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# From accounting to accountability: Harnessing data for school improvement



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Dr. Lorna Earl is Director, Aporia Consulting Ltd. and a recently retired Associate Professor in the Theory and Policy Studies Department and Head of the International Centre for Educational Change at OISE/UT. Her career has spanned research, policy and practice in school districts, provincial government and academe. After 25 years as a Research Officer and Research Director in school districts, she was the first Director of Assessment for the Ontario Education Quality and Accountability Office. From there she moved to OISE/UT.

Lorna is a teacher and a researcher with a background in psychology and education and a doctorate in Epidemiology and Biostatistics. She has worked for over 20 years in schools and school boards and, as a leader in the field of assessment and evaluation, has been involved in consultation, research and staff development with teachers' organizations, ministries of education, school boards and charitable foundations.

Throughout her career, she has concentrated her efforts on policy and program evaluations, as a vehicle to enhance learning for pupils and for organizations. She has done extensive work in the areas of literacy and the middle years but has concentrated her efforts on issues related to evaluation of large-scale reform and assessment (large-scale and classroom) in many venues around the world.

There was a time in education when decisions were based on the best judgements of the people in authority. It was assumed that school 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, professional training and logical analysis. Data played almost no part in decisions. In fact, there was not much data available about schools. Instead, leaders relied on their tacit knowledge to formulate and execute plans.

In the past several decades, a great deal has changed. The 21st century has been dubbed the 'information age'. There has been an exponential increase in data and information, and technology has made it available in raw and unedited forms in a range of media. Like many others in the society, educators are trying to come to grips with this vast deluge of new and unfiltered information, and to find ways to transform this information into knowledge and ultimately into constructive action.

## **Data as a policy lever**

Accountability and data are at the heart of contemporary reform efforts worldwide. Accountability has become the watchword of education, with data holding a central place in the current wave of large-scale reform. Policy makers are demanding that schools focus on achieving high standards for all students, and they are requiring evidence of progress from schools that is conceived of explicitly in a language of data (Fullan, 1999). 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, Edge, & Jantzi, 1999). 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 demonstrate their progress to the public.

Not only are schools being judged using data, many of the reforms also assume or require a capacity on the part of schools and school leaders to use data internally to identify their priorities for change, to evaluate the impact of the decisions that they make, to understand their students' academic standing, to establish improvement plans and to monitor and assure progress (Herman & Gribbons, 2001). School leaders are finding themselves faced with challenges that are ill-structured with more than a single, right answer. 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 the environment. There is not enough time for adaptation by trial and error or for experimentation with fads that inevitably lose their appeal. In this context, research studies, evaluations and routine data analyses offer mechanisms for streamlining and focusing planning and actions in schools.

Viewed from this vantage point, data are not 'out there'. They are, and should be, an important part of an ongoing process of analysis, insights, new learning and changes in practice in all schools and

districts. Data provide tools for the investigation necessary to plan appropriate and focused improvement strategies. Synthesising and organising data in different ways stimulates reflection and conjecture about the nature of the problem under consideration. Over time, this process gives rise to defensible plans for changes.

### Accountability redefined: from surveillance to informed professional judgement

When all is said and done, school leaders are the ones who are accountable for the work of the school. High-stakes accountability systems can create a sense of urgency and provide 'pressure' for change. However, real accountability is much more than *accounting* (providing information or justifications in an annual report or a press release or even student report cards). It is a moral and professional responsibility to be knowledgeable and fair in teaching and in interactions with students and their parents. It engenders respect, trust, shared understanding, and mutual support.

**Accounting** is gathering, organising and reporting information that describes performance.

**Accountability** is the conversation about what the information means and how it fits with everything else that we know, and about how to use it to make positive changes.

