

# Using Data in Leadership for Learning

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**ABSTRACT** *School leaders are faced with the daunting task of anticipating the future and making conscious adaptations to their practices, in order to keep up and to be responsive to the environment. To succeed in a rapidly changing and increasingly complex world, it is vital that schools grow, develop, adapt and take charge of change so that they can control their own futures. This paper will examine the tension that exists for school leaders in relation to data about their schools and their students, arguing that the explicit connections between data and large-scale reforms make it impossible to avoid a critical approach to data, drawing on research in Ontario and Manitoba in Canada, and examining parallels with evidence from research in England, to highlight the challenges involved in using data effectively in different political contexts and mandated policies on the uses of data.*

## INTRODUCTION

There was a time in education when decisions were based on the best judgements of the people in authority. It was assumed that school and district leaders, as professionals in the field, had both the responsibility and the right to make decisions about students, schools and even about education more broadly. They did so using a combination of intimate and privileged knowledge of the context, political savvy, experience and logical analysis. Data played almost no part in decisions. Instead, leaders relied on their tacit knowledge to formulate and execute plans. In the past several decades, a great deal has changed. Accountability has become the watchword of education and data hold a central place in the current wave of large-scale reform. At the same time, school leaders find themselves faced with challenges that are ill structured with more than a single, right answer that demand reflective judgements (King & Kitchener, 1994); judgements that require them to have knowledge and understanding in relationship to context and evidence. School leaders are caught in the nexus of accountability and improvement, trying to make sense of the role that data can and should play in school leadership.

### **Data for Accountability**

Data has become the vehicle of choice for ensuring accountability. Government mandated reform is spearheaded by a focus on results, with demands for evidence firmly embedded (Fullan, 2000). Nations, states, provinces and school districts have implemented large-scale assessment systems, established indicators of effectiveness, set targets, created inspection or review programs, tied rewards and sanctions to results and many combinations of the above (Whitty *et al.*, 1998; Leithwood *et al.*, 1999). In the new *educational orthodoxy* (Hargreaves *et al.*, 2001), large-scale assessment and testing has moved from being an instrument for decision-making about students to being the lever for holding schools accountable for results (Firestone *et al.*, 1998). Leaders in states, districts and schools are required to report publicly about their efforts and demonstrate their successes.

### **Data for Improvement**

School leaders are no longer resident experts about their schools. Instead, they are faced with the daunting task of anticipating the future and making conscious adaptations to their practices, in order to keep up and to be responsive to an ever-changing environment. To succeed in a rapidly changing and increasingly complex world, it is vital that schools grow, develop, adapt and take charge of change so that they can control their own futures (Stoll *et al.*, 2003). Schools that are able to take charge of change, rather than being controlled by it are more effective and improve more rapidly than ones that are not (Rosenholtz, 1989; Stoll & Fink, 1996; Gray *et al.*, 1999). There is not enough time for adaptation by trial and error or for experimentation with fads that inevitably lose their appeal. In the knowledge society, the sharing of data and information has become a critical part of decision-making. Very few institutions function without relying on data. Although the social process of sharing information and using it to produce knowledge is still not well understood, educators are recognising that they need to use data. Research studies, evaluations and routine data analyses offer mechanisms for streamlining and focusing planning and actions in schools.

## **THREE DIFFERENT REFORM CONTEXTS**

Over the past decade, we have been fortunate to be able to watch and learn from reform efforts in a number of locales, through several research and evaluation projects. The data for this paper have emerged from these studies. The data for the National Literacy and Numeracy Strategies in England come from a four-year external 'critical friend' evaluation that we have conducted for the English DfES (Earl *et al.*, 2003). In Manitoba, we have been evaluating the implementation and impact of MSIP on the participating schools and on education in the province of Manitoba as a whole since 1995 (Earl & Lee, 1998; Earl *et al.*, 2001). The data from Ontario come from several studies of

implementation and impact of the reforms in Ontario secondary schools (Earl *et al.*, 2002). This experience has given us considerable insight into the way that data are being considered and used in these vastly different contexts.

In this paper, we examine the tension that school leaders are feeling about data, by considering three very different contexts in which we have been working over the past several years:

- The National Literacy and Numeracy Strategies in England.
- The Manitoba School Improvement Program in Manitoba, Canada.
- Secondary School Reform in Ontario, Canada.

