arrangements, the reverse is true. This suggests that it is combinations of accountability and autonomy conditions, rather than each in isolation, that relate to outcomes.

- In countries that use standards-based external examinations, students tend to do better overall, but there is no clear relationship between performance and the use of standardised tests. This being said, performance differences between schools with students of different social backgrounds are, on average, lower in countries where more schools use standardised tests.
- Within many countries, schools that compete more for students tend to perform better, but this is often accounted for by the socioeconomic status of students, as parents with a higher socioeconomic status are more likely to consider academic performance when choosing schools. Some accountability systems publish data on student and school performance to inform the public and the system managers. In systems that permit parents and students to choose schools, such data can also influence those choices, providing an accountability instrument.

Such data point to important interrelationships between approaches to evaluation and system performance, but they do not identify the underlying causation and, by implication, they provide insufficient guidance for policy makers and practitioners to design and implement effective evaluation and accountability policies and practices. To address this gap and to provide clues on how to embed evaluation tools within a coherent framework to bring about real gains in performance across the school system, the OECD Review on Evaluation and Assessment Frameworks for Improving School Outcomes¹ has been looking at related policies and practices more systematically. Some of the key lessons that have emerged from the Review are presented below.

Ten key findings

1. Design a coherent framework for evaluation and accountability with the student at the centre

Most would accept the importance of authentic evaluation, leading to the improvement of educational practices. What is often underestimated is the importance of coherence among evaluation initiatives in order to realise their full potential for improvement. Coherence is needed between student assessment, teacher appraisal, school evaluation, school leader appraisal and education system evaluation. This, in turn, can help to provide a shared vision for evaluation and communicate how

each component can produce results that are useful for classroom practice and school improvement.

2. Include a balance of components such as measures of student outcomes, system-level indicators with basic demographic, administrative and contextual information, and research and analysis to inform planning, intervention and policy development

The challenge here is to ensure that policy and practice are informed by high-quality measures but not driven by their availability. It is never feasible, nor desirable, to develop indicators across all the objectives of the education system. A systematic review of the availability and quality of key indicators and performance measures is therefore important. This kind of mapping has proved to be a critical exercise in reminding all stakeholders of the full spectrum of national priorities and goals and ensuring transparency in the use and interpretation of measures.

3. Promote national consistency while giving room for local diversity

Frameworks for evaluation and accountability will need to find the right balance between national coherence and local diversity. It is important to agree general operating principles for procedures such as school evaluation, teacher appraisal, student formative assessment and the evaluation of school leadership, while allowing flexibility of approach within agreed parameters to better meet local

needs. The principles should come with clear goals and a range of tools and guidelines for implementation. They should permit better consistency of evaluation practices across schools while leaving room for local adaptation. In decentralised systems, it is also important to encourage different actors to cooperate, share and spread good practice and thereby facilitate system learning and improvement.

4. Integrate the non-public sector

There are a range of possible ways to better integrate the non-public sector in the overall framework for evaluation and accountability. Some countries require the non-public sector to comply with the approaches followed within the framework, especially for those sectors or schools that receive public subsidies. Another possibility is for the non-public sector to be part of protocol agreements which specify general principles for the operation of procedures such as school evaluation, teacher appraisal or the evaluation of school leadership while allowing flexibility of approach within the agreed parameters.

5. Achieve a balanced framework for evaluation and accountability

Greater emphasis is frequently needed on managing the relationship between student formative assessment and criterion-based summative assessment by teachers. Teacher appraisal needs to be systematic, ensuring that all teachers are appraised and receive feedback, professional development

opportunities, and prospects of career advancement. Greater incentives may be needed for schools to engage in self-evaluation so that it is systematic, with all school agents involved, and is followed up in a way which leads to school improvement. This is to be complemented with requirements for external school evaluation, supported by dedicated structures that have the capacity to enhance school development. Another area which could benefit from greater policy attention, underdeveloped in many countries, is the appraisal of school leadership.

6. Establish articulations between components of the framework

An effective framework for evaluation and accountability needs proper articulation between evaluation components (e.g. school evaluation and teacher appraisal), sufficient linkage between the several elements within an evaluation component (e.g. teaching standards and teacher appraisal; external school evaluation and school self-evaluation), and processes to guarantee the consistent application of evaluation procedures (e.g. consistency of teachers' marks). To be effective, school evaluation should comprise the monitoring of the quality of teaching and learning, possibly including the external validation of school-based processes for teacher appraisal (holding the school leader accountable as necessary), and school development processes should explore links to the evaluation of teaching practice.



