Overcoming the Challenges Facing Innovative Learning Models in K–12 Education: Lessons from Teach to One

By Joel Rose

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Key Points

- K–12 innovation has a fundamental paradox: Meaningful improvements to student outcomes require learning models that challenge the basic constructs of how classrooms operate—and yet, the more new education models do so, the harder they become for schools to adopt.
- America's K–12 schools tend to resist efforts to redesign the classroom due to underlying forces, including inflexible accountability policies, inadequate investment in developing innovative learning models, bureaucratic inertia, and balky procurement processes.
- Creating space for innovation in accountability policy, catalyzing investment to develop promising models, expanding ways to support early adopters of new learning models, and removing barriers to procurement are key to giving new models a chance to deliver for America's kids.

Over the past seven years, I've been leading a nonprofit organization called New Classrooms Innovation Partners that works to develop a more modern and impactful classroom experience. We've developed an innovative learning model called "Teach to One: Math" that integrates live, collaborative, and independent learning in ways that enable personalized instruction for each student, each day.

In developing this model, we've learned how crucial it is to integrate academic expertise, operational prowess, and technological know-how into the model's design. We've also learned that no matter how strong the design, it's equally essential to work with enthusiastic school partners that serve as early adopters.

Finding partner schools interested in profound changes to the classroom experience has not always been easy. Our team has met with hundreds of administrators, principals, teachers, funders, policymakers, and key influencers all across the country. While many of those interactions led to highly successful implementations, more conversations ended with some version of "this is exactly the kind of innovation that schools need, but we aren't quite ready for it."

Part of the reason some schools and districts are slow to adopt Teach to One is assuredly on us. We

don't spend much on marketing, have only a handful of representatives across the country, and have a set of staffing and scheduling parameters that, while crucial for driving outcomes, don't necessarily fit within the existing structures of how some schools operate. Beyond that, "innovative learning models" usually aren't one of the line items to check off when planning a school budget, so it's often hard for schools to allocate funding for an initiative as intensive as ours (particularly given the professional development required to retrain school-based staff). Innovation is often viewed as nice to have in a world where even the must-haves struggle getting the dollars they need.

But let's assume for a moment that we had the marketing budget of a textbook publisher, few operational barriers to implementation, and a bargain-basement price point. Even then, the forces for keeping school as is would—more often than not—still win the day.

This report is about illuminating these forces and exploring how they might be addressed. My goal is to take you behind the scenes into the conversations we've had with state departments of education and district administrators, with school principals and teams of teachers, with leading technology companies and educational publishers, and with successful investors and prominent philanthropists. These experiences have helped us understand a fundamental paradox with K–12 innovation: Driving dramatic gains in student outcomes will require new learning models that challenge some of the basic constructs for how classrooms operate, and yet the more new models challenge these constructs, the harder they become for schools to adopt.

The fact that our nation's K–12 system is so resistant to novel approaches that redesign the classroom itself is the result of several underlying forces that have built up over time, including (1) an assessment and accountability system that demands a uniform instructional path for all students, (2) inadequate investment in the development of innovative learning models, (3) bureaucratic inertia that reinforces the status quo, and (4) stifling procurement processes.

But before we get into all this, it's important to understand what I mean by the term "innovative learning model" and how it really differs from a traditional learning model (fully acknowledging that reflexive eye-rolling often accompanies new education terms that are often just dressed-up versions of past terms).

Let's start with how schools generally work today: If your daughter happened to be one of roughly four million US seventh graders who began school this fall, she most likely attended her first math class with 28 or so same-age students and her assigned math teacher. Her teacher, trained in the seventh-grade curriculum (one would hope), assigned to her a seventh-grade textbook that included dozens of lessons that span your state's seventh-grade curriculum standards. Over the school year, your daughter will generally experience the same daily lessons as everyone else in her class, receive the same homework to complete, and take the same tests and quizzes. It's probably not too different from how you learned seventh-grade math.

Now, here's how your daughter would experience math if her school implemented Teach to One: At the beginning of the school year, she would take a diagnostic assessment that would ultimately help generate a personalized annual curriculum that's right for her. It could include filling key learning gaps from prior grades, any of the seventh-grade standards, and even more sophisticated eighth-grade concepts. Over the school year, she would experience that curriculum through a variety of instructional approaches—from teachers, in collaboration with her peers, and independently. And each day, she would take a quick online exit slip that feeds a sophisticated scheduling engine, enabling her teachers to continually regroup students so they can work with similarly situated peers on lessons most likely to enable acceleration.

