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Towards a culture of inquiry for data use in schools: Breaking down professional learning barriers through intentional interruption

Steven Katz *, Lisa Ain Dack

University of Toronto, Canada

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ABSTRACT

Real professional learning is about making changes to thinking and practice. Data-use has the potential to yield real professional learning when it interrupts the status-quo. However, people have a natural propensity to avoid new learning by transforming the world to fit what is already in their minds, rather than changing their mental structures to fit new information. Cognitive biases work to preserve the status-quo and impede new learning. Data-use can interrupt the cognitive biases, but only if informed by knowledge of how these biases work. This article describes a number of cognitive biases, how they emerge in a professional learning context, and how data-use within a culture of inquiry can intentionally interrupt the biases to lead to authentic professional learning.

Introduction

In an article with the provocative title, *The New Stupid*, Hess (2008) reminds us of how we have come from a time when educational leaders and practitioners dismissed data and systematic research as having limited value, to a time when almost every education conversation is rife with references to data-based decision-making and research-based practice. He issued the following warning:

> I fear that data-based decision making and research-based practice can stand in for careful thought, serve as dressed-up rationales for the same old fads, or be used to justify incoherent proposals. Because few educators are inclined to denounce data, there has been an unfortunate tendency to embrace glib new solutions rather than ask the simple question: What exactly does it mean to use data or research to inform decisions? Today's enthusiastic embrace of data has waltzed us directly from a petulant resistance to performance measures to a reflexive and unsophisticated reliance on a few simple metrics. (p. 12)

In the current age of accountability, there is little question that data can add value to organizational decision-making, but using data means much more than being passive recipients of explicated truths in the name of data-driven decision-making. Data alone do not answer questions; instead they provide tools for thinking (Earl & Katz, 2006). And thinking is a *human* activity, not a mechanistic one. As we will outline in this article, becoming a skilled and confident consumer and user of data for school improvement is a way of thinking that interrupts the status quo in the service of *real* professional learning. It creates and sustains a culture of inquiry in which real professional learning is at the centre. The capacity-building question, as we will see, is less about learning how to use data (as a discrete technical skill) and more about how to use data to learn. For the purposes of this paper we define data broadly, to include all forms of data that relate to the educational enterprise, rather than being confined to student achievement results.

Professional learning at the centre

Michael Barber (2002), a national policy advisor on education in England has argued that the 2000s is an era of "informed professional judgement," in which control of education is in the hands of practitioners, but with an explicit requirement that they act as informed professionals. That means using evidence to inform educational decisions. Using data in the service of wise decision making, from our perspective, is anchored in a conviction that improved learning outcomes for students is the ultimate goal, and that more and better learning for students depends on informed professional judgement that results in changes in classrooms and schools. Significant research (Darling-Hammond, 2000; Hattie & Timperley, 2009; Marzano, Pickering, & Pollock, 2001) has concluded that student achievement is most influenced by

* Corresponding author at: Department of Applied Psychology & Human Development – 9th Floor, Ontario Institute for Studies in Education/University of Toronto, 252 Bloor Street West, Toronto, ON M5S 1V6, Canada.
Tel.: +1 416 978 1034.
E-mail address: steven.katz@utoronto.ca (S. Katz).

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classroom practice, and classroom practice, in turn, is most influenced by teacher learning. Teaching something differently (or rather, better) depends on teachers learning something new. It is the *learning* that is key here. In fact, we would argue that the idea of *learning* in and of itself is just as important as the content area in which the learning is taking place. The requirement to learn new content will always be a part of any professional's job, teachers included. Much of the power comes in knowing *how* to go about doing that: in having the stance, strategies, and skills to know *how to learn*.

Our position on the centrality of professional learning has been reinforced by work done as part of the Best Evidence Synthesis Programme of the New Zealand Ministry of Education. One of these Best Evidence Syntheses, on Professional Learning and Development, examined studies in professional learning that have had a demonstrable impact on student learning (Timperley, Wilson, Barrar, & Fung, 2008). This review provides a backdrop for thinking about how teachers and leaders can use data to identify what they need to know, make informed decisions about changes to practice, build their capacity, and check on the success of their efforts over time. Timperley et al. (2008) summarized their work in a powerful inquiry cycle for changing practices to influence student learning. The cycle begins with a consideration of student learning needs. Once students' learning needs are understood, the teacher moves to an explicit articulation of the relationship between current teaching practice and the student learning requirements, and then plots a course for professional learning that will deepen professional knowledge as well as translate into changes in practice. This process of professional inquiry is cyclical but forward-moving. As practices change and students are better served, teachers move on to a new consideration of student learning needs and the cycle repeats. It should be evident that inquiry and professional learning are inseparable in this model; they merge in a progressive way.

