THE **SEA** OF THE FUTURE

PRIORITIZING PRODUCTIVITY

Editors:
Betheny Gross
Ashley Jochim

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Contents

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Michael Podgursky | Michael Podgursky is Professor of Economics at the University of Missouri–Columbia, where he served as department chair from 1995–2005. His research focuses on the economics of education, primarily school finance, educator compensation, and human resource policy in schools. He serves on the board of editors of *Education Finance and Policy*, *Peabody Journal of Education*, and advisory boards for various statistical agencies and research institutes. Dr. Podgursky is a co-investigator at the National Center for Performance Incentives at Vanderbilt University and the Center for Analysis of Longitudinal Data in Education Research at AIR, two national research centers funded by the Institute of Education Sciences of the U.S. Department of Education.

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Data Quality Campaign | The Data Quality Campaign (DQC) is a nonprofit, nonpartisan, national advocacy organization based in Washington, DC. Launched in 2005 by 10 founding partners, DQC now leads a partnership of nearly 100 organizations committed to realizing the vision of an education system in which all stakeholders—from parents to policymakers—are empowered with high-quality education data to make decisions that ensure every student graduates high school prepared for success in college and the workplace.

Overview:
Prioritizing Productivity

Betheny Gross
Center on Reinventing Public Education

November 2013

State leaders trying to make decisions about how to use limited resources are faced with an uneasy zero-sum game: every dollar they put into one program is a dollar not spent in another. When state education agency (SEA) chiefs suggest that public funds can be better spent, they're criticized, often unfairly, as if they were trying to reduce the amount of money that goes to schools and children.

Though these conversations can be uncomfortable, leaders need to talk about how to better spend money in schools and districts. For the sake of taxpayers, educators, and the students themselves, state leaders need to make the most of every dollar they have. In short, they need to prioritize productivity.

The authors of this volume of the SEA of the Future series begin a conversation with state leaders about productivity. Marguerite Roza of the **Edunomics Lab**—a **Building State Capacity and Productivity Center** (BSCP Center) partner—makes the case for why productivity is essential to improving outcomes for students. Roza offers officials at state education agencies an action plan toward embedding productivity into everyday decisionmaking. It begins with merging finance and student achievement data to easily see which schools, districts, and approaches get more bang for the buck.

> State leaders trying to use limited resources most efficiently are criticized, often unfairly, as if they were trying to reduce the amount of money that goes to schools and children.

The **Data Quality Campaign**, known for its leadership in states' efforts to establish robust longitudinal data systems, argues that advancing productivity system-wide means going beyond collecting data to putting it to use. State education agencies can foster improved data use by getting timely and reliable information into the hands of decisionmakers at every level of education, from the schoolhouse to the statehouse, and helping stakeholders develop the capacity to act on it.

The last two essays focus on human capital, by far the largest expense in the education system. My colleague Ashley Jochim and I, from the **Center on Reinventing Public Education** (a **BSCP Center** partner), note that efforts to reform teacher evaluation systems will improve productivity only if these systems are able to improve the quality of the teaching workforce. We talk to leading researchers and policy experts about how next-generation teacher evaluation systems can drive change in instructional practice while remaining responsive to the shifting landscape of public education.

Finally, Marguerite Roza and Michael Podgursky, professor of economics at the **University of Missouri**, draw on their research on productivity and

pensions to look in depth at the startling long-term costs of educator pension systems and the counterproductive employment incentives embedded in these systems. Although only state legislatures and pension boards can change pension systems, the authors argue that state education chiefs can leverage data to add transparency to pension incentives and alert districts to human capital policies that drive up pension costs.

Examining the productivity of schools, districts, and programs throughout the education system and using this information to make decisions about what work to continue and what to phase out will not be easy. The authors in this volume collectively offer a road map for beginning this work. The following are key steps:

- Integrating finance data with existing state data on student, teacher, school, and district performance.

- Encouraging, supporting, and incentivizing the use of data to inform decisions across a system, be it professional development for teachers, curricula for schools, or state policy.

- Providing flexibility to enable educators, leaders, and policymakers to respond to data and shifting needs.

The partners in the **BSCP Center** are committed to supporting states as they launch their local efforts to prioritize productivity. Some related efforts we have underway include:

- A capacity-building network of state performance managers. As states transition from monitoring compliance to managing performance, many establish a senior management position with a singular focus on financial and performance metrics for the entire system. This position, frequently entitled the chief performance officer, is responsible for collecting, analyzing, and reporting system-wide data to the highest policy levels. Through the BSCP Center, individuals in this role meet regularly to learn from one another as they collectively establish this important new role.

- A webinar series created by Marguerite Roza, on the tools state leaders can use to analyze the productivity of schools, districts, and programs in their state.

- An intensive support initiative to assist states in managing performance in the System of Recognition, Accountability, and Support. The BSCP Center is working with a small group of states to focus on improvements in their systems of support and intervention. To date, participating SEAs have used BSCP Center rubrics to identify high-value targets for improvement, develop work plans for improvement, and begin work.

We hope that with the support of the BSCP Center and the continued commitment of state leaders, conversations about money in education will become commonplace and understandable, even if they never really become easy.

Leveraging Productivity for Progress:
An Imperative for States

Marguerite Roza
Edunomics Lab

November 2013

Over four decades, real K–12 education spending in the United States has more than doubled.[1] If projections prove accurate, over the next six years, system costs will exceed revenues by 9.1 percent.[2] Today's way of schooling won't be sustainable tomorrow.

There are a few obvious ways to address such a gap. We could continue to steadily reduce staff, school days, services, and compensation. We could increase fees for advanced classes and athletics, cut a few ineffective programs, and slash after-school programs and summer school. We could freeze salaries and increase the amount employees must contribute to their benefits.