It is important to distinguish innovative learning models, such as Teach to One, from the myriad of software products that schools and districts use. Those products can help, and we embed many of them in our model. But by themselves, many of these products are often used as tools that make the traditional classroom paradigm more efficient. Innovative learning models challenge the paradigm itself. They are an alternative to the standardized, age-based models of instruction that assume a one-size-fits-all curriculum is best for all students.

Our innovative learning model is certainly not the only way of reimagining the classroom. There are limitless ways of challenging what educational historians David Tyack and Larry Cuban termed the "grammar of school"—those aspects of our educational system so deeply embedded and accepted that one would hardly recognize a school as a "real school" without them.[1] Its basic tenets—one teacher, an 800-square-foot room, and 28 or so same-age students all moving through a standardized curriculum—have been around longer than the telephone, automobile, and periodic table.

Indeed, the current grammar of school serves some students well, but its shortcomings are abundantly clear. Age-based student cohorts are administratively convenient, but they don't reflect the reality that students begin the school year at significantly different academic starting points. Textbooks are relatively inexpensive and portable, but they can be an unengaging medium for students. Teachers are the most important factor that goes into a student's academic success, but the job itself can be so taxing that many of the best teachers can easily burn out.

Most importantly, the current grammar seems to work for only 30–40 percent of students across the country—those who graduate each year ready for college or a career. Given these systemic shortcomings, why aren't more districts and schools aggressively looking for innovative solutions?

Reason #1: Assessment and Accountability Policies Demand a Uniform Instructional Path

Federal law requires states to administer annual tests to all students in grades 3–8 that reflect the standards from their enrolled grade level.[2] That means all seventh graders take the seventh-grade test, regardless of whether they began the year on a fourth- or eighth-grade level. Since teachers, school leaders, and districts are accountable for the results on the seventh-grade test, they generally want their teachers to spend the year covering seventh-grade material.

While this approach can help mitigate the risks of teachers having low expectations of students, it fails to account for the fact that math itself is cumulative; a student who hasn't quite conceptually grasped decimals, for example, is going to struggle with percentages. Our data have taught us that the best way to support students in mathematics who have unfinished learning from prior years is to provide them with a strategic mix of pre- and on-grade skills, all to ultimately get them back to grade level. Third-party research of our program provided further evidence that students are more likely to accelerate when their unique needs are prioritized over grade-level exposure.[3] But that approach can make many district and school leaders nervous: More time spent on pre-grade skills means less time spent on skills that will appear on the annual state test.[4]

The insistence on accountability for grade-level expectations has created many barriers to adoption. Some districts we've spoken to couldn't move forward because the curriculum dollars they wanted to use were allowable only for grade-level-aligned curriculum materials (an approach reinforced with the introduction of EdReports and other ratings efforts that evaluate curriculum based on its alignment to grade-level standards). Another district got stuck when it learned that our approach to team teaching would make it harder to cleanly calculate each teacher's unique evaluation score. One senior district official shared that her district could not move forward because she had to attest to the state that each student was taught all the grade-level skills during the school year.

A fixed orientation around grade-level standards and assessments can also make it harder to measure the true impact of innovative learning models. When schools have students who begin the school year multiple years behind and success is measured based on performance on annual grade-level assessments, any learning growth made on pre-grade skills can readily go undetected. These can leave decision makers with the mistaken assumption that innovations "didn't work"—a useful buttress for the continued reign of textbooks and the current grammar of school.[5]

The implicit assumption that underlies many of these policies is that all same-age students should be learning the same grade-level material each year—a hallmark of the current grammar of school.

Approaches that diverge from this basic core assumption will be met with some resistance because they conflict with the grade-level orientation embedded in federal and state education policies and practices assumed best by local decision makers.

Reason #2: Inadequate Investment in Developing Innovative Learning Models

The fact that state laws require the purchase of grade-level textbooks sends an unmistakable message to those who might otherwise have the capacity to design new learning models: Don't waste your time. But even if states purged all references to textbooks from their education codes, where exactly would new models emerge from? The research and development (R&D) required to thoughtfully design new learning models requires multiyear efforts from academic experts, instructional designers, software engineers, operational specialists, and educational researchers—all of whom come together to develop and iterate new models that teach students about world history, the basics of life science, or how best to write an expository essay.