Earl & LeMahieu, 1997

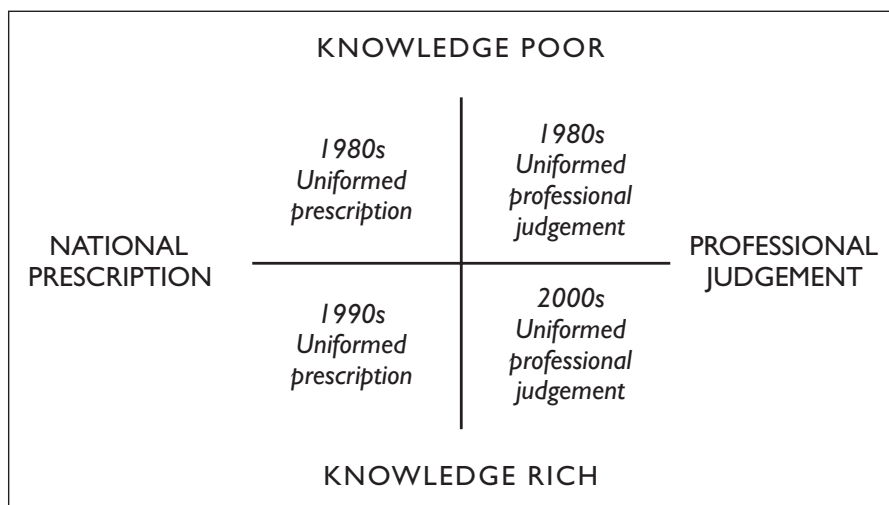


Figure 1

### Choosing accountability through informed professional judgement

Michael Barber (2002), a national policy advisor on education in England, uses the following graphic to describe trends in educational reform over the past 50 years as a function of the knowledge base on which it has been founded and the locus of responsibility and decision-making.

He portrays the 1970s as a time of 'uninformed professional judgement', in which educators operated largely as individuals within broad policy guidelines, relying on their personal professional perspectives to make decisions. The 1980s were a time of 'uninformed prescription' where governments took direct control of education and dictated prescriptive directions, often without appealing to any knowledge base other than their own ideological views. National or federal programs proliferated, with centrally directed curriculum and assessment systems. In the 1990s governments still controlled the

educational agenda, but they began to draw on research and other evidence to inform their policies.

Barber sees the 2000s as an era of 'informed professional judgement', in which control of education ought to be returned to educators, but now with explicit requirements to be informed professionals. And that means using evidence and research to justify and support educational decisions.

Many school leaders are ready for 'informed professionalism' but that requires a concerted emphasis on becoming and staying 'informed'.

### Using data to 'take charge of change'

Using data does not have to be a mechanical or technical process that denigrates educators' intuition, teaching philosophy and personal experience. In fact, using data wisely is a human thinking activity that draws on personal views but also on capturing and organising ideas in some systematic way, turning the information into meaningful

actions and making the interpretation public and transparent (Senge, 1990). Having data is a beginning, but it is not enough. Schools need to move from being data-rich to being information-rich and knowledge-rich as well.

Information becomes knowledge when it is shaped, organised and embedded in a context that gives it meaning and connectedness. Using data is not separate from planning and from routine decisions in schools. Instead, data are a necessary part of an ongoing process of analysis, insight, new learning and changes in practice. Synthesising and organising data in different ways stimulates reflection and conjecture about the nature of the problem under consideration and provides the vehicle for investigating and planning focused improvement strategies.

The implications for leaders are vast. If data are to become part of the fabric of school improvement, however, leaders in schools must become active players in the data-rich environment that surrounds them (Earl & LeMahieu, 1997).

## School leaders as data artists

Using data for improvement puts school leaders into new roles in which they must operate like artists, painting a gallery full of pictures to characterise the complexities and subtleties of the subject. Artists are always gathering and using data. They are constantly observing, investigating, and responding to colours, textures, and images. And, they use their considerable interpretive talent and experience to draw the salient features to the foreground, emphasise important dimensions and communicate a mood and a message to the audience.