But we can't take such actions and expect to maintain—much less improve—the quality of our education system. What if instead of killing our education system by a thousand cuts, we found ways to make it more productive, and thus not only more financially sustainable, but also better at producing strong outcomes for students? This is what U.S. Secretary of Education Arne Duncan has suggested. In late 2010, he warned that continued spending increases are untenable and that we should take advantage of, rather than fear, the challenges this presents. "It's time to stop treating the problem of educational productivity as a grinding, eat-your-broccoli exercise," Duncan said. "It's time to start treating it as an opportunity for innovation and accelerating progress."[3]

> Today's way of schooling won't be sustainable tomorrow.

Education is a labor-intensive industry, whose biggest costs are wages and benefits. To attract quality workers, salaries must keep pace with those in other industries—industries that seem to have a much easier time innovating toward greater productivity. Given this constraint, it goes against conventional wisdom to think we can improve productivity in education.

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1. Spending, after inflation, increased from $4,618 per pupil in 1968 to $10,652 in 2010. See Table 190, "Total and current expenditures per pupil in public elementary and secondary schools: Selected years, 1919–20 through 2007–08," *Digest of Education Statistics*, National Center for Education Statistics, November 2010, accessed October 21, 2013: http://nces.ed.gov/programs/digest/d10/tables/dt10_190.asp

2. Marguerite Roza, "Productivity Gains Found by Using a Year-Round Labor Force in Schooling," presentation to the annual meeting of the Association for Education Finance and Policy, New Orleans, March 14, 2013.

3. Arne Duncan, "The New Normal: Doing More With Less," speech at the American Enterprise Institute, November 17, 2010, accessed October 21, 2013: www.ed.gov/news/speeches/new-normal-doing-more-less-secretary-arne-duncans-remarks-american-enterprise-institut

That pessimism would be warranted only if we insist that schooling continue to look exactly as it has for more than a century: teachers gathering students into similarly sized, grade-based classes and delivering lesson plans to the group for six or seven hours a day, 180 days a year. As long as we stick with that system, and its staffing structure, costs will inevitably grow. If we are willing to fundamentally redesign schooling, though, we can create reforms that are both educationally promising and fiscally sustainable, and make the teaching profession even more attractive. Other labor-intensive service-sector industries, such as banking and retail, have managed to rein in costs through innovations that improve productivity.[4] How can we cut through the political motivations that drive many discussions about what to spend and instead focus on what we are getting for the money?[5]

PRODUCTIVITY MUST BE PART OF THE CONVERSATION—EVERYONE'S CONVERSATION

To meet the challenge of greater productivity—that is, better outcomes at a more sustainable cost structure—policymakers and leaders must first understand and accept a fundamental yet controversial truth: *Some schools and districts are already achieving more than others with the same funds or less.* Even after accounting for family income of students, a metric linked to student achievement, there are school districts that get better outcomes than others do, even though they spend the same or even less money. In Washington State in 2011, for example, 68 percent of students at one high-poverty elementary school scored proficient. That school spent $7,400 per student in total school-level staffing costs; another school achieved the same result by spending $3,800 per pupil.[6]

Is this the result of chance? Or was one school's greater productivity earned through efficiencies and innovations? Did it have new approaches to compensation? To teaching loads? To technology? We will only know if we delve deeper. First we need to identify high-achieving, low- or moderately spending schools and districts—and then we need to learn from them.

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4. On productivity improvements in other service industries, see Jack E. Triplett and Barry P. Bosworth, "Productivity Measurement Issues in Services Industries: 'Baumol's Disease' Has Been Cured," *FRBNY Economic Policy Review*, September 2003: 23–33.

5. For background, see Paul Hill and Marguerite Roza, *Curing Baumol's Disease: In Search of Productivity Gains in K–12 Schooling* (Seattle, WA: Center on Reinventing Public Education, July 2010).

6. Computations are based on analysis by Roza and Simpkins of school-based staffing expenditures and percent proficient on state exams.

To date, nobody's been asked to have these conversations. School and district leaders have not been encouraged to consider how their new initiatives add to costs and how outcomes will compare relative to their investments. To consider, if you will, the bang for their buck. Often, they don't even know that they control the buck. A surprise to many district leaders is the fact that districts hold the fiduciary responsibility for public education spending. Sure, state and federal leaders often attach strings to various funds, but for the most part, it is the district leaders (school boards and their designates) who make decisions about how many staff to hire, which ones, how much to pay them, where to assign them, and how they should spend their time.[7] Labor agreements add constraints, but labor agreements are negotiated with district leaders and are thus artifacts of district authority. All told, if district leaders were made to understand that productivity—not just student outcomes, but student outcomes and cost—was part of their jobs, would they make better spending decisions?

Probably. But first they would need a lot of information. They'd need to know how things work now: How much does each school and district spend, and for what result? They'd need training, first to learn how their district compares to others on spending for services, and then about what other options exist. And they'd need to internalize a greater truth: that student outcomes are not simply a product of the total amount they spend. Rather, district leaders' decisions about how they spend money will determine how well their students do at a particular spending level. Simply attaching more initiatives is not the only road to improvement— and given current realities, it is not a sustainable one.

ALIGNING SPENDING WITH PRIORITIES

Education costs have risen in part because schools have had to take on many new responsibilities, in areas such as special education and services for English language learners. Schools and districts have also made reforms they believed would improve learning, such as lowering class sizes or adding coaches, specialists, or special classes. These initiatives have invariably added staff. Looking forward, a large portion of rising education costs will come from cost escalations inherent in the salaries and benefits of existing and added staff for the various initiatives.

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7. Some states, like Delaware and North Carolina, operate with state salary schedules that add further burdens on district authority.

Given that some 90 percent of school district budgets are spent on personnel, any effort to improve productivity must begin with human capital. Through fiscal analysis and modeling, we can investigate the financial viability of different labor arrangements using existing school cost structures. Once we know the unit cost of delivering various services, we can rethink the delivery of those services, so that resources are used differently toward similar (or better) outcomes at a more sustainable cost structure.

