

Reducing Barriers to Educator Data Use

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Data are a valuable tool for educational decision-making and school improvement.¹ Educational data (e.g., student assessment data from current and previous years or other student data such as absenteeism and classroom behavior) are important in guiding instructional strategies such as reflecting on teaching practices, individualizing instruction, setting learning goals, and communicating with parents and community regarding student progress. Likewise, data are an important resource in directing school reform efforts by enabling such activities as evaluating the quality of educational programs and services, assessing learning equity for different student populations, generating approaches to curricular development, or identifying areas for staff development.

Despite these benefits² and federal educational policies driving educators to use data,³ practicing effective data decision-making is a challenge. The challenge, however, does not stem from a lack of data collection and availability, as research has shown that there is an abundance of data collected and made available to educators.⁴ Thus, if data availability is not the primary obstacle to effective data-based decision making, what barriers do educators face in effectively using the data made available to them?

We surveyed all district administrators (N = 174), school leaders (N = 1,194), and classroom teachers (N = 41,080)⁵ in one

Midwestern state to determine the types of data they had access to, how often they used these data, and the obstacles they believed hindered their ability to use data more frequently or with more success than they do currently.⁶

Following Schildkamp & Kuiper (2010), we define data-informed decision-making as “systematically analyzing existing data sources within the school, applying outcomes of analyses to innovate teaching, curricula, and school performance, and implementing (e.g., genuine improvement actions) and evaluating these innovations.”⁷ We provided survey respondents with a list of specific data sources to reference as they answered the survey items:

- National and state achievement test data (e.g., Stanford 9, state test, ACT, SAT)
- Formal assessments (e.g., district benchmark assessments)
- School assessments (e.g., quizzes, grades, assignments)
- Other student data (e.g., disciplinary information, ELL status, supplementary education participation, student retention)
- Other district- or school-wide data (e.g., survey data, classroom walkthrough data)

This brief summarizes the types of obstacles that each type of educator reported as hindering their ability to use data to inform their decision-making, and it concludes with suggested steps for how to increase effective data use among these stakeholders.

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Barriers to Data Use

Although the educators reported that there was a lot of student data collected at the school and district levels, respondents commonly cited a number of barriers to their ability to make data-informed decisions at their schools, including issues related to communication or sharing of data systems or data across departments or general ability to access the data systems (Table 1). However, the two barriers cited most often were insufficient time to work with the data and inadequate technical skill of school and district staff in knowing how to use data effectively for decision-making. We discuss each of these in more detail below.

Insufficient Time

All three types of educators identified time as a major barrier to data use. The lack of time was an issue both for collaboration as well as the individual review of data. For collaboration, educators reported collaborating infrequently with colleagues on data use at the school and district levels. The greatest amount of time teachers reportedly spent on school-level collaboration was approximately once a month, working with the electronic data system or refining lessons or strategies based on student data. Teachers reported collaborating with colleagues at the district level even less. On average, teachers reported reviewing data with teachers across schools in their district only a few times a year.

Teachers also reported little collaboration with their principal in using data. Elementary teachers reported more frequent collaborations (about once a month); high school teachers reported collaborating with their principal only a few times a year (Figure 1).

For their part, principals reported only somewhat greater levels of collaboration

Table 1. Reported Barriers to Data Use.

	Major Barrier (> 75% of respondents)	Minor Barrier (50%–75% of respondents)
Teachers	<ul style="list-style-type: none"> • Time for data-informed decision making activities 	<ul style="list-style-type: none"> • School staff-preparation for decision making • Technical skill of support staff • District leadership support for data-informed decision making • Sharing data across departments within a district • Policies that provide direct access to data system
Principals	<ul style="list-style-type: none"> • Time for school staff to conduct data-informed decision making activities 	<ul style="list-style-type: none"> • School staff-preparation on how to use data for instructional decision making • Technical skill of school staff to access or use electronic data systems • Communications or sharing of data systems • Communication or sharing of data across departments within the district
Administrators	<ul style="list-style-type: none"> • Technical skills of school staff to access or use electronic data systems • Time for school staff to conduct data-informed decision making activities 	<ul style="list-style-type: none"> • School staff-preparation on how to use data for instructional decision making • Communications or sharing of data systems • Student performance data in specific subject areas

than teachers. As shown in Figure 2, approximately 40% of principals reported collaborating with district administrators a few times a year, 26% reported collaborating once a month, and 24% reported collaborating more frequently.