Educators need to use data in many different contexts – to establish their current state, to determine improvement plans, to chart effectiveness of their initiatives and to monitor their progress towards their goals. This process can serve a model at any stage in their planning and as a guide as they become comfortable with using data in their work. In another publication we have identified what we believe are the key capacities for leaders in a data-rich world (Earl & Katz, 2002). Leaders for informed professionalism will need to:

- develop an inquiry habit of mind,
- become data literate and
- create a culture of inquiry in their school community.

The panels in the graphic are organised around the three key capacities and use the painting metaphor to detail the process of using data.

## Inquiry habit of mind

The first stage of the process is both simple and profound. Professional decisions in schools have historically been based on tacit knowledge, knowledge that is embedded in individual experiences and involves intangible factors like personal belief and values. But, schools today are very complex places and the kinds of challenges that demand reflection, consideration of many points of view and attention to context and evidence. As Fullan (2001) argues:

Schools are beginning to discover that new ideas, knowledge creation, inquiry and sharing are essential to solving learning problems in a rapidly changing society.

An *inquiry habit of mind* for organisational improvement means developing a habit of using inquiry and reflection to think about where you are,

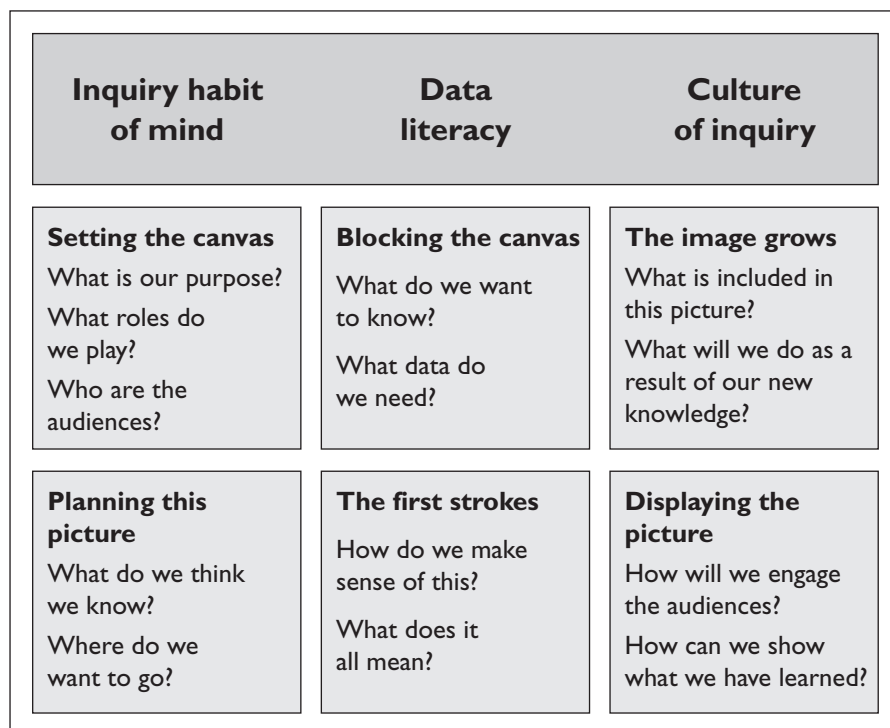


Figure 2 Painting as a metaphor for making data-informed decisions

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where you are going, how you will get there, and then turn around and rethink the whole process to see how well it is working and make adjustments.

### **Setting the canvas**

Artists begin their work by preparing their canvas and deciding about the dimensions and scope of the work. For educational leaders, setting the canvas means establishing the background for an issue, deciding why they are dedicating resources (especially time) to this issue and identifying all of the people who need to be involved in one way or another. Before making any serious educational decisions, the leadership team needs to be explicit about their purpose, about who should be involved in the decision; about the audience for the judgement and about their own responsibility in the decision-making process.

### **Planning this picture**

In the second panel, the team situates the issue by establishing the current state of affairs and explicitly deciding about the ideal outcome of their work. It is important to have a clear picture of the present before jumping into making plans and some image of what you are hoping to accomplish.