In countries where schools are held to account for their results, schools that enjoy greater autonomy in resource allocation tend to do better than those with less autonomy.”

7. Give a role to independent evaluation agencies

The effectiveness of evaluation and assessment hinges on agencies that are authoritative voices in their areas, highly credible for their expertise and technical capacity, and good at providing advice on the implementation of evaluation and assessment. Those agencies need to provide technical leadership (e.g. in developing evaluation instruments and guidelines) and effective approaches to monitoring the education system and the teaching and school leadership professions; they need to facilitate innovation in schools on the basis of research results and the development of capacity for evaluation and assessment across the system; and they need to offer technical support for school agents to implement evaluation and assessment procedures at the local level.

8. Prioritise and sustain efforts to improve capacity for evaluation

The development of an effective framework for evaluation and accountability involves considerable investment in competencies and skills for evaluation at all levels. This includes providing support for school agents to understand evaluation procedures, training for evaluators to fulfil their responsibilities, and preparation for school agents to use the results of evaluation. Capacity building through adequate provision of initial teacher education and professional development should be a priority.

9. Emphasise the improvement function of evaluation and assessment and links to the classroom

There needs to be an articulation of ways for the national education agenda to generate improvements in classroom practice through assessment and evaluation procedures which are closer to the place of learning. That requires reflection about the nature and purpose of evaluation components such as school evaluation, teacher appraisal and student formative assessment within the overall education reform strategy and the best approaches for these to improve classroom practices.

10. Clearly communicate the purpose and results of evaluation

Last, but not least, evaluation can only be as good as its communication strategies. It is essential to clearly communicate a long-term vision of what is to be accomplished for student learning as the rationale for evaluation and accountability policies. Individuals and groups are more likely to accept changes that are not necessarily in their own best interests if they understand the reasons for these changes and can see the role they should play within the broad national strategy. Such communication and dissemination is critical to gain the support of society at large for educational evaluation reforms, not just the stakeholders with a direct interest.

Conclusions

The OECD's review has not revealed a single model or global best practice. The different social, economic and educational structures and traditions in different countries impact on the relevance and feasibility of introducing evaluation and assessment policies. Nevertheless, the review has found important trends that are common to many countries. Notably: increased prominence of assessment, evaluation and accountability in educational policy; larger and more varied uses of evaluation and assessment results; the rise of educational measurement and the development of indicators; greater reliance on educational standards as a reference for evaluation; and a growing emphasis on accountability as a purpose for evaluation and assessment. Key challenges typically include: ensuring articulations within the framework for evaluation and accountability; building capacity for evaluation and for using feedback; ensuring links to the classroom; balancing the improvement and accountability functions; and aligning evaluation and accountability with the goals for student learning. It is important that accountability measures do not have unintended negative consequences for learning quality.

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A secondary headteacher's perspective

Measuring up

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*With contributions from Martin R Post,
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NOW, what I want is, Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life. Plant nothing else, and root out everything else.
Charles Dickens, *Hard Times*

Schools want and have a great deal of autonomy and responsibility. With that comes accountability for the performance of their students against externally determined benchmarks.

When Mr Gradgrind listened to the students' chanting in his Coketown school, he heard what he wanted and expected to hear; he heard what the 19th century regarded as good education: he heard Facts. The school was doing well. The Facts become an end in themselves, not a proxy for what was to be achieved. So, the accountability measures distorted what was taught. This article contends that the concentration on a similarly limited range of accountability measures skews what is taught because of the grave consequences for schools (and for the employment of headteachers) of falling short on these specific 'measures of choice'. It also contends that this is detrimental in particular to science education.

The current accountability systems provide a plethora of data on schools' performance, including numbers of students, grades achieved, progress made and value added. That's important information and can

identify areas for improvement. This is, however, retrospective data, on cohorts which have taken examinations or assessments. To this can be added the current data on the students presently being educated. Taken as a whole, any one piece of information can lead a school to see and to address an issue that when resolved will improve student performance. However, as all headteachers know, some of this data is more important as it is used to check that the school is doing well.

Assessment will always tend to shape the curriculum. Sophisticated assessment will breed sophisticated teaching and necessitate more sophisticated accountability than we currently have. Sophisticated assessment would recognise that the most important elements of science education are much harder to measure. A good science education ideally brings together the formal and informal curricula to foster students' curiosity, independence and innovation through exploratory learning. It helps students develop practical laboratory and research skills, along with the ability to contextualise and interpret data in real-world situations. It engages them with the wonder of science, inspiring them to consider it as an option for further study or a career. If we focus solely on the Facts of grades achieved and student numbers to reach government targets, we can forget to enrich and deepen their education. We must not fail to provide the curriculum

entitlement which fits what we believe to be important in science education for today and tomorrow.