Some will assume that a focus on human capital means squeezing salaries and benefits, and that teachers stand to lose if anything changes. Nothing could be further from the truth. Rather than paying less for the same labor, productivity-enhancing strategies in other labor-intensive industries have been most successful when they leverage the best staff in ways that enable them to earn more (often by being more productive). For example, one clever school district found that some grade levels held just a few students above the maximum class size. Rather than hiring additional teachers, the district offered its best teachers a stipend of $2,000 per additional student to teach larger classes. In doing so, the district saved money, paid its most effective teachers more, and enabled more students to be taught by high performers. In another example, schools use time-technology swaps[8] in which students spend some time in digital instruction and some time in face-to-face learning with teachers. This rotation allows excellent teachers time to teach additional classes, and they earn more by doing so.

In schooling, efforts to increase productivity must be implemented in a way that aligns with educational priorities—a blind spot in many current spending patterns. For instance, senior teachers tend to congregate in schools with fewer low-income students.[9] Because salary schedules reward longevity, these teachers are also paid more. So within a given school district, per pupil spending on core instruction tends to be higher in schools with relatively affluent students, rather than in schools with students who need more support. Within schools, similar patterns play out. Higher-salaried teachers drift to more advanced and honors courses. These teachers' higher salaries (and, often, smaller classes) mean that the schools spend more on students in these advanced courses than on

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8. "Time Technology Swaps—Rotation (In-Person Teacher)," Public Impact, Building an Opportunity Culture for America's Teachers, accessed October 21, 2013: www. opportunityculture.org/reach/time-tech-swaps-rotation-in-person/

9. Marguerite Roza and Paul T. Hill, "How Within-District Spending Inequities Help Some Schools to Fail," in *Brookings Papers on Education Policy 2004*, edited by Diane Ravitch (Washington, DC: The Brookings Institution, 2004), 201–218.

students in regular or remedial courses. Costs are driven up in elective courses, too, when they are staffed with more senior (higher-paid) teachers teaching smaller classes.

When schools systematically spend money in ways that conflict with their priorities, we know we have a problem. To be sure, research shows that experience—and therefore salary—does not always equal higher performance.[10] Rethinking allocations might drive changes in compensation structures, class sizes, or other basic policies in order to direct funds in a more purposeful manner. The high-spending school with more affluent students might be forced to make tradeoffs—perhaps it keeps its high-paid teachers but eliminates a vice principal position as an offset.

That kind of conscious decisionmaking can be conducted only if frequent use of comprehensive data systems becomes part of the job description for district and school leaders. Making changes to leverage productivity doesn't just mean that a system lowers costs and produces equal outcomes. Rather, it means that the system seeks opportunities to *maximize* outcomes at any particular spending level. School district officials responsible for strategy and those responsible for budgeting need to work together to identify potential areas of greater productivity that fit with their overall vision for their schools. Whether in districts, school boards, or schools themselves, leaders need to risk disruption— and be given the incentives and flexibility to do so.

As educators take chances to prioritize productivity, that disruption will bring new models of organizing schools, delivering instruction, and allocating and compensating staff. Truly transformative changes might include the following:

- **New school designs** that get the best teachers in front of the greatest number of students, individualize instruction, and at the same time reduce the overall need for some staff positions. Some schools, like those run by Rocketship Education in California, have achieved this through a blended-learning model, where students learn part of the time from online modules and part of the time from teachers in class.[11]

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10. For an accessible review, see Jennifer King Rice, *The Impact of Teacher Experience: Examining the Evidence and Policy Implications* (Washington, DC: Urban Institute, 2010).

11. See Marguerite Roza and Suzanne Simburg, "Innovating Toward Sustainability: How Computer Labs Can Enable New Staffing Structures and Savings," in *Hopes, Fears, & Reality: A Balanced Look at Charter Schools in 2012* (Seattle, WA: Center on Reinventing Public Education, May 2013).

- **Innovations in teacher compensation** that might allow the best staff to earn higher salaries by teaching more students or more courses. A top-flight high school science teacher, for example, might be paid extra to offer a physics class in the summer, thereby reducing the need for additional science staff. At the elementary level, excellent reading teachers might earn more by serving some students with reading disabilities during the summer, reducing the total special education staff required. Districts in Douglas County, Colorado, and Nashville, Tennessee, have begun experimenting with these kinds of innovations.

- **Technology that restructures instructional delivery and staffing.** Foreign language software might enable students to rotate between traditional classrooms and language labs, thereby reducing total need for language staff. Speech therapy technologies might replace some hours with a speech therapist. Some schools, like those in Charlotte, North Carolina, have redesigned roles and classrooms toward this outcome.[12]

- **More sustainable professional learning models.** For instance, developing a good online training program and giving preferences in hiring to candidates who have completed it may be a better way to introduce new curricular approaches than mandating expensive days of professional development for all teachers.

- **Shifts away from automatic cost increases that don't parallel growth in productivity.** For instance, rather than grow spending in the form of pay boosts for earning master's degrees and National Board Certification (regardless of outcomes), funds might be left flexible so that schools and districts could award them where staff members uncover more productive delivery models. New salary structures in Newark, New Jersey, and Memphis, Tennessee, move in this direction.

- **Redesigned benefits offerings.** School systems have historically awarded more generous benefits as a consolation for lower salaries. Given the tremendous growth districts have seen in their benefits bill, some might rethink that arrangement, offering up new packages that allow staff the option of higher salaries for unused benefits.

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12. "Charlotte's Project L.I.F.T. Flooded with Applications," Public Impact, April 24, 2013, accessed October 21, 2013: www.publicimpact.com/charlottes-project-l-i-f-t-flooded-with-applications/

It is true that the ideas and cost models offered here have not yet been the subject of proven, implementation-based research; the problems districts face are unprecedented, and thus require fresh options for containing costs. Not all innovations will work well the first time around—some, such as technological solutions, could prove more expensive if not chosen wisely. But as school systems seek productivity improvements, they'll be able to learn from the strategies that do work.