Using data is a major part of the reform in each of these large-scale school reform efforts and this theme has been a sub-focus of investigation in our projects. The interviews and surveys that have been done in each of these projects allow us to highlight the multiple dilemmas experienced by educational leaders as they negotiate their relationship with data about their schools, especially within contexts of school improvement that are directed, at least in part, from outside. (For a complete description of the methodologies used in these studies, refer to the original reports cited above.)

The context of each of these three locations is very different, both in the nature and origin of reforms and in the availability and use of data. The next sections give a brief overview of each reform and the availability and use of data.

### **The National Literacy and Numeracy Strategies in England**

The National Literacy and Numeracy Strategies (NLS and NNS) represent a major government initiative to improve classroom practice and pupil learning in literacy and mathematics in primary schools across England. The Strategies, comprehensive in design and execution, have pulled together various policy strands to provide clear direction and support for change, with new roles, high quality materials and political support. National targets aimed to increase the percentage of 11-year-olds reaching the ‘expected level’—Level 4—in annual national assessments for English and mathematics. The strong accountability system established by the previous government was continued, with school-based targets and focused attention to literacy and numeracy teaching in OfSTED inspections. At the same time, the government added many opportunities for capacity building and created a national infrastructure to support the implementation and advancement of the Strategies.

The Strategies are an ambitious professional learning programme that has involved virtually all primary schools in England. Although the Strategies were not statutory, all 20,000 primary schools received materials and access to training and regular monitoring of school performance by the national government made the Strategies a high priority for most schools.

England arguably has more data and more sophisticated data about education than any other jurisdiction in the world. The National Assessment program has been in place since 1989 and the Key Stage Assessment results

form a major element of policy decisions and accountability. Primary schools implementing NLS/NNS set targets for their progress on the Key Stage Assessments that are reported publicly and monitored by the LEA and the national government. They also receive detailed reports about their results in an annual 'Autumn Package' that includes the individual school's performance and assessment report, as well as national summaries, value-added information and national benchmark information using free school meals data to create groups of 'like' schools. Schools are also inspected regularly by OfSTED for compliance with directives and for quality of teaching, management and so on. The reports are posted on a public website. Local Education Authorities and headteachers have responsibility for monitoring the progress and success of the Strategies and are expected to use available data to guide their monitoring and to justify their decisions.

### **Manitoba School Improvement Program (MSIP)**

MSIP is a Canadian non-profit, non-governmental school improvement initiative. It was established to improve the learning experiences and outcomes of secondary school students in participating schools by building schools' capacities. Over the past 10 years, a Canadian foundation and later MSIP as a non-profit company have supported school-based improvement projects designed to help students at-risk remain in school and fulfil their individual educational potential, by providing multi-year grants to schools and districts to support locally-defined school improvement efforts. The schools also receive professional and technical support from a small secretariat of consultants employed by MSIP.

Schools that receive MSIP funding are engaged in school-based improvement, focused on the needs of adolescent secondary school students (especially those at risk). As part of their commitment to MSIP they agree to include an evaluation process in their projects and to produce annual evaluation reports.

MSIP involves a relatively small number of secondary schools (approx. 30 since 1991) but this number represents about 10% of the secondary schools in Manitoba. These schools have actively pursued a range of initiatives, designed to bring about whole-school change.

MSIP has always believed that thoughtful reflection based on data helps build a school's capacity to sustain improvement (Lee, 1999). Even in the early days of the program, inquiry and use of data were highlighted as important elements of school improvement and advocated by MSIP staff. In an interim evaluation report of the implementation of MSIP, Fullan *et al.* (1995, p. 27) indicated that 'engaging in ongoing inquiry and reflection appears to be one of the key factors separating schools with deep impact from those whose project impact is less significant.' This belief was borne out in an evaluation of the overall program (Earl & Lee, 1998) which suggested that successful MSIP schools understand and embrace the evaluation process and regard evaluation and use of data as an invaluable tool for school planning.

Although the MSIP network places value on using data for decision-making, the data available to them are almost all locally developed in the schools, as part of their internal reflections and planning. The provincial assessment programme in Manitoba has focused largely on primary schools and the assessments that have been done in secondary have not been consistent over the years. Most districts, even when they collect data about schools for management purposes, do not prepare summary reports or return the data to the schools. Because the schools (or sometimes districts) all use different systems for capturing and recording data, it is difficult to extract comparable summaries of routine data across schools. No data are reported publicly.