At best, current systems of accountability based on benchmarking a narrow range of indicators have little impact on improving science education. Accountability systems that are sophisticated enough to measure the components of a good science training will drive curriculum development.

What are the current accountabilities?

Schools and their leaders are held to account by an array of different measures.

Statistics of choice: These are a set of performance measures for schools published annually by the Department for Education (DfE) in a Statement of Intent. The 2011 statistics for secondary schools set out 30 or so indicators of school performance for students at age 16 (the end of Key Stage 4), each with several sub-categories. These are monitored by the DfE.

League tables: These tend to select a narrow range of data from the statistics of choice. They say very little about the quality of education in general – and science education in particular – at a school but often receive unwarranted attention in local media. They are also monitored by the DfE.

Ofsted inspections of schools: These are based on a range of evidence available to inspectors and are evaluated against a national framework. Inspections are high-stakes events for heads and schools. Ofsted tells us what is valued and schools adapt accordingly.

Teacher assessment for science: This takes place at the end of the primary stage, but the baseline statistic for measures of secondary school progress is calculated from English and mathematics tests only. The same two subjects are emphasised at Key Stages 3 and 4: about a third of the DfE's key indicators for secondary schools measure performance in English and maths. For most schools the number of grade C passes is more important than the number of A* grades awarded. Science had a higher profile until 2010, but has since taken a back seat. Only two indicators specify performance in science. Nor is science given any particular emphasis in Ofsted reports. Science education is inspected as part of the whole judgement on standards and quality of teaching, and subject-specific survey inspections are limited in number.

Teaching to the test

The pressure on schools is immense. Schools are in direct competition with each other for students. Their funding depends on student numbers – and student numbers depend on demographics and on measures of a school's 'success' as determined by the annual DfE statistics. Those statistics are based on exam results that do not necessarily reflect whether schools have provided a rich and deep curriculum and stimulating teaching.

The government is inviting all schools in England to become academies and encouraging parents to set up their own free schools. At the same time, it is raising minimum school performance targets inexorably year by year. As a result, those schools deemed successful at meeting these limited and limiting targets will expand, but other schools will find their student rolls and consequently their funding falling. With their backs against the wall, these schools, even more than others in less pressured situations, are understandably likely to focus on the rising targets, particularly in English and maths, at the expense of other subjects and broader aspects of learning.

Elsewhere in Europe, technical education has been more highly valued than in the UK, where we see a dearth of practically qualified young technicians. We have started to take a more positive view of technical qualifications, but the new EBacc, essentially academic

in nature, may push students whose strengths aren't academic away from practical qualifications like a BTEC or NVQ. It may also push students who have both academic and practical abilities – people we need in engineering and STEM industries – towards an academic university degree, when they may be better off going straight into an apprenticeship and qualifying on the job.

There is understandable concern that the current accountability regime has driven UK schools to a formulaic approach in which teaching and learning have been cramped around a narrow focus: teaching to the test. For science education this comes at the expense of developing the practical skills, independence and creativity that science education should foster. We are not measuring those key aspects of a good science education.

How can accountability improve science education?

Setting the vision for the student experience includes high expectations for examination success, but it should also acknowledge the ways in which education enriches learning and develops students' independence, spirit of enquiry and practical skills. Science education should include science clubs, collaborative working with industry and scientific institutions, and high-quality careers information and guidance to help students make decisions about their futures and select the right course



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at the right university, or the right apprenticeship, when they leave school. Why not measure the success of a school by the success of its students on these courses? Holding on to this hard-to-measure vision in the context of other main accountabilities of statistics, league tables and Ofsted judgements demands brave leadership and a commitment to good science education that a leader may not be permitted to exercise because of the need to ensure the survival of their school.

A range of valuable skills could be developed in a freer curriculum that is evaluated through sophisticated assessment of the range of skills and knowledge acquired. Shortly before Dickens's death, the first in a series of Elementary Education Acts was passed, providing a common education for every child, regardless of background. Today we have the opportunity to identify what is right as a curriculum entitlement for today and tomorrow, ensuring that we have an accountability system that encourages development and not just measurement.

