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VOLUME 40 / NUMBER 3
TECHLEARNING.COM

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FIVE WAYS PROGRAMMING HAS CHANGED EDUCATION.
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Tech & Learning (ISSN-1053-6728) (USPS 695-590) is published monthly (except July and December) by Future US, Inc., 11 West 42nd Street, 15th Floor, New York, NY 10036-8002
 POSTMASTER: Send address changes to Tech & Learning, PO Box 8746, Lowell, MA 01853
 Periodicals Postage Paid at New York, NY, and additional mailing offices.



How Can Schools Better Use Data to Personalize Learning?

A Conversation with Alex Seeskin

By Tara Smith

While most US high-school students aspire to earn a college degree, less than one in three succeed. One of the primary goals of the University of Chicago's To&Through Project is to empower K-12 educators with the research, data, and resources they need to move more students to and through high school and college.

"Our work is research based and practice driven," says Alex Seeskin, director of the To&Through Project and one of the authors of "Using Data to Improve Schools from the Ground Up."

Knowing that data can be critical for educators as they help students learn and achieve their potential is one thing, but applying the often overwhelming amount of data in practice is another. "We're data rich and information poor," says Seeskin. He identifies some key areas of focus for districts as they seek to harness the power of data: identifying barriers to student success, building systems to curate data, professional learning—and patience.

SMOOTHING TRANSITIONS

"One of the biggest problems facing schools is the transitions students have to navigate all the time—between grade levels, schools, and even classes," says Seeskin. "Students are vulnerable at each one of these, as they move from one set of relationships and systems to another. It's hard to personalize experiences for students when we don't know what challenges or successes they faced in the last grade, school, or class. When a student moves from a math to an English class, for example, the English teacher often has no idea what's happening in that math class and how that student is interacting with material in math."

It's critically important, therefore, for teachers to look at data together. Only when they have a holistic picture of each individual student can they personalize learning and offer the support students need. This is especially true of SEL, says Seeskin. "We encourage schools to build these

structures and to make it a priority for teachers to talk together about common students and shared groups of students."

Research also shows that a student's GPA and attendance are much better indicators of future success than test scores, which tend to predict test scores, Seeskin says. "So we need to understand and pay attention to those indicators as we intervene and personalize work with students."



I SEE THIS A LOT—A SCHOOL CAN HAVE ALL OF THE DATA AND RESOURCES THEY NEED, BUT THEY DON'T SEE IMMEDIATE CHANGE AND GO LOOKING FOR A SILVER BULLET."

CURATING DATA

"Schools and practitioners often feel they're drowning in data, and time is a valuable resource," says Seeskin. "The key is to help them curate the data so they know what to pay attention to when—at different times of the school year, for example. We need to build tools that funnel the right data to schools and practitioners—and that also funnel the data they don't need away from them. Data needs to be understandable and accessible so teachers can make decisions quickly."

Practitioners need support as they learn to use data and make these data-based decisions. Professional learning should include a technical component as well, Seeskin says, to ensure that the technical problems most schools face don't sabotage adaptive learning. Trust and collaboration are also key building blocks to success. "There needs to be trust between the system and practitioners and

discussions around who's best equipped to make decisions at different levels within a district," says Seeskin. "And it's important to take time to consult with other schools facing similar challenges."

PLAYING THE LONG GAME

"This is incredibly challenging and complicated work, and there are very few easy answers," says Seeskin. "I see this a lot—a school can have all of the data and resources they need, but they don't see immediate change and go looking for a silver bullet. I see systems and schools ping-ponging between new initiatives every year. That type of change is frustrating, exhausting, and often demoralizing."

Instead, he says, schools need to be comfortable with somewhat slow, incremental progress. "We have to play the long game and build systems and structures and a culture that enable us to invest in process over results. We have to have patience. We can't change a school in a year. When you take the longer view, you begin to think about gaining trust and buy-in from those who matter most and crafting solutions alongside them."

This patient view of the bigger picture applies to every step of the process, beginning with the launch. "I'm a huge believer in starting with one thoughtfully chosen school, grade level, or even teacher rather than launching a new initiative across 100 schools tomorrow. There's real power with starting with an N of 1 and going slowly, recognizing that there will be failure. It's probably not going to work the first time, but that just means you haven't figured out how this approach works in your context. When the system is willing to iterate with the first school, by the time they get to the second or tenth school, the intervention is more mature, and they're able to offer better guidance and respond more quickly. When you give interventions or initiatives a chance to adapt to the surrounding context, they work much more often."

The research, stories, and resources at <https://toandthrough.uchicago.edu> illustrate how To&Through's research-based and practice-driven work is impacting schools and students.

THE DEAL WITH DATA

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 their “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 Chicago Public Schools (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. In order 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 person 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 weren’t careful. The proliferation of data meant that educators needed to find ways to focus their discussions on the most important data. It’s 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 as well as their 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.

*An excerpt from the December 2018 report *New Knowledge and Developments in Public Education*, published by the University of Chicago’s Urban Education Institute.*