### **Secondary School Reform (SSR) in Ontario, Canada**

Secondary School Reform (SSR) in Ontario was introduced in 1997 as part of a major education bill—the Education Quality Improvement Act. The goals of SSR were to improve the accountability, effectiveness and quality of Ontario’s school system. The reforms included secondary school reduced from five to four years, new and more challenging curriculum, two differentiated levels of courses, mandatory community service, specified subject and skill graduation outcomes, prior learning assessment, common report cards and a mandatory literacy test as a requirement for a secondary school diploma. At the same time, the government released a new funding model that removed taxation for education from municipalities and positioned it in the provincial purview; amalgamated school boards, established school advisory councils; mandated the amount of instructional time in a teacher’s day; and set an average class size for districts across the province. As might be expected, the political context in Ontario that has accompanied large-scale reform has not been smooth or pleasant. From the early days, teachers and politicians have been at loggerheads. Teachers’ staged a 2-week province-wide walkout in October 1997, in opposition to ‘the heavy hand of government’. These reforms and the rancour that accompanied them influence all secondary schools in the province.

Having data available about schools is a relatively recent phenomenon in the province of Ontario, Canada. With the exception of a few sample assessments of students during the 70s and 80s, the province had almost no history of large-scale assessment and none with ‘high stakes’ for students, schools or districts. In 1995 the government created the Education Quality and Accountability Office (EQAO), an arms-length agency of government charged with collecting, evaluating and reporting information about educational quality. Large-scale assessment of reading, writing and mathematics began in 1997 in grades 3 and 6. Later EQAO introduced a mathematics assessment in grade 9 and a reading and writing test in grade 10. This grade 10 test is a high-stakes graduation requirement for secondary students. Schools receive summaries of the performance of their students on each of these assessments and they are required to report their results publicly to the community. The results are also published in local newspapers.

## LEADERSHIP DILEMMAS IN A DATA-RICH WORLD

The explicit connections between data and large-scale reforms make it impossible to avoid using data. At the same time, some leaders are becoming convinced that they need to pay attention to data to focus and clarify their decisions. In these three locations, leaders have expressed both their reservations and their hopes for the use of data in school planning and change. The three jurisdictions that we are watching are very different from one another and their actual use of data is quite variable as well, with most use in England and least in Ontario. The use of data in England and Ontario is a mandated part of a much larger centrally directed reform agenda. In Manitoba, the use of data is much more 'home grown' and localised in individual schools. Leaders in all three locations described their worry about not understanding data. Leaders in England and Ontario, the two locations embroiled in large-scale reform, were much more concerned than those in Manitoba about the power struggle between central and local control, and worried about who to trust and how to protect themselves and their schools. All of the groups were positive about how data helped them focus their thinking and provided them with insights that were useful in making decisions. They also all expressed concern about how to translate data into useable knowledge and communicate it to their constituents, especially when they were not in control of the communication strategy.

### **Making Sense of Data**

School leaders in all three sites were very forthright in their anxieties about using data. Even when they were positively disposed to looking at data as part of their decision-making, they expressed insecurity about their skill in gathering, interpreting and making sense of the information about their school. Many of them indicated that they had not had training or experience in research, data collection, data management or data interpretation. Most often, they received instructions for collecting data and summaries or reports that have been tabulated outside their own district or school as a package of print material. Although they were charged with the responsibility for communicating the information to other staff, parents and the community at large, preparing for this task was something they had to do for themselves.

They are sending us the administration training on a CD for teachers to use to prepare. They don't get any release time to do it. And I've never been given any training. I haven't even had time to put it in the computer. (Ontario)

When we talk to principals and even district leaders, they tell us that the data are sometimes impenetrable to them. Tables and graphs that are supposed to be self-evident fail to provide them with the insights that they feel ought to accrue. Some of them even admit that they do not really know how to use numbers from

large-scale assessments and indicator systems in their school planning. This is not an unusual phenomenon. As Earl (1995) suggested, 'we live in a culture that has come to value and depend on statistical information to inform our decisions. At the same time, we are likely to misunderstand and misuse those statistics because we are 'statistically illiterate' and consequently have no idea what the numbers mean' (p. 27).