In our work around middle-grade math, we've meticulously investigated the standards and underlying concepts reflected at each grade level, explored and tested the mathematical relationships among those concepts, reviewed tens of thousands of lessons that relate to those concepts, analyzed the results from over 100,000 third-party summative and formative assessments, administered over six million internally designed assessments, and partnered with universities and research firms to advance our collective understanding of how students learn math. We've even started to use machine-learning techniques to deepen our understanding.

None of this R&D comes free. In other industries, the private sector has incentives to foot the bill for these efforts. In 2015, businesses invested $333 billion in R&D in sectors such as health care, transportation, energy, defense, and technology, fueling breakthrough discoveries and overall human progress.[6] So why don't prominent venture capitalists from Silicon Valley or elsewhere put those same investment dollars into driving transformation in our classrooms?

I remember vividly a conversation with Rob Stavis, an adviser to our work and a seasoned venture capitalist. When I asked him about his firm's private investments in K–12 companies, he said that with some rare exceptions, his firm and others had a "big red X" on the K–12 sector. Like many investors, he finds the market too fragmented (15,000 school districts plus 40,000 charter and independent schools), slow-moving, and often resistant to change. As a result, it's harder to scale a business in the K–12 sector and achieve a financial return than it is in other sectors.

So why don't prominent venture capitalists from Silicon Valley or elsewhere put those same investment dollars into driving transformation in our classrooms?

To be sure, some private capital still goes into K–12 education technology. But many investments are focused either on noninstructional tools (e.g., parent communications and district administrative services) or supplemental learning products for teachers to use as they see fit. Few are designed to encompass the beginning, middle, and end of a student's core academic experience given the systemic orientation around textbook adoption.

Limited meaningful private investment in innovative K–12 learning models leaves only two other potential sources for the R&D required to develop innovative learning models: the government and philanthropy. Government is no stranger to supporting innovation. In 2015, it invested more than $100 billion in R&D to support innovations such as those that improve our nation's renewable energy capacity, incorporate genetics into our health care system, and make warfare safer for soldiers.[7] This is how federal policy drives innovation when markets are ill-equipped to do so.

K–12 saw less than 0.10 percent of that amount. Next time you begin to wonder why so much progress has been made in the clean energy sector (a

doubling of renewable energy capacity over the past 10 years) while our K–12 system has been relatively stagnant, look no further than the difference in R&D investment dollars.[8]

Without accessible and consistent capital to mount serious challenges to the current grammar of school, few organizations can actually create innovative learning models that enable far stronger outcomes. And without a vibrant ecosystem of organizations continually innovating to improve student outcomes, new ideas will be perceived by decision makers as fads that will come and go.

Reason #3: Bureaucratic Inertia

We often meet district and school leaders who are true champions for new learning models. But we also meet those whose careers have oriented around the traditional school model and view innovation with skepticism. Many of these people have explicit or implicit decision rights on moving forward, which can make it much harder to get to yes.

I'll never forget a meeting with a large city school district. Around the table were several of the district's top leaders, many of whom were familiar with our work and eager to dig into the nuances of learning progressions, teacher supports, and space redesign. Some even proposed potential partner schools. Then the district's director of math curriculum shared what he said was a philosophical difference: "I believe all students should do the same thing on the same day, no matter where they are." The room fell silent, and the meeting soon ended.

There's certainly nothing wrong with having a different underlying pedagogical philosophy. But I've also come to understand that these reservations are sometimes more about internal politics. Once a school wants to adopt an innovative learning model, what does that say about the chief academic officer who drove last year's textbook adoption? Or the area superintendent whose handpicked math guru has other ideas about what should happen in the schools they oversee? Or the curriculum director who spearheaded an in-house effort to generate a standardized scope and sequence? As soon as one administrator shares reservations, the others must then calculate if it's in their personal interest to wage an internal battle.

Even in situations in which the central office is fully aligned, the challenge of what some call "asymmetric risk" remains. Simply put, district and school administrators have limited political capital to expend, and many fear they have more to lose if a new initiative fails than if it succeeds. Of course some skepticism around new projects and approaches is fair and appropriate given the underlying stakes for students and the core expectations of teachers and parents to ensure quality. However, just as 20 years ago a catchphrase in the technology industry was "no one ever got fired for hiring IBM," the same holds true for many school administrators and their inclination to continue buying textbooks.