A culture of inquiry

Collaborative inquiry is one of the most powerful enablers of changes in practice that can influence student learning (James & McCormick, 2009; Katz & Earl, 2010). This process merges deep collaboration (in the form of rigorous and challenging joint work) with inquiry, and is supported by Little's (2005) reference to a substantial body of research suggesting that conditions for improving learning and teaching are created when teachers collectively consider evidence about the current state of affairs, question ineffective teaching routines, examine new conceptions of teaching and learning, find generative means to acknowledge and respond to differences, and engage actively in supporting one another's professional growth. Collaborative inquiry that challenges extant thinking and practice has the potential to drive school improvement because it attends to both shared learning activities as well as individual knowledge formulation processes. If real and impactful change comes from creating new knowledge, then a key challenge for educators is to operate in a way that facilitates ongoing knowledge creation among members of the community as a means for locating and processing both tacit and explicit knowledge. In operating as such *knowledge workers* (Hakkarainen, Palonen, Paavola, & Lehtinen, 2004), educators within a community engage in deliberate and intentional efforts to reframe "what they know" as "what they *think* they know," in order to subject these knowledge hypotheses to scrutiny and challenge in relation to available evidence. The capacity-building requirement, then, is to create the conditions for generating new knowledge through a process that combines deep collaboration with evidence and inquiry.

If collaborative inquiry is the engine for professional learning in the way described above, then data provide the fuel. Data do not answer questions; instead they provide lenses for teachers and leaders to think about and understand their contexts and their work better as both a starting point and a monitoring mechanism for the kind of professional learning that can change what happens in schools and classrooms (Earl & Katz, 2006). Data are tools that teachers and leaders can use to focus and challenge their thinking in ways that result in the understandings, which then have the potential to change their thinking and their practices. As fuel for collaborative inquiry, data can shape the content and provide the direction for conversation. When educators engage in conversations about what evidence means, they can consider the data, generate hypotheses, and establish a range of possible interpretations. This process sets the stage for the creation of new knowledge as the participants grapple with new ideas or discover that previously held truths fail to hold up to scrutiny. Paying attention to data holds the potential to yield new professional learning because it *interrupts* the status quo.

Learning to use data, then, is not a discrete technical capacity. Although becoming "data literate" (Earl & Katz, 2006) matters, much of the utility of data for school improvement lies in its function in *learning how to learn*; that is, in learning how to engage in meaningful inquiry as a technique for knowledge creation. Instructional leaders, in particular, have an important role to play in creating opportunities for teachers to become comfortable with "not knowing', to see new learning (for themselves) as a routine part of their work, and to participate in an ongoing process of examining their own beliefs and practices in relation to various bodies of evidence. Schools that are focused on professional learning, as a continuous and a central responsibility, have developed a culture of inquiry in which accountability is a process of using evidence to identify priorities for change, to evaluate the impact of decisions, to understand student achievement, to establish improvement plans, and to monitor progress (Herman & Gribbons, 2001). In a culture of inquiry, data function as tools for thinking.

What is "real" professional learning?

Thus far, we have argued that the utility of data in the service of school improvement comes by way of its centrality in a culture of inquiry. Within such a culture, collaborative inquiry is way of engaging in real professional learning, such that new understandings can give rise to improved practices, which in turn influence student learning and achievement. The critical question at this point, then, is what exactly is *real* professional learning, and how does data (or evidence more broadly) potentially enable it? Put slightly differently, what does it mean for data to function as tools for thinking? These questions define what we see as the core of the capacity-building challenge with respect to effectively using data for improvement.

Despite the centrality of learning in education, it is not an easy notion to define. Most popular definitions include some form of knowledge and/or skill acquisition process (e.g., "Learning," n.d., Wikipedia). From our perspective, this is not wrong, but it also does not go far enough. The crucial aspect that we believe to be missing is some kind of reference to a *permanent* change. In fact, the way psychologists have defined learning for decades represents what we see as the most promising and valuable definition for directing our efforts at professional learning for (and in) schools. That is, "learning is the process through which experience causes *permanent* change in knowledge or behaviour" (Woolfolk, Winne, & Perry, 2012). Adding the "permanence" criterion raises the bar on what counts as *real* learning, and it means that there are a plethora of things out there that are typically considered to