Data Use in Title I Schools

Jeffrey C. Wayman, Ph.D.
Kerry Moll, Ed.D.

Department of Educational Administration
The University of Texas at Austin

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Abstract

There is a growing research base about the use of data for educational improvement. Unfortunately, nearly no data use research has been conducted in high-poverty settings. The present study responds to this need by providing a mixed-methods, comparative study on the data use practices of high- and low-achieving Title I schools. Preliminary findings indicate many similarities in the ways that high- and low-achieving Title I schools use data, but also some distinctions in terms of leadership, use of Title I funds, and culture of inquiry. These results will be discussed in light of prior research; implications for leadership in high-poverty settings will also be presented.

Address requests for information to Jeff Wayman, jwayman@austin.utexas.edu

Introduction

Although schools and districts have collected educational data for years, the use of such data has recently changed because of accountability legislation and the advent of efficient technology to store and organize student data (Wayman, Stringfield, & Yakimowski, 2004). Consequently, research base on educational data use is growing, but is yet young.

Through this research base, we are learning more about effective teacher use (Ingram, Louis, & Schroeder, 2004; Wayman & Stringfield, 2006), effective principal leadership (Lachat & Smith, 2005; Wayman & Stringfield, 2006), and effective district use (Datnow, Park, & Wohlstetter, 2007; Supovitz & Klein, 2003; Wayman, Cho, & Johnston, 2007).

Many researchers believe that effective data use holds great potential for educating underprivileged youngsters, arguing that arming teachers, schools, and school systems with more information on the individual learning needs of individual students will result in effective education tailored to student needs (Lachat & Smith, 2005; Stringfield, Reynolds, & Schaffer., 2001; Wayman, 2005; Wayman & Conoly, 2006). There is some empirical evidence to support these arguments: Wayman and Conoly (2006) described how schools in one urban setting were using data to improve equity issues, Lachat & Smith (2005) showed how data use helped high school teachers in an impoverished urban setting, and other research has shown data to be helpful in improving educator attitudes toward the learning abilities and learning styles of at-risk students (Armstrong & Anthes, 2001; Massell, 2001).

While this research is encouraging, no comparative research has been conducted to suggest what data practices work best in a high-poverty context. Only two of the previously-described studies were conducted in urban, high-poverty settings (Lachat & Smith, 2005; Wayman & Conoly, 2006) and neither provided comparison of high achieving and low

achieving schools. Consequently, it is necessary to provide a study that not only examines the effective use of data in high-poverty areas but provides a comparison between schools that achieve well in this context and those that do not.

The present study responds to these needs by providing a mixed-methods, comparative study on the data use practices of high- and low-achieving Title I schools. The present study is guided by two research questions:

(1) How do educators in Recognized Title I schools use student data for school improvement, and do these methods differ from educators in the comparison group?

(2) What needs do educators in Recognized Title I schools express regarding student data use, and are these needs different from educators in the comparison groups?

Methods

Selection of Schools

This study was conducted in a large urban district in Texas, serving between 75,000 and 100,000 students. From the high-poverty schools in this district, two groups of schools were identified for comparison: a high-poverty, high-achieving group, and a high poverty, low-achieving group. "High poverty" was defined by Title I status.

Six schools participated in the study. Three schools were classified as "high-achieving, high-poverty" and three were classified as "low-achieving, high-poverty." The high-achieving group was randomly selected from Title I schools classified as "Recognized," based on state achievement test scores (TAKS). The low-achieving schools were selected by identifying the 10 lowest-performing Title I schools in the district (based on TAKS scores) and matching three of these schools by proximity to the high-achieving schools.

Data and Analytic Procedures

Both qualitative and quantitative data were collected for the present study. Qualitative data were collected by conducting one focus group in each school. Participants consisted of the principal, at least three teachers, and any other individuals that the principal felt would contribute to our understanding of data use in their schools. Focus groups were conducted using a semi-structured protocol that addressed issues surrounding data, data use, and resulting practice. All focus groups were recorded and transcribed. In all, 33 individuals participated in our focus groups, including 6 principals, 1 assistant principal, 20 teachers, and 6 other roles (e.g., special education, literacy coach).

Quantitative data were collected through anonymous, online administration of items from the Use and Perceptions of Educational Data Survey (Wayman & Supovitz, 2007), with alpha reliabilities previously reported by Wayman et al. (2007). Items selected for use in this study formed 3 scales: (1) The Instructional Uses of Data scale consisted of six items that asked how often the participant used data for varied instructional purposes (e.g., setting learning goals for individual students and tailoring instruction). (2) The Professional Data Practices scale was a four-item scale assessing varied data uses as they applied to professional practice, such as adjusting practice with data and collaboration about data. (3) The Supportive Computer Systems scale described aspects of computer systems that support data use. It consisted of three items, such as whether these systems were appropriate and user friendly. In each study group, 56 teachers completed the survey.

