Using Data to Improve Schools from the Ground Up
THE BIG PICTURE

The world generates 2.5 quintillion bytes of data every day, and more than ninety percent of the world’s data was reportedly produced in the past five years alone. While only contributing a small fraction to the quintillions of daily data points, the nearly 100,000 public elementary and secondary schools across the United States “generate reams of data.” As the Hechinger Report’s Tara Garcia Mathewson wrote this year, “There’s data from reading programs, math programs, state tests, daily quizzes, student history and more, each one a single puzzle piece that could be linked to other pieces to create a unified picture, but that, more often than not, stands alone” — or remains unused. In 2010, the U.S. Department of Education released a study titled “Use of Education Data at the Local Level: From Accountability to Instructional Improvement,” which concluded that data was having little to no impact on classroom instruction. It cited educators’ perceived lack of time, difficulty with using data systems, perceptions that data was not useful, and restrictive district curriculum policies as major reasons for the disconnect between data and classroom practices.

Why has the leap from data collection to utilization been so challenging? A 2018 study from the Data Quality Campaign found that 57 percent of teachers said they don’t have time during the school day to review data. The 2017 version of the same report found that 67 percent of teachers also said they were not satisfied with the data tools available to them and only 36 percent of parents thought they had easy access to the information necessary for them to help their child get a good education.

Against this backdrop, states across the country are taking measures to improve district- and school-level capacity to use and analyze data effectively. In approved plans submitted as part of the Every Student Succeeds Act (ESSA), 49 states have committed to providing better training and supports for districts and schools to utilize data. Thirty-eight states have committed to investing in data tools that will make monitoring and analyzing data easier for educators on the ground. States like Washington are also building state education agency partnerships to ensure data analysis informs policy to improve outcomes for students.

Thus, a strong current of enthusiasm and political will for increasing educators’ capacity to use data in school settings has developed, and evidence of the promise of data for improving instruction and learning continues to mount. At the same time, new resources designed to build educators’ capacity for analyzing and applying data are emerging. Organizations and initiatives including the Data Quality Campaign, The National Association of Elementary School Principals, and the University of Chicago’s To&Through Project are producing resources designed to help educators put data into practice.

NEW UCHICAGO KNOWLEDGE

Chicago provides a particularly valuable case study for thinking about the challenges we face as a nation in creating large-scale, equitable improvements in students’ outcomes. In the past decade or so, the Chicago Public Schools (CPS) district has seen tremendous improvement on the most important indicators of student success. Between 2006 and 2017, CPS saw a 28 percentage-point rise in the proportion of its freshman on-track to graduate from high school, with the greatest increases among Black and Latino males. High school graduation rates have increased by 18 percentage points, with ACT scores and GPAs improving at the same time. Most impressively, even with thousands of additional high school graduates, CPS’s four-year college enrollment rate rose by 14 percentage points, and the overall proportion of high school freshmen who are projected to earn a bachelor’s degree has doubled in the last decade.

There is an important story to be told about the role that data played — and continues to play — in these kinds of improvements. Of course, it would be a mistake to think that the mere presence of data provided educators with all they needed to chart such a remarkable course of improvement. This decade of improvement in Chicago relied on many supports and conditions other than data, and not all efforts to apply data to improvement efforts during this time period were successful. Not all indicators have taken root in the life of schools. Not all educators welcomed data-driven improvement efforts with open arms. And not all data systems gave educators the tools needed to guide their efforts and solve their problems of practice. This era of improvement in Chicago has, however, generated a particular kind of approach to using data in Chicago’s schools — an approach that responds to the drive to make the field of education more data driven, while also acknowledging the human networks and systems that produce results.
Researchers and practitioners from the University of Chicago Consortium on School Research (UChicago Consortium), the Network for College Success (NCS), and The To&Through Project explain this “practice-driven” approach to data in *Practice-Driven Data: Lessons from Chicago’s Approach to Research, Data, and Practice in Education*. The UChicago Consortium has conducted more than two decades of research on CPS, and helps build capacity for school reform by identifying what matters most for school improvement and student success. NCS helps build CPS high school leaders’ capacity to respond to emerging research and data with actionable strategies for improvement through ongoing professional learning. The To&Through Project is an initiative that utilizes NCS and the UChicago Consortium as partners to integrate research, data, and professional learning to move more students to and through high school and college. This combination of research, data, and professional learning has yielded significant improvements in CPS students’ educational attainment, as well as some important lessons with implications for educators in Chicago and across the country. These lessons are:

1. **Prepare: Build Capacity to Facilitate Hard Conversations.** Using data to guide school improvement means that the conversation around the data is just as important as the data itself. For data to improve student outcomes, educators must be able to use data in conversations about their practice. Our work in Chicago has underscored the importance of building educator capacity to have hard data conversations that clarify what the problem is and what the solutions might be. This requires investing in the capability of one or a few people at a school to lead data-driven conversations, and it also requires strong school leadership to support a culture of data-driven improvement.