This article was drafted by Joan Sjøvoll, who sadly died before its publication; the final revisions were made by Martin Post. Joan Sjøvoll made outstanding contributions to science education, not only as Headteacher of Framwellgate School in Durham, a science specialist school and home of the Science Learning Centre North East, but also as an adviser to government, the Royal Society and the Wellcome Trust. She was a visionary with her feet firmly on the ground, and she is a great loss to science education.

A school inspector's perspective

Inspection: friend or foe?

Sir Mike Tomlinson
Former Chief Inspector of Schools



Before 1992, the inspection of schools in England and Wales was not frequent, nor was every school inspected. Since 1992, however, all schools have had to be inspected within fixed periods and inspection has become a central component of the accountability system applied to schools in England and Wales.

This change coincided with schools being given increased levels of autonomy (a process which continues to this day) and a government belief that this development required the regular inspection of schools as one means of holding them to account for their performance. Whether or not inspection has contributed to the improvement in education continues to be vigorously debated. Here, however, the question is whether inspection has improved science education or whether the impact has been negative.

The inspection of schools in England is not new. The first two members of Her Majesty's Inspectorate (HMI) were appointed on 9 December 1839 as part of the Privy Council for Education, the forerunner of today's Department for Education (DfE). HMI's task was to inspect schools and report upon the use of public money being provided to set up and run schools by the Church and voluntary bodies.

Since 1839 the number of HMI inspectors has expanded along with their remit, but until 1992 they remained members of the DfE. Their inspection evidence through the

late 1970s and early 1980s played a significant part in shaping policy. This has particularly been so in relation to the place and content of science education in schools. Reports based on the large-scale inspections of curriculum provision in primary and secondary schools, published in 1978¹ and 1979² respectively, formed the basis of the first subject policy statement in 1985³. This, and subsequent HMI publications (the Annual Reports of Her Majesty's Chief Inspector), underpinned the introduction in 1988 of the National Curriculum, with science as one of the three core subjects to be studied by all pupils aged 5 to 16. No longer was the science taught in primary schools to exclude the physical sciences, nor would it be possible for any student at secondary level to cease to study the three sciences before the age of 16.

Thus, inspection evidence and the inspectorate's input into policy were significant factors in heralding a sea-change in science education in both primary and secondary schools.

All changed in 1992 with the creation of the Office for Standards in Education (Ofsted), separate from the DfE, charged with organising the inspection of all schools on a regular basis. The inspections were to be carried out by commercial entities (not HMI) awarded contracts by Ofsted. The reports were to be published and, when it became feasible, made available on the internet. Allied with the emerging performance

data from National Curriculum tests at 7, 11 and 14 and GCSE results at 16, schools were being made publicly accountable in ways not seen previously. No one in education opposed the principles of accountability and inspection, but there was understandable concern about a number of features of this new inspection system.

There were two main sets of concerns: with the consistency of inspectors' judgements and their subject expertise, particularly in secondary school inspections; and with the use of raw test and examination data to judge a school's performance, particularly when only one year's results were available and the results were not contextualised. These latter concerns have, over time, been largely overcome as the increasing volume of data has enabled each school to be placed in a 'family' with relatively similar characteristics such as type, size, proportion of students with special needs and those claiming free school meals. In other words, it is now possible to compare like with like. However, judgements based on one year's results rather than on the trend over three or five years continue to be made, particularly by politicians.

The concerns about inspectors' judgements remained and were heightened by the introduction in 2002 of short inspections. These meant that inspectors spent less time in schools and some science lessons were judged

by non-specialist inspectors. This has resulted in a serious reduction in the quality and quantity of information about teaching in individual subjects. With the reduced inspection time and the ever-expanding dataset, the latter has become the dominant input into judgements about school performance. This is a real worry as test, examination and general school data rarely provide answers to questions, being more useful in identifying the right questions to be pursued during the inspection itself.

Since 1992, schools in England have enjoyed greater autonomy in respect of funding, employment of staff and minor capital works, and more recently academies have become independent of local authorities and have freedom to modify the National Curriculum and the terms and conditions of employment of teachers. Such an autonomous school system does require a robust accountability system, including inspection. However, the balance between the school exercising its autonomy and the weight of accountability is crucial. I do not believe the present balance is optimal. As a result, there is ever-increasing pressure on schools to improve test and examination results. The consequences have been more teaching to the test and more 'safe' teaching, thus curtailing innovation and the development of students' love of subjects. In science there has been a reduction in the amount of practical work, with much less being truly investigative.