HOW CAN STATES HELP?

In the past, state policymakers thought their job was to ensure uniform delivery models among schools and districts. That won't suffice with today's challenges. Instead, policymakers need to take a lead role in enabling change and figuring out which places are making productivity gains. For states, setting a productivity agenda means taking a proactive role in guiding the system toward seeking greater outcomes at existing spending levels. To reorient the system around productivity, states can take the following steps:

- **Ensure access to productivity data.** First and foremost, states need to expand recently built information systems and tools such that district and state leaders can compare outcomes and *spending* among various schools and districts. These enhanced data systems should profile schools with the highest outcomes at a particular spending level, to demonstrate what's possible for different kinds of schools. And the system should enable educators to share practices and learn from each other. If these data are high-quality, understandable, and timely, they can draw attention to and inform decisions that align with the productivity agenda. While states have made progress on measuring school outcomes, thus far they haven't combined outcomes data with spending information in a way that yields valuable productivity insights. The Center for American Progress illustrates a model for comparing spending and outcomes at the district level, and the Edunomics Lab's work on productivity demonstrates how to compute spending and outcomes data at the school level.[13]

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13. Ulrich Boser, "Return on Educational Investment: A District-by-District Evaluation of U.S. Educational Productivity," Center for American Progress, January 19, 2011, accessed October 21, 2013: www.americanprogress.org/issues/education/report/2011/01/19/8902/return-on-educational-investment/; Marguerite Roza, "Understanding the Productivity Landscape in Your State" [webinar], accessed October 21, 2013: www.vimeo.com/73181041

- **Prioritize flexibility.** Rather than promote uniformity and compliance, states must help principals and district leaders seek productivity-enhancing models. States should eliminate unnecessary regulations regarding instructional delivery, offer waivers for districts wanting to try new things, and zero in on total spending and outcomes. Toward this end, districts need flexibility on compensation, seat-time prescriptions, calendars, and other parameters. Then states can incorporate into their accountability systems ways to measure and address whether district and school efforts are resulting in more productive outcomes. Several states are making solid progress on this front, including Louisiana, where the Red Tape Reduction Law of 2010 gave districts greater flexibility in meeting state rules. In 2009, California implemented a set of flexibility provisions designed to give districts much more freedom in their use of categorical allocations. Some locales have leveraged new flexibility in federal programs. For example, in Ohio, Cincinnati's use of Title I allows the school district to consolidate federal, state, and local funds.

- **Fund students, not delivery models.** Some states are shifting to a funding structure that allocates money on the basis of students, not on the basis of purchase inputs (e.g., staff, services, class sizes, courses offered). Funds that focus on students are more flexible and can be redeployed in new ways as more promising delivery models emerge. In some states, more restrictive funding formulas inhibit the very innovations that would enhance productivity. For instance, where state formulas fund staff full-time equivalents or teacher-student ratios, schools can't adopt technological solutions that reduce teacher hours, because the district only receives funding if it hires the specified number of teachers. Formulas that fund students and student types keep money flexible and permit new delivery models. California recently adopted a weighted student funding structure toward this end, and a similar model has been proposed in Colorado.

- **Use state leverage to promote productivity.** States might also promote productivity-seeking innovations that work in the state context. States might offer or require training for leaders and school boards on productivity, make awards for high-productivity delivery models, or launch competitive grants to fuel innovation. Ohio recently launched a $250 million Straight A Fund to put educators' good ideas into action toward increasing productivity.[14]

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14. "Straight A Fund," Ohio Department of Education, October 11, 2013, accessed October 21, 2013: www.education.ohio.gov/Topics/Straight-A-Fund

- **Tackle long-term cost obligations.** Some states may want to use their leverage to reduce districts' long-term cost obligations. States might rethink teacher tenure rules, or limit longer-term labor contracts that obligate costs well into the future. Some states, like Louisiana, are already using their certification powers to enable some districts to remove the lowest performing staff. Other states, like Rhode Island, have taken on the challenge of pension liabilities by restructuring their pension programs (see Roza and Podgursky's essay in this volume).

- **Lead the change.** Lastly, states might consider ways to provide local systems some political cover when they have to make hard choices—the way the federal government did for states through Race to the Top. Providing meaningful incentives to prioritize productivity can serve two purposes: making the work, tough as it is to tackle, irresistible, and protecting it from critics.

Public education faces scarcity in the years ahead. There are those who will worry that talk of productivity in education will reduce schooling to a mere equation, when the day-to-day work of serving students constitutes so much more. But a focus on productivity means learning to maximize outcomes at any spending level—which, ultimately, can produce greater good for students.

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Getting Beyond the Data:
The State Role in Fostering
Continuous Improvement

Data Quality Campaign

November 2013

In 2013, the Strategic Data Project reported that students enrolled in Delaware's vocational-technical schools were more likely to complete high school than were similar peers attending the state's other public schools. This is a tremendously valuable insight for a state hoping to improve the graduation rate in its traditionally underserved communities. Incredibly, though, the data for this analysis—including test scores, graduation rates, and student and school information—had been sitting in the state's data warehouse for years.[1] Data's power is in its secure application to improve student achievement and system performance.

Over the last 10 years, states across the country built robust longitudinal data systems comprising students' academic performance data linked to classroom, school, and district data. Since 2005, the Data Quality Campaign (DQC) has tracked states' progress toward implementing 10 essential elements of a quality data system.[2] When DQC last surveyed these elements in 2011, all but one state had put eight or more of the essential elements in place. This was more than double the number of states that had this capacity in 2005.[3] It means that virtually every state now has the data needed to answer the questions most critical to improving education policy and practice at all levels.