We have also witnessed several exceptions to this discomfort with the meaning of data. In MSIP, the schools gather and summarise the data that they feel is important for making decisions about their own school directions. In these cases, they were more at ease with interpreting and applying the data.

We are now keeping stats of the number of students who were in the classes at the beginning of the semester, the number of students who dropped out during the semester and the final ones who were successful in completing the credit. We are collecting data on it, and we are sharing it with staff on a regular basis. A lot of teachers never thought of this at all. They have no idea that 33% of the students are unsuccessful, more if you consider the drop-outs. In some classes over 50% of these kids either dropped out or didn't pass the course. The teachers are just blown away. (Manitoba)

We use data in our school extensively as part of our ongoing planning activities. We've been able to pick out key elements about our goals, for example school safety. The data came back in tremendous support that this school is a safe place. It's reinforced our notions and directed us this year. We've had to pay minor attention to school safety but have kept the issue at the forefront. Our goal is to continue to analyse data and tie it to our school plan for this year which is quite exhaustive. (Manitoba)

In England we watched school leaders become more sophisticated and comfortable with using data. This was particularly noticeable when they moved from a focus on numerical targets that the government required them to set to a careful description of curriculum targets, based on the frameworks for literacy and numeracy. These curriculum targets describe actual learning that is expected of particular children. When teachers, school-based co-ordinators and headteachers worked together to describe the curriculum targets for the children in the school, they could use them confidently as mechanisms for planning instruction and support for individual student learning.

Using data wisely for decisions in schools is much more than gathering data and turning them into numbers. A process of human interpretation and creating meaning has to happen to change data into information and ultimately into workable knowledge. Leaders are aware that they need to become expert at moving from data to information to knowledge but they are not at all confident that they know enough to be able to do it well.

### **Surveillance or Improvement**

One of the recurring dilemmas for school leaders in Ontario and England was whether or not the data were actually useful to them or merely served as mechanisms for oversight by the central authority.

On one hand, they expressed unhappiness about what they termed the 'surveillance' orientation of central government and deplored the fact that data were being used inappropriately to 'name and shame' schools and to direct the action and ensure compliance.

The DfES was frightening initially. They did a lot of leading and set rigid targets. We felt pretty helpless. (England)

Certainly the introduction of data systems, along with public reporting, has a dramatic impact on the balance of power between the central authority and local jurisdictions (LEAs/districts and schools). In England and in Ontario, the government had intentionally taken control of reform efforts and mandated assessment and reporting in particular ways. Suddenly, data became an important part of the role of school leader.

We watch our targets carefully. Right now we are on track for meeting the LEA target. That means we can relax a little. But, we'll start spending time preparing the year 6 pupils for the SATs soon. (England)

In both of these places, we heard about the resentment that was felt in jurisdictions about the imposition of centralised data requirements, targets and progress reports. In Ontario, some principals felt that the introduction of the provincial mandates slowed their process down and added extra work.

It complicated our lives to accommodate the new assessment system. We had to do essentially what we'd done before but we had to do it a little differently, to fit in. That caused a lot of resentment and extra work and bitterness. (Ontario)

There's so much bean counting going on and we're so busy filling in surveys and supervising EQAO tests that we don't have time to do things that really affect the kids. (Ontario)

The same people, however, often gave examples of the way that data provided them with insights that led to better and more focused decisions.

We looked at the data and identified the weaknesses and started to plan improvements. The school started to make immense progress in teaching and learning because we could see the problem and we got the supports for the teachers. We're refining it now so that the link adviser is going to work with us using our data to keep self-evaluating. (England)

I guess it's part of human nature to compare oneself with others and there are dangers in that, but there is also value. Looking at the numbers can help us see what we can do in this particular area to improve instruction. That's what it's all about. (Ontario)

In Manitoba, the principals did not seem to be concerned about surveillance. Instead, they told us about how the data were linked to their improvement efforts.

We've used data throughout the years to derive the next year's initiatives. Data have become significant as a vehicle to help plan a sense of direction. We would talk about 'data to action'. Ongoing inquiry and reflection are now part of the culture. Today at a staff gathering they did a reflective piece on the year in terms of different professional development. They did a survey, an hour-long survey, and they gave that in advance. That piece is part of what drives next year. (Manitoba)

Manitoba principals also mentioned that the large-scale assessments being considered by the provincial government would not tell them anything that they didn't know already and they would be very unhappy if there was a decision to mandate centralised data collection about schools.