Interestingly, the one group of stakeholders we've found the most open to new learning models are teachers. As part of our adoption process, we engage with teachers from each potential partner school to be sure they all have a voice in the decision-making process and are fully aware of what they're signing up for. We walk them through all the details on how they get their schedules, how their role changes, and what supports we provide. The vast majority of the time, they are on board.

But teachers are typically not the primary decision makers when adopting innovative learning models. Decisions more typically rest with administrators whose job it is to carefully consider new approaches or initiatives and balance the asymmetric risk inherent in their roles.

Reason #4: Stifling Procurement Barriers

As of 2013, 42 states, three US territories, and Washington, DC, had legislative provisions that require providing free textbooks for all students.[9] State laws vary for grade-level textbook adoption; some are statewide, while others are more focused at the district or school levels. But the basic notion that grade-level textbooks, despite their profound limitations, shall serve as the primary "technology" that teachers use in classrooms is deeply embedded in most states' educational codes.

With statewide mandates in place, states and districts then set multiyear schedules and annual budgets around textbook adoption for different subjects and grade spans in different years. Savvy

textbook publishers then map their product development around these cycles before aiming their hefty national sales forces at winning as many contracts as they can. Three major publishers (Pearson, McGraw-Hill Education, and Houghton Mifflin Harcourt) dominate the marketplace.

This is how the vast majority of educational materials are purchased. Procurements for instructional materials that might fall outside these cadences with their requests for proposals, specification gathering, bid conferences, board agenda items, and contracting procedures can be a pain for central office staff that might have other priorities. I once worked at the New York City Department of Education and saw firsthand how it can take at least a year or more to buy anything that's different than what's been purchased in the past.

Sometimes district administrators don't realize how convoluted their procurement infrastructure actually is. We worked with a major US district that held a mayoral press conference to promote our partnership at the outset with a promise to figure out the paperwork later. The procurement passed us along, filling out one form or another for months on end. By the time the school year ended, no contract had been signed, and we had no way of getting paid for the services we rendered.

The Path Forward

An essential function of our K–12 public education system is to ensure that the 50 million students it serves each year are prepared for college or a career once they graduate. The current grammar of school may work for some students, but most have little choice but to endure and hope they can find a different path to a fulfilling life once they leave the system.

Innovative learning models provide an alternative way of thinking about how best to address current educational inequities and inadequacies. They stem from a core belief that the basic grammar of school that originated more than 100 years ago is likely not the optimal grammar for all students in the 21st century and that it's time to develop others that reflect our nation's current know-how and capabilities.

But innovative learning models will not gain much traction if we simply rely on the basic laws of supply and demand to work their economic magic. If the past century has taught us anything, it's that the K–12 sector operates under a different set of conditions that makes it highly resistant to the transformational change we have seen in nearly every other sector of our society. Overcoming these barriers will require a combination of intentionality, creativity, and patience to play the long game.

So how exactly would policymakers work to overcome the legislative barriers, design capacity limitations, mindsets, and procurement barriers that stand in the way of new grammars of school? Here's a potential road map.

Create space in accountability policy for new models to develop. Just as successful organizations create space for new products and ideas that can serve as the basis for longer-term success, assessment and accountability policies must also leave room to responsibly explore their future iterations.

The importance of creating space for innovation was contemplated in the Every Student Succeeds Act (ESSA) through its provisions around innovative assessment pilots. But these provisions include several requirements that continue to reinforce the current grammar of school; most notably, they require states to make an annual, comparable determination around grade-level proficiency. While these assessments can also extend to below- and above-grade-level skills, the practical limitations around test length and time can make that hard to pull off.

Nonetheless, states and districts can look for ways to push ESSA's boundaries to create the space for innovative learning models, including using adaptive assessments to measure learning growth, modifying state accountability systems to focus on learning growth over multiple years, and weighting key transition points more heavily.10 They could even conduct requests for proposals to explore other ways of more precisely measuring growth, including approaches that could track student mastery down to the skill level. All of this could happen in parallel to what federal law requires.

Fund the "D" in R&D. Plenty of academic researchers conduct studies on various K–12 programs and practices. But without real investment in the "D" part

of R&D—the work involved in designing innovative learning models—most of the "R" will continue to underwhelm.