But many states have yet to fully leverage data in schools, in districts, and in the state agency itself. Teachers and principals vary tremendously in their capacity to access, interpret, and incorporate data for school and district improvement.[4] Many states are still developing systems to raise local leaders' awareness and ability to act on data, and just 14 states have data literacy requirements for educator licensing and program approval policies. Perhaps even more importantly, state education agencies (SEAs) have not consistently incorporated data from their own data systems into policy and regulatory decisions that they control.

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1. For more about this story and the Strategic Data Project's partnership with Delaware, see Lindsay Page, "Informed Decisionmaking in Practice: Connecting Data and Policy in Delaware," Data Quality Campaign, *The Flashlight* blog, August 9, 2013, accessed September 10, 2013: www.dataqualitycampaign.org/blog/2013/08/informed-decisionmaking-in-practice-connecting-data-and-policy-in-delaware/

2. "State Analysis by Essential Element," Data Quality Campaign, accessed October 21, 2013: www.dataqualitycampaign.org/node/388/

3. This includes data on attendance, demographics, test scores, student grades, and completion. Most states have yet to put together the final pieces: linking students and teachers, and incorporating transcript and college entrance exam data.

4. See Julie A. Marsh, John F. Pane, and Laura S. Hamilton, *Making Sense of Data-Driven Decision Making in Education: Evidence from Recent RAND Research* (Santa Monica, CA: RAND Corporation, 2006).

These failures represent more than missed opportunities. As the other essays in this volume attest, states face tremendous pressure to drive advances in educational productivity by holding down costs while dramatically increasing student achievement. Meeting these demands will require states to move beyond gathering data and toward using it to improve the productivity of educational systems, while ensuring the privacy, security and confidentiality of student data is protected.

GETTING BEYOND THE DATA: EXAMPLES FROM STATES LEADING THE WAY

When states have good longitudinal data systems, and the right people can access and understand the information, policymakers can better gauge the relative performance of schools, districts, and programs; identify best practices; and base the allocation of scarce resources on what has provided the greatest impact. Prompt access to reliable data won't just help state administrators. With these data, students and families can pick the schools and courses most likely to lead to successful outcomes, and teachers can deliver more powerful and targeted instruction.

SEAs can play a leading role in making these opportunities a reality. As creatures of the state, they are uniquely situated to leverage state resources to bolster local access and capacity for data use. As regulatory and policymaking bodies, they are poised to leverage data to improve their own systems of support and intervention—better identifying the schools, districts, and programs that need help and more precisely identifying what they need to improve. This essay reports on the progress states have made in going beyond data systems toward securely using data to drive continuous improvement.

Leveraging State Resources to Improve Data Use in Districts and Schools

Large, high-capacity districts led the way in building sophisticated data systems and tools for instructional staff. But even the most sophisticated district-built systems generally do not follow students' progress as they move into careers or college, and one district's system can't be easily merged with other districts' systems to provide a statewide perspective on the performance of local school systems. Moreover, many smaller districts lack the capacity to develop comparably sophisticated data tools, leaving significant gaps in local data use.

The states leading the way are working to address these gaps by leveraging state resources to supplement, not supplant, district-level efforts to improve data use. Georgia, Texas, and Delaware offer great examples of how states can reduce data redundancies and streamline data management by creating centrally managed data repositories and dashboards. Such efforts benefit both large districts, which already have sophisticated local systems but lack integrated access to longitudinal data systems, and smaller districts, which often lack the capacity to develop and support a locally managed system. Oregon shows how states can go one step further by offering direct support to teachers and other instructional leaders toward using data in their professional practice.

When the Georgia Department of Education first sought to improve access to its longitudinal data system, officials found that many districts had already invested in their own data management systems, which were not compatible with state-level databases. This meant that state data were underutilized and generally disconnected from the richer array of data available within districts. In 2009, after extensive stakeholder engagement, the department released what it called a "tunnel," which links data from a single state system directly to district-level student information systems.[5] District staff can now view and compare state and local performance information on specific schools or programs to identify best practices, while teachers and parents have access to detailed longitudinal data to support children in the classroom and at home.[6]

In Texas, where more than 1,000, mostly small school districts had their own systems for collecting and analyzing data, the need for better access and support was clear. The Texas Education Agency realized that districts were struggling under the cost of collecting and reporting data to the state. At the same time, many districts received state-sponsored reports too late for them to be useful to instructional staff monitoring student progress. The new Texas Student Data System provides two solutions to solve these problems: a set of dashboards for teachers, and a revised data submittal system to reduce the burden on administrators.[7]

5. "State Longitudinal Data System Frequently Asked Questions," Georgia Department of Education, accessed September 6, 2013: http://slds.doe.k12.ga.us/DataHubPortal/Documents/SLDS%20FAQs.pdf

6. For more information on the "tunnel," see "Georgia's Information Tunnel: Linking District Ingenuity with State Resources to Make Data Matter," Data Quality Campaign, accessed September 6, 2013: www.dataqualitycampaign.org/success-stories/state-stories/georgia-information-tunnel-linking-district-ingenuity-with-state-resources-to-make-data-matter/

7. For more information on the Texas story, see "Texas Leads the Charge for the State-of-the-Art State-Level Reporting," Data Quality Campaign, accessed September 6, 2013: www.dataqualitycampaign.org/success-stories/state-stories/texas-leads-the-charge-for-state-of-the-art-education-data-reporting

Delaware, meanwhile, created Education Insight, a $1.3 million program funded through the state's Race to the Top grant. Education Insight aggregates data from a variety of existing sources to provide teachers, principals, and other staff a comprehensive view of each student and school. The program is free for all public schools in the state, traditional or charter, and shows how states can effectively leverage resources to improve data access in districts and schools.[8]

Beyond access, states are poised to enhance district- and school-level staff capacity to use data in decisionmaking. Oregon provides a strong example of the promise for students when a state agency supports effective data use in the classroom. As the Oregon Department of Education began to build a statewide longitudinal data system in 2007, it organized the Oregon Direct Access to Achievement (DATA) Project, in collaboration with several other state organizations and 19 regional support districts that offer services to the districts in their area.[9] The project's two-day, in-person training institutes have trained nearly 5,000 educators to use data to inform instructional decisions.