Qualitative analytic methods were used to systematically document qualitative interviews and analytic process. A priori themes were used to analyze qualitative data and these themes were allowed to evolve as analysis progressed (Miles & Huberman, 1984). T-tests were used to

describe the relationship between the treatment variable (teaching in a high/low achievement school) and the data use scales. (Note: although teachers are nested within schools, the use of Hierarchical Linear Modeling is inappropriate for only 6 schools).

Results

Analysis of the qualitative and quantitative data led us to group our findings into four themes: (1) Individual perceptions as data users, (2) Uses of data, (3) Leadership, (4) Use of Title I resources. As indicated in the data, both groups of schools were frequently similar in their responses – particularly in the quantitative data. There were also differences that set both groups apart.

Individual Perceptions as Data Users

Individuals in both conditions perceived themselves as data users. In both high- and low-achieving schools, the faculty and administration were making use of data and were able to describe various forms of data use. Their personal statements and descriptions about themselves as data users were similar, regardless of what type of school in which they taught.

Additionally, neither scale that dealt with data use and practice indicated significant differences between groups. Means were virtually identical on the Instructional Uses of Data scale, where teachers in low-performing schools responded an average of .02 higher on a 4-point scale ($p=0.849$), and on the Professional Data Practices scale, where this difference was .06 ($p=0.536$).

While individuals in the two groups were similar in their stated perceptions about data use, we interpreted our data to hold implicit evidence that individuals in high-achieving schools

actually internally viewed themselves as more advanced data users than did individuals in low-achieving schools. As evidence, we note that teachers in high-achieving schools talked more about data use in their interviews. They also cited more types of data used and involved more people in data use.

The data also indicate differences between the two groups in their cultures of inquiry. Two high-performing schools saw data use as part of their school identity, while nobody in the low-performing schools characterized their school that way. Comments from educators in the high-performing schools were generally more enthusiastic toward data use, illustrated by the fact that educators in these schools were more likely to see data use as part of the fabric of their work. Teachers in high-performing schools were also collaborating more, both formally and informally.

Uses of Data

There were many similarities between groups in the way data were used. For instance, we noted that data use was very difficult for educators in all of our schools. Descriptions of how data use was conducted were consistently highlighted by the amount of extra time these educators had added to their days. In all schools, educators were taking time processing, entering, and managing data – time that was typically added as extra time in their days, rather than replacing other tasks or working data use (although high-performing schools were looking for ways to work it into the fabric of their day). Although this load had recently been lightened by the implementation of a new district-built data system, many educators were still resorting to amassing notebooks and building paper representations of data. Still, educators in our study did not complain about the extra work, all noting the benefits their students were realizing.

In both conditions, grouping students for instruction was the primary use of data. We consistently heard descriptions of how students were grouped and re-grouped throughout the semester and when asked how they used data, the teachers in each school initially listed various methods to group students. Only after discussing grouping did teachers begin to discuss how data were used to work with individual students. These examples were not as plentiful as those for grouping students. In addition, teachers in both groups were similar on the two scales that dealt with data use and practice (see "perceptions" above).

One area where the two groups contrasted was in use of computer data systems. The district had recently begun to implement a locally-built data system. This system was populated with locally-developed assessments, entered at the building level by teachers. These assessments, given once every eight weeks, were some of the primary forms of data cited by teachers. In the high-achieving schools, we heard more use of this system for extracting, aggregating, and disaggregating data. Survey data concurred with focus group data: individuals in high-performing schools responded an average of .30 points higher on a 4-point scale than teachers in low-performing schools ($p=0.002$).

Leadership

An area where marked differences were noted between the two groups was in leadership, where high-achieving schools were led by principals who were more invested in data use than their counterparts in the other schools. The principals in these schools were personally more active in data use (i.e., used data themselves more) than principals in the low-performing schools. Principals and faculty in high-performing schools also cited more instances of principals interacting with faculty about data. Focus group conversations in these schools also

turned more toward helping individual students than did conversations in low-performing schools.

Principals in high-achieving schools had also implemented a greater quantity of structural supports that enable teachers to use data. For instance, teaming was common across all schools, but we observed more formal teaming structures in the high-performing schools. The only school where teachers were forward and articulate in describing how data helped them change practice was a high-performing school; our data indicated this was a direct result of the clear set of expectations and vision set by the principal.

