Multiple initiatives, multiple challenges: The promise and pitfalls of implementing data

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ABSTRACT

Data driven decision making has become a popular reform effort across the globe. New issues are arising with respect to data use as educators move toward teaching students 21st century skills, as the implementation of Common Core standards begins in the US, and as other efforts are undertaken to make learning more student centered. This article reports findings from a year-long case study of a US elementary school that placed data use at the core of its platform for school reform. The goal of the study was to determine how teachers implemented data use in concert with other reform initiatives. Interviews with educators, as well as observations of teacher team meetings, revealed that data-informed instructional planning occurred primarily in language arts and math, and not in other subjects. The requirements to implement multiple initiatives created many tensions that decreased teachers' ability and motivation to use data. How and when teachers used data was the result of a broader set of policies and structures at the federal, district, and school levels, as well as the capacity of the teachers and principal at the school. Implications for research and practice are discussed.

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Introduction

Increasingly, government agencies across the globe are attempting to motivate educators to use data as a vehicle for educational improvement (Earl & Fullan, 2003; McPhee & Patrik, 2009). An emphasis on data use has escalated in the Netherlands, US, Canada, South Africa, New Zealand, and other countries (Schildkamp & Lai, 2012). In the US, data-driven decision-making (DDDM) was a major feature of the American Recovery and Reinvestment Act of 2009 and of the controversial Race to the Top competition. At all levels of the system, educators are attempting to respond to these policy demands.

Moving data into useable knowledge to change practice, however, has significantly challenged principals and teachers. Prior research has shown that at the school level, principals play a critical role in motivating teachers to use data and in providing supports that facilitate data use (Earl & Katz, 2006; Ikemoto & Marsh, 2007; Levin & Datnow, 2012; Mandinach, Honey, & Light, 2006). Yet some principals lack the knowledge to guide teachers in data use, and many teachers have not had sufficient training in how to understand and use data to inform their instructional

decisions. As such, data literacy among educators remains a persistent concern.

Moreover, in the US, new issues are arising with respect to data use as educators move toward teaching students 21st century skills, implementing the new Common Core standards, and undertaking other efforts to make learning more student-centered. These initiatives will involve activities that engage students in critical thinking, generating new knowledge, and learning through project-based work – all skills which are not easily measured by traditional assessments. As a result, what counts as "data" will become increasingly wide-ranging (Levin, Datnow, & Carrier, 2012). Thus, getting teachers together to discuss evidence of student learning and the development of new forms of assessment would appear to be a critically important component of this shift. We are now not only asking teachers to use data to inform decision making, but also to use more complex forms of data and to implement new instructional strategies.

Other challenges arise from the fact that efforts to implement data-driven decision-making sometimes do not account for the culture and structure existing within a school. Like other reforms, data use is layered on top of already established routines and relationships, and some run counter to evidence-informed practice. Spillane (2012) suggests that organizational routines are put in place, often with scripts to guide discussions about data and to transform teaching and learning. However, the "performative aspect of organizational routines," that is, how a routine works

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in daily practice and is enabled and/or constrained by "institutional, historical and cultural situations" (p. 125) is usually not addressed. We know little about these dynamics.

As a recent analysis of a collective body of research on DDDM points out, we are faced with a "blunt understanding of data use" (Moss, 2012). The remedy, according to Coburn and Turner (2012), is to conduct investigations into the practice of using data. These authors urge that such investigations include a closer focus on the micro interactions of those involved, as well as on the degree to which participants are embedded in a context that is influenced by macro-level policies and structures within the educational system. We undertook such an investigation.

This article reports findings from a year-long case study of the actions of a principal and teachers at Orchid Heights,[1] a US elementary school that has placed data use at the core of its platform for school reform. The primary research questions that guided this study were:

• How do teachers implement data use in tandem with other reform initiatives?
• What are the actions taken and the challenges faced by educators in moving data into useable knowledge to inform instruction?