Although leaders were experiencing the value of using data and had many examples of occasions when data provided them with insights and motivation to address a problem, they were plagued by worries, because of the climate of surveillance, that the data would come back to 'bite' them at some point. This tension was particularly evident in contexts of large-scale centralised reform.

### **Losing Control of Interpretation**

The rapid shift from no data to mountains of data has had a serious effect on how leaders communicate with their constituents, what they communicate and what evidence they draw on to support their statements. In fact, the access to and transparency associated with collecting and making data public has transformed what people in the community know and how they come to know it. When data is summarised and made publicly available, are the power of local leaders to release information selectively or to manage its release it curtails. Once again, we saw similarities in Ontario and England and differences in Manitoba. In Ontario and England, leaders received the data from central agencies at about the same time as results were available to the public. Leaders found themselves surrounded by data but the 'story' was often out of their control. Data are publicly reported to ensure transparency. Transparency means vulnerability. Leaders were racing uphill, trying to not only make sense of the data but also to present it in reasonable ways.

We're struggling. We don't really know what our results will be and we don't know how to deal with it. What will we do with the kids who haven't passed the literacy test [a graduation requirement]? How will

the school be viewed? The most difficult thing will be how to deal with the parents. (Ontario)

Interpreting the data requires an intimate knowledge of the school. The figures don't tell you all that you need. You need local knowledge and the papers don't report any of that. (England)

In other cases, they mused that some of the data that were being collected and reported were worrisome because they unearthed problems that then had to be dealt with.

How do you keep your staff happy when you are asking them to slit their own throats by reporting the data? They feel that their role as professionals has been eroded and undermined. If no one values them as professionals, they do whatever they have to, but no more. (Ontario)

In Manitoba there were no such worries. The data were not public and principals had control over what was released and how it was presented. Often they saw no need for communicating the information beyond the school staff.

The current situation is a far cry from the time that we described in the introduction to this paper when leaders had near absolute control of the communications about their schools. When the data are locally developed, leaders still are able to decide how to use it and who should see it. When the data are public, there is no escaping the release of data and needing to respond to questions and concerns that come from various constituents.

## RESOLVING THE DILEMMAS

It is clear that leaders are experiencing some tensions and dilemmas as a result of data about their schools, especially when the data are collected centrally as part of a large-scale reform agenda. These dilemmas are not a surprise. Historically schools and LEAs/districts have been notoriously poor knowledge sharers. This has never been part of the 'habits' of schools and little time or training is dedicated to sharing knowledge. Increasingly, however, organisations of all kinds are realising that it is enormously difficult in a world that is rife with data to create visions of the future without sharing and examining what is known. Creating knowledge involves much more than sharing data. Data and information, on their own, have no meaning. Turning them into knowledge is a human process that involves taking on a 'social life'. They become valuable when they are shared and debated and applied in a social context (Brown & Duguid, 2000). Both giving and receiving knowledge are critical to improvement. When schools have the capacity, the role of the leader is to create the conditions for everyone else in the school and the community to have the knowledge that they need to move forward. They need 'assessment literacy'—the collective capacity of teachers and leaders in schools to examine data, make critical sense of it, develop action plans based on the data, take action and monitor progress along the way (Fullan, 2001).

In the short term, leaders have expressed feelings of powerlessness and lack of confidence. In the longer term, these dilemmas may be less problematic.

As we have argued before:

The challenge for leaders, is to use data, not as a surveillance activity but in the service of improvement. Overt accountability controls may serve the useful purpose of creating a sense of urgency, but, as we have argued elsewhere, accountability is much more than providing a ledger sheet or identifying the 'culprits'. Rather, we propose that the essence of accountability is looking forward, using data to inform judgments about current performance and formulate plans for reasonable actions. (Earl & Katz, 2003)

A move from accountability as surveillance to accountability for improvement requires a fundamental mindshift. External mandates offer the potential benefit of placing leaders in a position in which the importance of data for decision making can become understood. But, as long as the focus is on compliance with surveillance demands, the actions are fragile and can use valuable energy without making a difference. Educators, themselves, ought to be the prime consumers of data in the process of making decisions based on intrinsic reasons for collecting and using data, regardless of the external requirements of reinforcement. To do this, they must become experts in interpreting data and transforming it into knowledge.

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