Supporting Data Use in Districts and Schools: Guiding Principles

Principle 1: Collaboratively identify district data capacity to inform state data efforts.

Principle 2: Transform data into actionable information and ensure district access.

Principle 3: Ensure data literacy among educators through preservice and in-service policies and practices.

Principle 4: Maximize efficiency and minimize burden in data collection.

Source: Data Quality Campaign, *From Compliance to Service: Evolving the State Role to Support District Data Efforts to Improve Student Achievement* (Washington, DC: Data Quality Campaign, November 2011).

Oregon's effort has paid off. After just two years of teacher professional development in participating schools, teachers reported significantly increased use of data-driven decisionmaking. The results for students also look promising: the percentage of students scoring proficient or better on the state test grew significantly more in participating schools than in schools whose teachers did not receive training on data use in their classrooms.[10]

8. "Statewide Data Dashboard Gives Educators New Tool to Support Student Learning," Delaware Department of Education, August 21, 2012, accessed September 6, 2013: www.doe.k12.de.us/news/2012/0821.shtml

9. "About Us," Oregon Direct Access to Achievement Project, accessed October 21, 2013: www.oregondataproject.org/content/about-us

10. Next Level Evaluation, *Oregon DATA Project Final Evaluation Report* (Fayetteville, AR: Next Level Evaluation, 2011).

Improving Data Use in the SEA

SEAs are uniquely positioned to drive system-wide continuous improvement. SEAs collect financial and performance data on teachers, principals, schools, and programs, and they set policies that govern those actors' roles and opportunities for improvement. Consider that a single change to state licensure policy can have the effect of completely refashioning the teacher preparation pipeline. Using data to inform policy choices like these can have wide reach with very little in the way of new financial investments. Work in Tennessee and Louisiana shows how policies ranging from teacher preparation and certification to school support can be made more efficient and effective by using existing state data. Illinois, Texas, and Florida show how statewide data can be mobilized to produce more accessible and informative progress reports.

Though Tennessee's work is still in early stages of analysis, the state is in the process of evaluating certification pathways for teachers using teacher evaluation data (see Gross and Jochim's essay in this volume). In a similar vein, Louisiana shares teacher evaluation data with teacher preparation programs to help them improve their own practice, as well as that of the teachers they train. Given the state's central vantage point and influence over certification pathways, efforts like these can improve the pool of human capital available to districts and schools throughout a state.

States have made far less progress in identifying and disseminating information on effective school models. Some states are working to simplify how they present school and district progress reports to make them more accessible and easier to identify those schools showing notable progress. In a recent redesign of their school report cards, Illinois consolidated the most important information into the first two pages, leaving the deep-dive information and reporting to secondary pages.[11] The state also allowed schools to report some of their own information in the report cards, such as special curricular options and extracurricular activities.

MOVING FORWARD

How can states leverage data for greater impact? This is a critical issue for states to tackle as they seek to improve outcomes for students. States often lack the analytic capacity to conduct independent

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11. "New Report Cards in Development for 2013," Illinois Interactive Report Card, October 20, 2013, accessed October 21, 2013: http://iirc.niu.edu/HTMLPage. aspx?source=newreportcard

evaluations of their existing investments. There are turf issues, and the current culture and structures in education do not support working across traditional boundaries. Stakeholders can be skeptical about the quality and use of data, especially given that data are sometimes used to punish educators and schools, not to help them improve. And, as in all areas of education reform, resources are a constant challenge at a time of scarcity and competing priorities.

The examples from the states presented in this essay suggest that these issues are not insurmountable. The starting point for SEAs seeking to improve local access and use of data is to understand what district leaders and instructional staff want and require from the state. A user-friendly data delivery and retrieval system will probably look different in different states, given that districts vary tremendously in their baseline capacity. SEAs can play a constructive role by designing systems that work for administrators and instructional staff and by providing effective support and training through professional preparation programs, online resources, or some other coordinated effort.

Making better use of data in the SEA is more than a matter of thinking creatively and strategically about data and the problems administrators are trying to solve. It means designing and collecting metrics that are meaningful indicators of success or progress and sharing those data with relevant stakeholders—including program managers, families, and school districts. Perhaps more importantly, it requires a shift in mind-set. We must constantly ask: Are the current options the best ones, based on our analysis? This is very different from viewing data in aggregate terms and making policy and program decisions with little reference to whether choices are cost-effective.

Across the country, leading states are recognizing that the power of data is in application. As other states define their roles and opportunities in this regard, they will be making progress toward their ultimate goal: improving student achievement.

Next-Generation Teacher Evaluation Reform: Taking on Teacher Quality from the Statehouse

Betheny Gross and Ashley Jochim
Center on Reinventing Public Education

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The productivity of public education systems depends importantly on teacher quality, given that teachers account for a high share of education dollars[1] and are the single most important school-based driver of student learning.[2] Stanford economist Eric Hanushek estimates that replacing 6 to 10 percent of the worst teachers with just average teachers would measurably improve student achievement and help close the achievement gap for essentially no new dollars.[3]

States have turned toward evaluation as one of the primary levers for advancing teacher quality from the statehouse. As reported by the New Teacher Project, traditional evaluation systems suffer from a variety of design flaws, including infrequent, unfocused, and undifferentiated evaluations.[4] Reforms have been developed to improve the quality of teacher evaluation measures and to better integrate evaluation data into decisions about compensation, tenure, and promotion. Since 2009, 37 states have adopted legislation that requires districts to incorporate estimates of teacher impact on student performance—often computed as value-added measures—into teacher evaluations, and to adopt more frequent, rigorous, and differentiated observation systems.[5]

While states have made great progress in these regards, they have also faced a variety of setbacks and new challenges. Some of the challenges are technical, such as ensuring quality data sources and training leaders and teachers to new norms for evaluation. Other challenges are more philosophical, such as how to incentivize and support what is essentially a schoolhouse activity—performance evaluation—from the statehouse. And there are still more challenges to come that states would do well to anticipate.