That said, inspection has shone a light on the quality of teaching. HMCI Annual Reports for 1995/96, 1999/2000 and 2003/04 reveal the following changes in the proportions of science lessons judged less than satisfactory or poor in primary (Key Stage 2) and secondary (Key Stage 4) schools.

Proportion of science lessons judged less than satisfactory or poor

	Key Stage 2	Key Stage 4
1995/96	14%	15%
1999/2000	6%	11%
2003/04	4%	6%

Even allowing for the concerns with the quality of some lesson judgements, the quality of teaching has improved, and since 2003/04 the percentages have remained at the same levels. I am in no doubt that inspection has been one of the factors bringing about this improvement. Inspection also revealed that at Key Stage 3 (Years 7–9) there was too much teaching of physical sciences by teachers with limited subject knowledge. This knowledge deficit was also identified in primary schools. These inspection findings were one factor, along with the Wellcome Trust's report⁴ on professional development of science teachers and the government's policy on science in schools, which together resulted in 2005 in the

government, in partnership with the Trust, establishing the National Science Learning Centre and nine regional centres. Since then, there has been a dramatic increase in the availability of high-quality science courses for teachers. Among the schools making use of this provision, research has shown improved GCSE performance, improved retention of teachers and most importantly increased enthusiasm for science among students. Similar inspection evidence about the quality of school leadership resulted in the establishment of the National College for School Leadership in 1997, providing among other things management courses for heads of department. This all suggests that inspection has had some positive effects.

Ofsted has published many reports on good practice but there is scant evidence on the impact of these reports upon the work of schools. However, their identification of schools that do good science work has been used to link these schools with others that have less good provision. This school-to-school work has resulted in considerable school improvement, notably in London as part of London Challenge.

Changes to inspection were made in September 2012. The most significant is the focus on linking judgements of teaching quality to a school's pay and the professional development arrangements. This will be the first time that continuing professional development



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has been included in the inspection schedule. However, the changes also considerably raise the bar for what is acceptable examination performance and remove ‘satisfactory’ as an inspection judgement. These changes will result in more schools being judged in need of improvement and fewer judged ‘outstanding’, increasing yet further the pressure on schools to improve examination performance by all means possible.

So, has inspection been a friend or foe? It is my view that its impact has brought some negative effects such as teaching to the test, the over-simple use of data to judge schools and the stifling of innovation. On the positive side, the quality of science teaching, as measured by inspection judgements, has improved. If, however, we are to see a step change in the overall quality of science education then the weight of all the accountability measures needs to be reduced and test and examination requirements overhauled. Inspection should rely less on data and more on direct observation of the work of a school. Together, these changes would give teachers the space and confidence needed to innovate and develop pedagogy and thus improve further the quality of science education.

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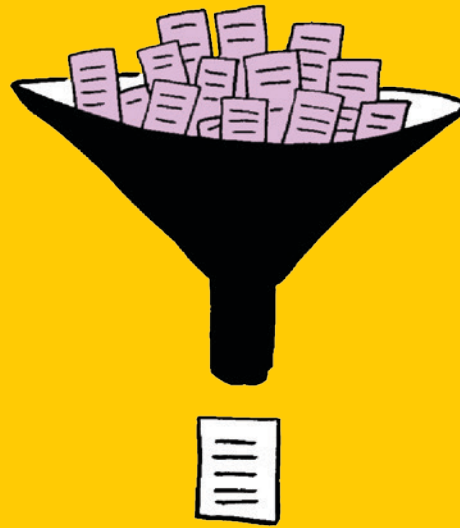
Governors: holding schools to account

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Schools in England operate within a highly constrained environment, beset by accountability measures. Ofsted inspections and examination league tables hold schools within a tight grip and limit their room for manoeuvre, sometimes resulting in outcomes that may not be in the best interests of the learners. A school that is obsessed with improving examination results may focus its attention on 'quick wins' rather than on the range of interests of all learners. More specifically, for example, focusing attention on maximising learners' marks in science practical work assessments may detract from giving them a stimulating learning experience in the school laboratory.

Would performance of schools suffer if Ofsted and league tables had a lighter touch? Perhaps not, provided governing bodies effectively do their job of holding the school management to account for the quality of all-round education provided. A good school is about much more than examination results: parents want their children to be confident, well-rounded and employable individuals, and this outcome is not guaranteed, even in a school that has excellent examination results and is outstanding by Ofsted's measures. This is where governors come in: a good governing body will make sure the school management looks at the school's performance in the round, and does not over-emphasise examination results.