2. **Focus: Prioritize Research-Based Indicators.** In a relatively short period of time, CPS, like a great many school districts across the country, moved from a system in which educators were thirsty for any data to one where they could drown in data if they were not careful. The proliferation of data meant educators needed to find ways to focus their discussions on the most important data. It is the role of researchers to work with educators and develop high-leverage indicators that can help them focus on what matters the most for future student outcomes. Data system designers can then integrate these indicators into...
the data that reaches schools. Finally, educators and school leaders can then incorporate this data into their ongoing work, using these indicators to track progress and examine patterns both within and across schools.

3. **Make Meaning: Develop Shared Ownership over the Implications of Research.** When using data for improvement, accessible research findings give school and district leaders the opportunity to infuse their data work with research evidence. This, in turn, builds educators' sense of ownership over the problems of practice raised by the research and commitment to changing adult practice to improve student outcomes.

4. **Strategize: Use the Right Data at the Right Time.** Decision-making in schools varies from big-picture strategy to fine-tuning interventions with individual students. Each of these decisions — and everything in between — benefit from the right data at the right time. The data system should provide schools with different data for different levels of decisions, with researchers evaluating popular strategies across contexts to determine the potential for scale.

5. **Disrupt: Identify and Stop Inequity.** Decades of public discussion on the need to reduce achievement gaps has done little to produce more equitable outcomes for American students. In Chicago, we use data not only to highlight differences in student achievement, but also to push educators to examine the beliefs, practices, and institutional conditions that create inequitable outcomes for our youth across the district. Everything from the intentionality of the conversations at the school to the organization of the data ecosystem to the design of the research itself has implications for equity.

Taken together, these five lessons from *Practice-Driven Data: Lessons from Chicago’s Approach to Research, Data, and Practice in Education* form an approach to data use that focuses stakeholders at various levels on the most important goals and features of a data ecosystem that has the potential to catalyze systematic improvements in student outcomes. The authors of the report describe how these lessons have played out in practice in Chicago’s high schools from the perspective of school-based educators, and their implications for different stakeholders in the broader education system, including researchers, data analysts, and data system designers. The report does not prescribe a particular method or model for effective improvement. Instead, it lays out important lessons that will prepare educators across the country to thrive with the information they have available to them. By focusing on the indicators that matter most, making meaning of data to build collective ownership of a challenge, strategizing to use the right data at the right time, and identifying and disrupting inequity, educators can help change the direction of education from the ground up in new and exciting ways.

**DEVELOPMENTS TO WATCH**

Many educators are already leveraging the data available to them to inform improvement efforts at the district and school levels. Schools in suburban Milwaukee are using data not only as a mechanism to track their progress, but also as a **starting point to open new conversations with their students** by having students keep data journals to track their own progress and reflect on where they’ve been successful and could improve. Metro Nashville Public Schools are also taking advantage of their access to school-level data to drive internal efforts to improve, better coordinate with after-school program partners, and foster deeper conversations **with students** and their families. This includes regular “data chats” between teachers and parents intended to help parents better understand their children’s progress and support their ongoing growth. New York City is investing in a data-informed **community school strategy** designed to bring schools and community organizations together and inform data-driven conversations about how community-school partnerships can help address citywide challenges such as chronic absenteeism. The state of Michigan recently launched a Parent Dashboard for School Transparency in collaboration with the Center for Educational Performance and Information (CEPI). The dashboard provides school-level data to families and other school stakeholders to “encourage richer conversations about school progress” and offer “a more balanced picture of school quality.”

Ultimately, as data becomes more accessible to educators, policymakers, and families, its potential to drive improvement in school and student outcomes will continue to grow — but access to data on its own won’t yield substantive gains in student attainment. We need research to illuminate the data that matters most and professional learning that supports educators in translating research and data to improved practice. This combination of research, data, and professional learning has yielded dramatic gains in Chicago students’ educational attainment, and it will continue to power progress in the years to come.
To download the University of Chicago Urban Education Institute’s full New Knowledge Report, visit: https://www.ueiknowledge.org/2018-new-knowledge-report

SOURCES


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