In addition to time for collaboration, the data also suggest that teachers could use more time to individually evaluate data. Although teachers generally rated data as “somewhat” to “very” useful, only elementary school teachers reported using data at least once a week to inform their instruction. High school teachers, however, reported use closer to 2–3 times a month on average. Middle school teachers were in-between these frequencies but closer to also 2–3 times a month on average.

Inadequate Technical Skills Support for Data Use

Of teachers surveyed, 67% said that they had a data expert at their school, but only

one teacher at each of a majority (63%) of schools said that there was a data expert while others did not. This may suggest that teachers at these schools were not uniformly made aware of the data expertise offered, or that such expertise was offered only informally. In either case, teachers with limited technical skill at a great number of schools may not have sufficient support to interpret and use data.

The majority of teachers and principals reported receiving professional development on using data for effective decision-making.⁸ Generally, elementary and middle school teachers found more value in the professional development activities than did high school teachers; the mean for elementary and middle school teachers was between “somewhat” and “very” useful, while the mean for high school teachers was only “somewhat” useful.

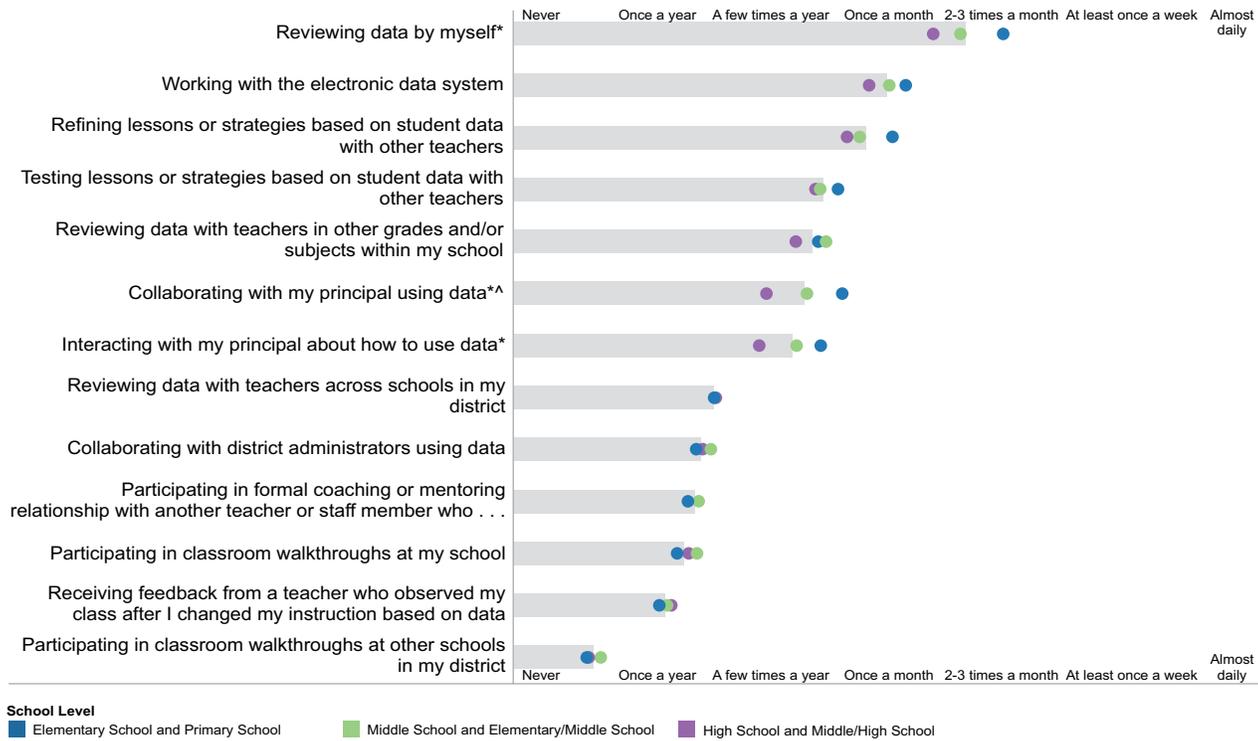


Figure 1. Teacher Collaboration with colleagues by school level

Note: Superscripts were used when the effect size was at least 0.20. * = ES vs. HS; ^ = ES vs. MS; ^ = MS vs. HS. A gray bar represents the mean teacher response across school levels. A colored point represents the mean teacher response for a given school level.

However, compared to principals, the teachers found the professional development less useful. Nearly two-thirds of the principals found nearly all of the professional development activities “very”

or “extremely” useful. Examples of the activities rated highly by principals included how to use data to inform instruction and school improvement, and how to lead teachers to use data