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1. National Center on Education Statistics, *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2008–09 (Fiscal Year 2009)* (Washington, DC: U.S. Department of Education, 2011).

2. See, for example, Emily A. Hassel and Bryan C. Hassel, *3X for all: Extending the reach of education's best* (Chapel Hill, NC: Public Impact, 2009); Jonah E. Rockoff, "The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data," *American Economic Review 94*, no. 2 (2004): 247–252.

3. Eric A. Hanushek, "The Economic Value of Higher Teacher Quality," *Economics of Education Review 30* (2011): 466–479.

4. Daniel Weisberg, Susan Sexton, Jennifer Mulhern, and David Keeling, *The Widget Effect: Our National Failure to Acknowledge and Act on Differences in Teacher Effectiveness*, 2nd ed. (New York: The New Teacher Project, 2009).

5. National Council on Teacher Quality, *State of the States 2012: Teacher Effectiveness Policies* (Washington, DC: National Council on Teacher Quality, 2012).

How this work moves forward depends on the answers to two questions: What are the big lessons from the design and implementation of the current crop of teacher evaluation systems? And what should a next-generation teacher evaluation system look like?

Interviews with several experts with diverse experiences in teacher evaluation offer a variety of lessons to those working from the statehouse to drive improvements in teacher quality. We interviewed the following experts:

- Dan Goldhaber, a university-based labor economist who directs the Center on Education Data and Research.
- Luke Kohlmoos, director of the Tennessee Department of Education's teacher evaluation program.
- Brad Jupp, a senior program advisor on teacher initiatives to U.S. Secretary of Education Arne Duncan.
- Christopher Thorn, director of the Carnegie Foundation's Advancing Teaching and Improving Learning program.
- Janice Poda, the strategic initiative director for the education workforce in the Council of Chief State School Officers.

Five Organizations Doing Work on Teacher Evaluation

- **The U.S. Department of Education** has been working with states to transform teacher evaluation systems since at least 2009, when the Obama administration's Race to the Top competitive grant program included teacher evaluation as a key area of reform. Later, in 2011, the department required applicants to the Elementary and Secondary Education Act Flexibility program to change state teacher evaluation systems to include the use of student growth measures. In 2013, the department allowed states to delay implementation of these required changes in response to challenges associated with putting the Common Core State Standards into place.

- **The Council on Chief State School Officers (CCSSO)** is an organization representing leaders of state education agencies (SEAs). Along with the National Governors Association, CCSSO was the chief architect of the Common Core State Standards Initiative. Since 2011, it has organized the State Consortium on Educator Effectiveness, a collaborative of 28 states working to improve teacher quality. In 2011, it initiated the Interstate Teacher Assessment and Support Consortium, which developed a new vision for teaching and strategies for improving teacher practice. In 2012, CCSSO convened a task force, Transforming Educator Preparation and Entry into the Profession, that issued a call to action to chief state school officers and identified action steps that states could take to improve the quality of the education profession.

- The Carnegie Foundation is an independent policy and research center focused on improving teaching and learning and narrowing the divide between research and practice. Two projects shape the foundation's work on teacher evaluation: The Building a Teaching Effectiveness Network brings together leaders in education practice, policy, and research to focus on developing and retaining effective teachers in the nation's schools. The Advancing Teaching–Improving Learning (ATIL) program seeks to help those working in assessment and evaluation to learn from emerging practices in order to build more effective information systems to advance teacher quality. In 2013, ATIL released A Human Capital Framework for a Stronger Teacher Workforce.
- The Center for Education Data and Research (CEDR) is a research center affiliated with the University of Washington, Bothell. CEDR addresses the disjunction between research, policy, and practice by conducting high-quality research and disseminating it to policymakers. The center's research is concentrated in the areas of school and teacher effectiveness, educational accountability and governance, and teacher labor markets. Projects include an examination of Denver Public Schools' Professional Compensation System for Teachers, an evaluation of Washington State's new assessment of effective teaching, and an assessment of the effectiveness of teacher preparation and recertification policies in Washington State.
- The Tennessee Department of Education makes Tennessee a vanguard state in evaluation reform. Led by Education Commissioner Kevin Huffman, the state won the first round of Race to the Top funds, which it used to implement the state's First to the Top plan. As part of this package of reforms, the state launched the Tennessee Educator Acceleration Model, which relies on a combination of frequent observation, student growth data, and professional development to drive improvements in teacher quality.

WHAT'S NEXT FOR TEACHER EVALUATION?

The experts interviewed all agree that teacher evaluation is essential to any effort to improve teacher quality. Conversations reflected four shared themes on what state and other reform leaders should work toward next:

- Acknowledging that evaluation is just one part of a broader talent management system that improves teacher quality throughout the pipeline.
- Making teacher evaluation relevant to instructional practice.
- Managing implementation with an eye toward continuous improvement.
- Understanding that changes to standards, curricula, and instructional models could shake the foundations of evaluation systems.

Evaluation is Only One Piece of the Puzzle

Teacher evaluation generates data. It does not in itself improve teacher quality. As Christopher Thorn puts it, "Evaluation is the gateway drug to improvement, but it doesn't deliver it." The extent to which teacher evaluation is useful depends on how evaluation data are integrated into other aspects of the talent management system. Ultimately, as Dan Goldhaber explains, evaluation must fundamentally alter the incentives and behavior of teachers in the labor market.