While structures to support data use were more common in high-performing schools, data use in these schools was also quite dependent on the individuals serving as principals. Even though a fair amount of the data use in these schools occurred without direct principal involvement, it was clear that the principal had been involved in nearly every initiative in some fashion. We interpreted our data to suggest that data use might not continue to advance in these schools if the principal no longer served as principal.

Finally, we note that the high-performing schools in our study were not successful *because of* data use. Instead, these schools were successful because of strong leadership that had chosen to employ data for school improvement.

Use of Title I Resources

Our data also indicated differences in the comparison groups regarding how Title I funds were used. All the schools in our study reported using their Title I funds mostly to fund more staff positions. However, all of the high-achieving schools had used Title I funds to fund personnel that served support functions for data use; none of the low-achieving schools did.

Educators in high-achieving schools were positive in describing the assistance these positions offered with their data use. They were able to offer many examples of specific duties that these support educators performed, such as printing reports and aggregating data, but only sporadically helping change data to practice.

Discussion

The findings from this study are interesting to view in light of prior research. For instance, descriptions of how data use was conducted were consistently highlighted by the amount of extra time these educators had added to their days. This phenomenon is not inconsistent with the results of other studies of data use (e.g., Supovitz & Klein, 2003; Wayman et al., 2007; Young, 2006). Still, this condition has been noted as avoidable in other studies (Lachat & Smith, 2005; Wayman & Stringfield, 2006).

Across all schools, educators did not view the extra work as greatly burdensome because their load had been recently lightened by the implementation of a new district-built data system. Data systems have been shown to greatly facilitate educator data use (Lachat & Smith, 2005; Mieles & Foley, 2006; Wayman & Stringfield, 2006) and the educators in our study were enthusiastic about the new capacities afforded by their system. While their burden had been reduced by this system, these educators were still doing a lot of work – more work than educators with more efficient systems (Lachat & Smith, 2005; Wayman & Stringfield, 2006; Wayman et al., 2004). Much of their time was taken up by entering data into the system and there were a number of system limitations that still caused them to do a great deal of their data use with pencil and paper. Based on prior research, we believe the educators in these schools could have been making better use of their data systems by employing the systems to do some

work they were doing by hand. In addition, the district could provide better support to the schools by offering a wider array of available data and reports, and by implementing data entry methods that did not involve teachers (Wayman et al., 2004).

One clear example of differences between the high-performing and low-performing schools was the marked differences in building leadership for data use. This is hardly surprising, given that nearly every study on school data use has highlighted the importance of the principal (e.g., Datnow et al.., 2007, Supovitz & Klein, 2003; Wayman & Stringfield, 2006).

Principals in high-achieving schools had implemented a greater quantity of structural supports that enable teachers to use data. For instance, teaming has been shown to be a valuable strategy for data use (Chen, Heritage, & Lee, 2005; Lachat & Smith, 2005; Wayman & Stringfield, 2006) and was common across all schools, but we observed more formal teaming structures in the high-performing schools. The only school where teachers were forward and articulate in describing how data helped them change practice was a high-performing school; our results indicate this was a direct result of the clear set of expectations and vision set by the principal. Such vision has been shown to be important in effecting and sustaining data use (Datnow et al., 2007; Supovitz & Klein, 2003; Wayman et al., 2007).

Still, we were concerned that data initiatives in high-performing schools depended very heavily on the efforts of these principals. We fear that data initiatives dependent on one person's leadership may not be sustainable, as noted by Stringfield, Reynolds, & Schaffer (2001). Other work has suggested that the establishment of formal structures is critical to the success of a data initiative (Wayman et al., 2007; Wayman, Brewer, & Stringfield, 2009), so the presence of some structures in the high-performing schools is a positive. Still, many of these structures are

informal; Wayman et al. (2009) note the danger of not formalizing and articulating data use structures.

Finally, our data also indicate differences in the comparison groups regarding how Title I funds were used. All of the high-achieving schools had used Title I funds to fund personnel that served support functions for data use; none of the low-achieving schools did. Educators in high-achieving schools were positive in describing the assistance these positions offered with their data use. While the mere presence of these positions does not ensure success, previous studies have offered examples of how such positions can be effectively used in the service of data use (Chen et al., 2005; Datnow et al., 2007; Lachat & Smith, 2005).

A Final Word

In conclusion, we will highlight a specific result from our study: the success of these high-performing schools did not seem to stem from data use. Rather, we believe the success of these school stemmed from good leadership. These effective leaders saw data as a valuable tool in improving teaching and learning. This result underscores an important point: data and the use of data are no solution or panacea by themselves. Instead, they are a tool that can be used by effective educators to glean more information – and, ultimately, use that information to improve student learning.

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