Who would actually do the "D"? In today's educational delivery model, local education agencies (LEAs) already do too much. As school managers, they hire and develop teachers and leaders, manage buildings, organize buses, coordinate meals, engage with communities, and oversee the myriad of details that go into running a school. Their complex work is made only harder when done within the constraints of public-sector management and under the auspices of a board of elected local officials with their own political interests.

With the right policies, market signals, and incentives, existing product companies and educational publishers would shift their capacities to develop innovative learning models.

Given these constraints, LEAs cannot be relied on to also serve as centers of gravity for developing innovative learning models. It's just not what they're built to do. Hospitals don't invest in new MRI machines, practicing physicians don't push the boundaries of genomics, and soldiers aren't developing artificial intelligence–powered drones. The best innovations are informed by practitioners, but burden of design and iteration rests elsewhere.

That's why a new organization, which we'd call a "model provider," is so essential to driving the agenda around innovative learning models. Model providers would be responsible for (1) designing innovative learning models through intensive R&D efforts, in partnership with schools and districts, and (2) supporting the adoption of new models in existing schools, *while ultimately sharing in the accountability for student outcomes*. NewSchools Venture Fund has prioritized this concept as part of its organizational strategy and has been steadily building a portfolio of early-stage model providers over the past 18 months.[11]

In a future-state educational delivery model, while LEAs would continue to operate the day-to-day management of schools, they would also select and partner with model providers in lieu of selecting textbooks. Some model providers might focus on particular subjects and grade spans, while others might cover more. LEAs would decide based on the model's robustness, the track record of results, and their reputation for high-quality supports. And model providers would work only in schools where they felt they could demonstrate impact.

In one sense, a bifurcated delivery model that pairs LEAs and model providers working toward a common outcome would be analogous to how the aviation sector operates—with plane makers focused on the sourcing and assembly of aircrafts and airlines focused on reservations, personnel, and maintenance. Each plays a vital role in ensuring reliably safe service, but each plays a distinct and complementary role in the process.

Where might model providers emerge from? With the right policies, market signals, and incentives, existing product companies and educational publishers would shift their capacities to develop innovative learning models. So might charter management organizations, big technology companies, higher education institutions, operating foundations, and professional development organizations, which have some, but not all, of the key competencies required. It's also likely that entirely new entities would be built and organized to design and deliver new models, much in the same way charter management organizations emerged over the past two decades.

Identify and support early adopters. Sir Michael Barber, the one-time architect of Tony Blair's education efforts in the UK, once shared an interesting perspective about educational mindsets. Most policymakers, he argued, believe that changing hearts and minds is a necessary precondition to changing behavior. But he's found the opposite has proved true: Changing behavior first is what ultimately changes hearts and minds. Thus, the best path to challenging the inertia that unwittingly protects the current grammar of school is to identify and support early adopters that want to be pioneers for new learning models while addressing

the barriers that resistors employ to rationalize keeping things as they are.

The kernels for how a state might incentivize the adoption of innovative learning models are playing out in Texas, where the state recently launched Math Innovation Zones. Under the program, the state selected a set of providers (though mostly products, not models), matched them with a set of volunteer schools, allocated state dollars to support implementation, and set up a parallel accountability system to more closely and accurately measure success. Over time, as the state gathers more performance data, it will be able to expand the impact of providers that are having an effect, while eliminating those that are not.

Funding for programs such as Math Innovation Zones can come from provisions under ESSA that enable 7 percent of Title I funding for school interventions and another 3 percent for direct student services. That's roughly $1.6 billion, though few states are fully taking advantage of these provisions. Another $2 billion is available in professional development dollars through Title II (teacher training and professional development) that could also be designated for supporting early adopters of innovative learning models. And those are just federal funding streams; states may have their own programs that could be reconfigured to better support innovation.

Forward-leaning district leaders will also need to create space in their organizations to pilot and support innovative learning models—even at the risk of creating organizational agita. In our experience, organizational turf wars between chief innovation officers and chief academic or school officers are more often won by the latter—particularly since that's whom school leaders report to. Superintendents who are serious about driving innovation and new learning models need to be unambiguous and resolute in driving this agenda while ensuring their teams are properly structured and appropriately aligned to get the job done.

Address procurement barriers. Ensuring procurement policies do not stand in the way of innovation will require state offices of education to comb through their education codes to stop well-intentioned regulations oriented around grade-level textbook adoptions from obstructing the development of innovative learning models. That's probably the easy part.