It's all about the ethos

A clearly stated and well-understood school ethos is central to both success and direction within a school, and governing bodies play a critical role in establishing and maintaining such an ethos. Championing an ethos for a school can help capture the fundamental and distinctive character of the school, typically expressed in attitudes, habits, values and beliefs. Governing bodies that embrace the traditions and ethos of their school, while remaining ready to take on new ideas (especially in the present educational climate of challenge and change), will find themselves well-placed to support their school.

There is a fine line to be trod by governors between supporting and holding to account the school management (which they should do) and intervening in ways that make the work of school management harder (which they should not do)¹. Governing bodies should discharge their responsibilities by:

- developing a strategic plan in partnership with school management, and monitoring its implementation
- receiving and studying regular reports and asking challenging questions
- monitoring information about the school's all-round performance, not only examination results

- appointing, and carrying out the performance review of, the headteacher.

Putting it into practice in one school

The Howard of Effingham Secondary School is located near Leatherhead, Surrey, and has around 1580 boys and girls aged 11–18. The school has a science specialism, achieved outstanding ratings from Ofsted in 2006 and 2009, and is most definitely not just obsessed with improving examination results.

While public examination results present the most obvious measures of success, the governing body routinely (typically termly) monitors the quality of teaching and learning, pupil progress and progress against the development plan, as these are leading indicators.

Foremost among the direct effects of our governors is the appointment of the school leader, who in turn is held accountable for the appointment of outstanding teaching staff. Working closely with school leadership, governors help ensure that new staff are recruited based on simple criteria covering high standards and a passion for excellence in teaching, and that promotions result from success in these areas. It is vital for governors then to ensure that there are great opportunities for continuing



Focusing attention on maximising learners' marks in science practical work assessments may detract from giving them a stimulating learning experience in the school laboratory."

professional development (CPD) for teachers and technicians and to monitor its uptake. The ideal science teacher should have a passion for their subject and will usually have a specialist degree with postgraduate teaching qualifications, and a commitment to ongoing professional development, sharing good practice and providing opportunities for enrichment that go beyond the classroom.

School strategies are influenced by operational reality, so to ensure that governors have an accurate picture of school life, they are encouraged to visit the school on a regular basis. A model that has proved valuable at the Howard of Effingham School is linking governors to individual faculties. Such an approach allows them to understand and monitor how the curriculum is chosen and delivered, how policies are implemented and reviewed, and how the faculty is developed.

Schools need to keep governors informed, and at the Howard there is a weekly faculty bulletin which supplements regular meetings with news, best practice, resources and CPD opportunities, ensuring that all those who support science are included regardless of job title or hours of employment. With a thorough understanding of faculty life, a governor is better equipped in their strategic role and that of 'critical friend'.

We believe that much of the success at our school has stemmed from a high level of quality control: we set high standards for ourselves, whether teachers, support staff, governors, parents or students. An ethos underpins the school's mantra – 'bringing out the best' – and we see it applied equally to students and staff. Governors realise that although there is a renewed focus on academic standards, we also need to monitor the social, moral, spiritual and cultural development of the students undern our care.

The strategic direction of many governing bodies has led to learning partnerships between confederations of local primary and secondary schools, some of which have proved beneficial in raising the profile of science. For example, at the Howard, the science faculty organises frequent public lectures, well attended by the local community, on science topics, fostering a passion for science both before and after the secondary school years.

Such extracurricular activities are an important feature of a thriving science faculty and there's a good case to argue that schools should be accountable for providing such opportunities for showcasing and celebrating success. Good-quality practical work promotes the engagement and interest of students as well as their skills, science knowledge and conceptual understanding.

Governors are responsible for monitoring the recruitment of staff who are willing to undertake these activities, assisting in encouraging and promoting their successes.

The future

The current models for school improvement include formal collaboration between schools to help drive up standards. Outstanding academies and academy chains are becoming a cornerstone of the government's vision for education, where leading schools have a strong ethos and can act as centres of excellence or specialist provision. In the case of the Howard, this led to a partnership with Thomas Knyvett College in 2007, and in 2009 both schools were judged 'outstanding' by Ofsted for their partnership working.

The new Ofsted framework² makes specific reference to the effectiveness of governance and an assessment will feature in the overall grade for Leadership and Management. Governors need to step up!

References

- 1 What governing bodies should expect from school leaders and what school leaders should expect from governing bodies. NGA, ASCL and NAHT; 2012.
- 2 The framework for school inspection. Ofsted; 2012.

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