### **Data literacy**

Most school districts have lots of data available in their district information systems, although they may not be easily accessible or organised in a way that they can be easily used by individual schools. Schools are also likely to have various kinds of other formal and informal data that tend not to be electronically stored – data like classroom records, classroom assessments and program descriptions.

Educators can draw on many different forms of evidence – research studies, test results, surveys, observations, testimonies and witnesses all qualify as data. The challenges come in deciding what data are appropriate and useful for their purposes, ensuring the quality of the data and doing the kinds of analyses and interpretations that will help them make sense of the data.

### **Blocking the canvas**

Once the team is beginning to get a feel of the contours of the issue, they can begin to think about what data will help them make the image visible to themselves and others. They are ready to decide what data they need – to choose their palette of colours, define the scope of the work and make decisions about composition and design. This is not as simple a process as it may appear: Getting the right data depends on asking the right questions.

### **The first strokes**

The value associated with data come from skill in discerning the quality of the data, organising it, thinking about what it might mean and using it wisely to make decisions. Making sense of data, like painting pictures, is an iterative process. One idea leads to another. Some ideas lose credibility in the process. Others get clearer: New information leads the work in a different direction.

At this point, the team considers data in a range of different configurations, spends time trying to make sense of it through analysis, discussion and interpretation and transforms data into knowledge that they can use. This is the process that determines what the picture looks like – what story it tells, what images come into foreground and which recede into background; what

mood it creates, and so on. This is also where technical assistance becomes an important part of the process. Educators are not likely to have the technical expertise to do all of the necessary analyses and they don't need to become data analysts. What is much more important is that leaders are aware of the value and the constraints that are associated with various kinds of data, as they use it to think about their work. Then they can call on others to serve as 'critical friends' to help them with analysis and even with the interpretation.

### **A culture of inquiry**

Educational change depends on collaborative professional learning. We have known for a long time that mandating change doesn't work. Mandates may create an awareness that changes are necessary but real change depends on people working in schools, engaging in new learning, individually and collectively, to refresh their knowledge, understandings and skills and to deal with and take charge of change.

Becoming inquiry-minded and data literate are major changes in practice that are consistent with the notion of professional learning communities and that warrant concerted attention to new shared learning. When educators come to the planning process as investigators, wanting to understand and interested in working together and with others to find the best solutions, they find themselves engaged in a very different kind of organisation; one that values dissenting voices and is determined to generate and share knowledge, even when the new knowledge may mean having to make dramatic changes and even reinvent themselves.

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## The image grows

As the team considers the data and talks about what they are learning, their painting begins to materialise and they become more aware that there are many possible interpretations and many possible strategies for improving what they do in schools. But even more important, the data suggest that there is work to be done. It is time to use their new learning to change what they are doing.

## Displaying the picture

The team also finds that they are not alone. There are many people in the community who care deeply about what happens in schools. They can start to think about what they need to communicate to whom and about how others can contribute to their ongoing quest for deeper understanding and better solutions.

The painting metaphor gives the leadership team a process for using data to produce a static image of an issue a point in time. Once there is an initial image, it becomes the basis for public engagement and for changing practices.

In this metaphor, the picture is the stimulus for action, not the end result. The process now shifts to sharing what has been learned, listening carefully to the responses from the various people who care and deciding what has to happen next. This is not a showcase event; it is an ongoing, active exchange of ideas and decisions about action.

## A gallery full of paintings

Using data to make decisions is hard work. Although it may be tempting to mount the picture and accept the accolades, educational change is a

never-ending process and there is never a single final image. Instead, each image is one in a series that will emerge as the team revisits the issue and considers what has changed and what needs adjustment. When schools engage in ongoing school improvement, they find themselves in a continuous cycle of change. It gets easier as they internalise and embed the technical skills, organisational processes and values into routines in the culture of the school.

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