effectively.⁹ The results indicate that professional development on data use may need to be reexamined to make it more valuable for teachers.

Steps to Eliminate Barriers Associated with Time or Technical Skills Support

We offer several suggestions for eliminating barriers to effective data use among educators:

1. *Create more time for collaboration.*

Schools and school district leaders can rethink the school day to include time for collaboration. A recent Center for American Progress report highlights five innovative schedules that allow for additional teacher collaboration time without adding significant budget costs.¹⁰

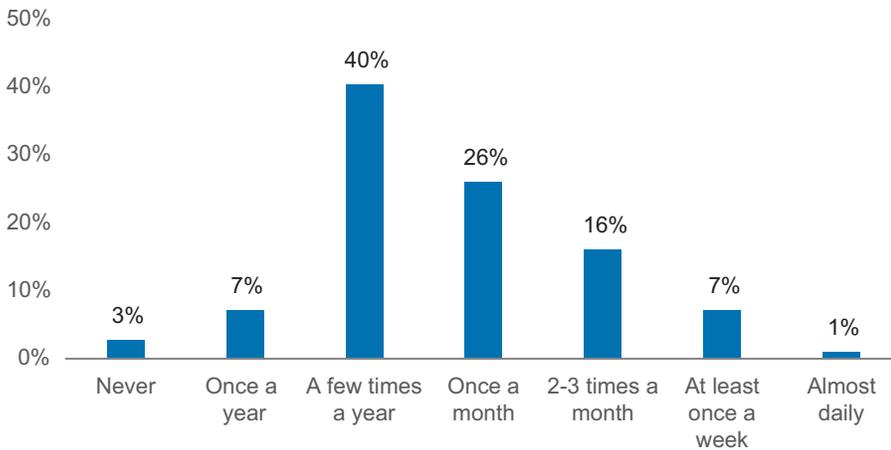


Figure 2. Principals' reported frequency of collaboration with district administrators in using data.

2. *Develop professional learning communities.*

Professional learning communities (PLCs) are groups of educators (either within a school or across a district) that work collaboratively on a regular basis on instructional and school improvement, with a focus on using data to evaluate their efforts.¹¹ All teachers should be part of PLCs for their content area, either within or across grades.

3. *Give educators the proper tools to aid data use.*

District leaders should provide data in a form that is understandable and, to the extent possible, easy to use. If possible, questions that educators are likely to want the data to answer should be anticipated ahead of time so that the relevant data are readily accessible. Similarly, training educators on the use of data protocols may help to guide them in using the data.¹²

4. *Require assessment literacy as part of teacher preparation.*

Given the importance of the data yielded by assessments—either state assessments or teacher-created assessments—and the amount of time educators spend on assessment data, teacher preparation programs must provide teachers with comprehensive instruction on how to create and use assessments for instruction and evaluation.¹³ States should consider requiring an assessment and data literacy course as part of teacher certification.