Addressing in more detail the nuances of state and district procurement procedures and how they could be improved to better support innovation is well beyond the scope of this report. Many of the rules, systems, and procedures that govern public procurements have evolved over decades, with new layers added on each time some level of waste, fraud, or abuse is uncovered. While not the sexiest work, it is incumbent upon each state and district to take a hard look at how they do business to ensure that systems in place to protect the public interest are not also the invisible forces reinforcing the same way of doing school.

Conclusion

The grammar of school our country stumbled upon in the middle of the 19th century has become the foundation for one of our greatest national accomplishments. It's easy to take for granted today, but the fact that we've funded, built, staffed, and supplied more than 130,000 schools in every corner of the country so that any child can access a K–12 education is no small feat. Yet to better drive quality, it's long past time to create the space for fundamental redesign.

The past 100-plus years of human progress and educational know-how provide a fresh opportunity to imagine new grammars of school. They can now be designed in ways that are more attuned to the unique strengths and needs of each student, more mindful of students' social and emotional development, more reflective of deeper and more authentic learning experiences, more creative in their use of modern tools and capabilities, and more inclusive of sustainable and fulfilling roles for educators.

One-off efforts focused on any of these objectives that do not fundamentally redesign the classroom experience are unlikely to yield noteworthy and scalable outcomes that students deserve. And yet as we've learned, comprehensive efforts to redesign the classroom itself to account for all these objectives will run up against defenses that unwittingly protect against threats to the current grammar of school.

The work required to design, implement, and scale innovative learning models will not happen by osmosis. The economic forces that invisibly drive disruption and innovation in most sectors do not apply in the same way in K–12 education. That's why developing novel ways to enable and support innovation around new learning models is so essential for long-term change.

Creating the space in policy, catalyzing real investment in R&D, challenging bureaucratic inertia, and fixing procurement are central pillars to facilitating the shift to innovative learning models. While it's no quick fix, it represents the most promising path to reshaping our educational system in ways that can work far better for the students it serves.

About the Author

Joel Rose is the cofounder and CEO of New Classrooms Innovation Partners. He is the former chief executive for Human Capital and the New York City Department of Education, where he also spearheaded the creation of School of One.

Notes

1. David D. Tyack and Larry Cuban, *Tinkering Toward Utopia: A Century of Public School Reform* (Cambridge, MA: Harvard University Press, 1995).
2. ESSA also requires states to administer a summative assessment in high school.
3. Jesse Margolis, "Three-Year MAP Growth at Schools Using Teach to One: Math," MarGrady Research, February 2019, www.margrady.com/tto/. Overall, students served through Teach to One: Math over their three years in middle school grew 20 percentile points relative to national norms on the NWEA MAP assessment. However, schools that operated within accountability systems that valued learning growth (as reflected on the MAP) grew 38 percentile points, while those focused largely on state proficiency grew 7 points.
4. More on this topic can found in New Classrooms Innovation Providers, "The Iceberg Problem: How Assessment and Accountability Policies Cause Learning Gaps to Accumulate . . . and What to Do About It," Fall 2019.
5. The challenges of implementing Teach to One in grade-level accountability systems was explored in Douglas D. Ready, *Final Impact Results from the i3 Implementation of Teach to One: Math*, Consortium for Policy Research in Education, Teachers College, Columbia University, January 2019. As part of the study, researchers enumerated the many ways the program was locally modified to prioritize grade-level exposure over individual student needs. This ultimately prevented researchers from drawing any generalizable conclusions about the program itself.
6. National Science Board, "Research and Development: U.S. Trends and International Comparisons," 2018, www.nsf.gov/statistics/2018/nsb20181/report/sections/research-and-development-u-s-trends-and-international-comparisons/introduction.
7. National Science Board, "Research and Development."
8. US Energy Information Administration, "Today in Energy: U.S. Fuel Ethanol Production Continues to Grow in 2017," July 21, 2017, https://www.eia.gov/todayinenergy/detail.php?id=32152.
9. Vincent Scudella, "K-12 Textbook Adoption: State Textbook Adoption," Education Commission of the States, September 2013, www.ecs.org/clearinghouse/01/09/23/10923.pdf.
10. For more on this topic, see New Classrooms Innovation Partners, "The Iceberg Problem."
11. For more on NewSchools' work with model providers, see NewSchools, "Model Providers: New Pathways to Innovation," June 2019, www.newschools.org/wp-content/uploads/2019/06/Model-Providers-Pathways-to-Innovation.pdf.