Using a sociocultural perspective, we focused on teachers' actions and beliefs, as well as on the institutional context in which they worked, in order to understand how the educators at Orchid Heights constructed data use. We found that the formally scheduled grade-level team meetings, which were designed to allow for discussions of data and lesson plans, did not always produce the intended results. District benchmark data were used primarily to build students' language arts and math skills and not for the purposes of planning social studies and science lessons. This is not surprising since students were assessed in these areas and not others. This meant, however, that the use of this data to inform instructional decision making was limited to language arts and math, rather than used across the curriculum as intended. Moreover, requirements to implement multiple other educational initiatives at the school created tensions that undercut teachers' ability and motivation to more fully integrate data use into their daily practice. How and when teachers used data was determined by the interaction of multiple factors, including a broad set of policies and structures in place at the federal, district and school levels, as well as the capacity of the teachers and principal.

The remainder of the article is structured as follows: we begin with a review of the relevant literature and then turn to an explanation of the methodology and description of the district and school setting. After a detailed report and discussion of the findings, we present conclusions and consider their implications.

Review of the literature

Prior research on (1) data use and the role of teacher collaboration and (2) the challenges of balancing multiple reform demands and building capacity provided the framework for our investigation. Taken together, studies in these two areas helped expand our awareness of the kinds of issues principals and teachers at Orchid Heights faced in their efforts to use data to inform instructional decision-making.

Data use and the role of teacher collaboration

Broadly speaking, data-driven decision-making is the process by which administrators and teachers collect and analyze data to guide educational decisions (Ikemoto & Marsh, 2007). While each locale may take a different approach to data use, the underlying belief is that carefully analyzing evidence about student learning,

such as using standardized test score data and/or student work, will allow teachers to target instruction toward students' individual needs (Mandinach & Honey, 2008). The theory is that by working together, teachers will be able to assist each other in making sense of the data, engaging in joint action planning, and sharing instructional strategies.

Overall, it is clear from prior research that evidence of student learning needs to be actively used to improve instruction in schools. Research on high-performing districts reveals that such districts integrate the examination of data and evidence-informed decision making into daily school and district processes (Foley & Sigler, 2009; Leithwood, 2008). Many districts have invested in management information systems, benchmark assessments, and professional development to build expertise and capacity at the school level (Datnow, Park, & Wohlstetter 2007; Hamilton et al., 2009; Supovitz & Taylor, 2003). Some districts have also contracted with external agencies and consultants to assist in their capacity-building efforts district-wide (Marsh et al., 2005).

Providing structured time for collaboration is one of the ways that many districts and schools attempt to support teachers' use of data (Honig & Venkateswaran, 2012; Mandinach & Honey, 2008; Means, Padilla, & Gallagher, 2012). In fact, a majority of high data use districts provide structured time for collaboration (Marsh, 2012; Means et al., 2010). Opportunities for cross-school interaction are a key ingredient of support for data use (Marsh, 2012).

The presence of a leader who promotes a culture of inquiry within teacher work groups can aid in making conversations about data more productive (Horn & Little, 2010; Young, 2006). This is in part because the knowledge within and among teacher groups can vary widely, leading to uneven results. For example, teacher teams with limited expertise can misinterpret or misuse data, or work together to perpetuate poor classroom practice (see review by Daly, 2012). On the other hand, groups with a great deal of collective expertise can be much more generative of learning (Horn & Little, 2010).

Even with the scaffolds of support that many districts and schools now provide, the process of engaging in DDDM has proven to be quite complex. Data from assessments may show patterns of student achievement, but they do not tell teachers what to do differently in the classroom (Dowd, 2005; Supovitz, 2009). Moreover, some argue that the data from large-scale assessments may be useful for school and system planning, but they are less useful at the teacher or student level (Rogosa, 2005; Supovitz, 2009). The use of assessment data can be powerful at the teacher level, but a great deal depends on the level of inquiry that occurs around the data.

Multiple reforms and capacity building for change

As we noted above, data-driven decision making is often implemented as one of numerous reform initiatives in a school or district. This is not surprising, as many educators and scholars see data use as part of a larger process of continuous improvement. Thus, schools may be implementing various reforms (e.g., implementing small learning communities, adopting a new math program) and using data to track their progress toward the goals of these initiatives.

Reform efforts can be planned in ways that are mutually supportive and cohere around a common goal. Prior research suggests, however, that schools sometimes face challenges balancing multiple reform demands. This is especially the case when reforms do not cohere and result in conflicting directions of change. Almost fifteen years ago, school change expert Michael Fullan (1999) noted that the biggest problem facing schools was fragmentation and overload. Even with the move toward district coherence in the past decade, many schools still struggle with

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[1] Pseudonyms are used throughout to protect anonymity.