5. *Improve the usefulness of teacher professional development on data use.*

As mentioned, teachers are receiving professional development related to data use but are finding little value in it. Because teachers are already pressed for time, district leaders should make more effort to ensure that professional development on data use is targeted and useful for teachers. ■

Notes

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- Schildkamp, K., & Kuiper, W., "Data-Informed Curriculum Reform: Which Data, What Purposes, and Promoting and Hindering Factors." *Teaching and Teacher Education* 26 (2010): 482–496.
- Wayman, J. C., Cho, V., Jimerson, J. B., & Spikes, D. D., "District-Wide Effects on the Data Use in the Classroom." *Education Policy Analysis Archives* 20, no. 25 (2012). <http://epaa.asu.edu/ojs/article/view/979>.
- Little, J. W., "Understanding Data Use Practice among Teachers: The Contribution of Micro-Process Studies," *American Journal of Education* 118 (2012): 143–166.
- Coburn, C. E., & Turner, E. O., "The Practice of Data Use," *American Journal of Education* 118 (2012): 99–111; Wayman, et al., "District-wide Effects."
- Every Student Succeeds Act, 2015; No Child Left Behind Act of 2001, Pub. L. No. 114-95, § 114, Stat. 1177 (20015-2016).
- Over half of the teachers said that they had access to at least 16 different types of data ranging from assessment data (school, district, state, and normed) to student behavior data to student grades and work to enrollment and retention data. Despite having access to the data, the use of them for decision-making were limited. Moore, R., *Teacher Level Data Availability and Usefulness for Teachers* (Iowa City, IA: ACT, 2016). See also Little, "Understanding Data Use Practice Among Teachers."
- Approximately 55% (n = 121) of district administrators, 34% (n = 451) of principals (representing 84% of school districts), and 20% (n = 11,195) of teachers (representing 97% of school districts) completed the survey.
- The survey was conducted in 2012. Information about the methodology can be found in each of the three reports: District Administrators' Use of Data, <http://www.act.org/content/dam/act/unsecured/documents/R1659-administrators-use-of-data-2017-12.pdf>;
- Principals' Use of Data, <http://www.act.org/content/dam/act/unsecured/documents/R1660-principals-use-of-data-2017-12.pdf>;
- Teachers' Use of Data, <http://www.act.org/content/dam/act/unsecured/documents/R1661-teachers-use-of-data-2017-12.pdf>
- Schildkamp & Kuiper, "Data-informed Curriculum Reform."
- In the last academic year teachers reported the following amounts of professional development related to data use: 36% four hours or less; 26% four to eight hours; 16% nine to 16 hours, 9% 17 to 24 hours, and 13% above 24 hours. Among principals in the last academic year, 32% reported receiving between four and eight hours of professional development and 27% reported having between nine and 16 hours of professional development.
- Although principals reported how to lead teachers to use data, approximately 75% reported receiving professional development, making it the fifth most popular professional development activity related to data use. It may be that principals need additional training in leading teachers to use data effectively for teachers to find the professional development activities useful.
- Benner, M., & Partelow, L., *Reimagining the School Day* (Center for American Progress, 2017), available at <https://www.americanprogress.org/issues/education/reports/2017/02/23/426723/reimagining-the-school-day/>
- DuFour, R., "Schools as Learning Communities," *Educational Leadership* 61 no. 8 (2004): 6–11, available at <http://www.ascd.org/publications/educational-leadership/may04/vol61/num08/What-Is-a-Professional-Learning-Community%2%A2.aspx>; DuFour, R., & DuFour, R., *Learning by Doing: A Handbook for Professional Learning Communities at Work* (Bloomington, In: Solution Tree Press, 2013).
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- Popham, W. J., "Assessment Literacy Overlooked: A Teacher Educator's Confession," *The Teacher Educator* 46, no. 4 (2011): 265–273.