Teacher evaluation data can be used to improve teacher quality at several points: upon entry, through its impact on teacher training and hiring; at midcareer, in shaping professional development and compensation; and at exit, through dismissal and tenure denial. Few states are currently leveraging teacher evaluation to approach talent management at all three of these points.[6]

> The extent to which teacher evaluation is useful depends on how evaluation data are integrated into other aspects of the talent management system.

In most states, teacher evaluation debates have centered on using the data for decisions about tenure and dismissal. But, as Thorn explains, relying on exit pathways to improve teacher quality is very costly to the system and to students. Some economists estimate that it costs upward of $15,000 to fire and replace a teacher.[7]

Moving forward, states will want to consider a comprehensive talent initiative that addresses the entire talent pipeline, from making the profession one that talented people want to enter to developing their skills to rewarding excellent performance. Tennessee is one state attempting to systemically improve teacher quality throughout the pipeline. As Luke Kohlmoos explains, the Tennessee Department of Education views evaluation reform as just one component of a broader effort to improve teacher quality. Anchored by the First to the Top initiative,[8] Tennessee is complementing evaluation reform

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6. National Council on Teacher Quality, *State of the States 2012: Teacher Effectiveness Policies* (Washington, DC: National Council on Teacher Quality, 2012).

7. Anthony T. Milanowski and Allan R. Odden, "A New Approach to the Cost of Teacher Turnover," *School Finance Redesign Working Paper 13* (Seattle, WA: Center on Reinventing Public Education, 2007).

8. "First to the Top," Tennessee Department of Education, accessed October 21, 2013: www.tn.gov/firsttothetop/programs.html

by using evaluation data to change licensure rules, differentiate professional development, use high-performing teachers to conduct job-embedded professional development for their peers, incentivize reforms to teacher compensation practices in districts, and rate teacher preparation programs. Much of this work is still being formed, but the broader view—of talent reform as a systemic endeavor—is in place.

Make Evaluation Relevant to Instructional Practice

In early debates over implementation of evaluation reform, technical challenges related to measuring performance in untested subjects and accounting for nonclassroom inputs crowded out concerns over teaching and learning. The central implementation challenge confronting districts and states is how to make teacher evaluation matter for instructional practice and, ultimately, for children's experiences in the classroom.

Two of the interviewed experts, Thorn and Jupp, emphasize that the success of new teacher evaluation systems will depend on their ability to act as a tool to improve teachers' instructional practice, in ways summative evaluations alone cannot. Thorn explains that "improvement is problem-focused . . . [and] evaluation isn't."

Evaluation will affect teaching and learning only if the evaluation tools—most notably, observation of instructional practice—result in meaningful feedback to teachers that naturally guides their professional development. To Jupp, this means states must go beyond their initial investments in constructing sophisticated evaluation tools and toward building the internal capacity to supervise the work of schools and teachers that implement evaluation systems. Jupp is optimistic that with state support, instructional leaders will become skilled at wielding observation tools to provide differentiated supports to struggling teachers.

Thorn, however, cautions that the early evidence from vanguard states isn't promising. He notes that in Tennessee, principals were overwhelmed by the number of observations they had to perform for each teacher. Moreover, the observation data ultimately revealed very limited variation in scores, calling into question whether the tools could be counted on to differentiate the quality of teachers or target job-embedded professional development.

Continuously Improve Teacher Evaluation Based on Feedback

Lessons emerging from Tennessee's implementation suggest that teacher evaluation systems need further refinement in response to educator feedback and technical implementation challenges. Based on a statewide "listening campaign" launched by the State Collaborative on Reforming Education, a Tennessee nonprofit advocacy group, the state differentiated its observation system so that higher performing teachers received fewer observations. The state also changed the evaluation formula in nontested subjects, and is soliciting proposals for alternative evaluation metrics. This persistent

solicitation and incorporation of feedback into teacher evaluation policy has mediated some of the conflict over evaluation that has dominated in other states and districts—and that did so in Tennessee at first.

In addition to the political push and pull over teacher evaluation, significant technical challenges remain and suggest the need for further refinement. In Tennessee's case, for example, misalignment between teachers' value-added assessments and observation data led the state to institute stronger supports for observers.

Being receptive to feedback does not mean abandoning program goals. In Tennessee, the state continued to roll out the new evaluation system despite calls to delay the implementation of consequences for poor performance.

Future Reforms May Disrupt Evaluation Work

Today's teacher evaluation systems are based on a particular model of what a school looks like, including content of instruction, progression of students, and composition of instructional staff. Poda, Jupp, and Goldhaber all warn that this vision of education will change, probably dramatically. The longevity of evaluation reforms will depend on whether the evaluation systems can be adapted to accommodate both the curriculum changes that are already taking hold across the country and the deep technological changes that are soon to come.

In the immediate future, while curriculum standards are changing across the country, Poda and Jupp emphasize that conversations about academics cannot be separate from conversations about evaluation reform. The connection between curriculum and evaluation, Jupp explains, was an aha moment for officials in the U.S. Department of Education, who realized that rolling out curriculum reform in one office and evaluation reform in another creates "massive confusion" for educators.

Poda sees the result of this disconnect already playing out in states adopting the Common Core. She notes that there is considerable dissonance between what teacher evaluators typically look for in classrooms and what is needed for a classroom to succeed under the Common Core. States will need to look closely at their data to identify what matters for students' success given the new standards, and improve their evaluation rubrics and professional development accordingly.

Looking further down the line, Goldhaber sees technology profoundly changing the work of teachers and the organization of schools. "The only way teaching is going to be radically more productive," he says, "is if schools leverage technology and use big data to determine the match between a person and their best job—their talent and job fit. For example, maybe there is someone who is not a good teacher face-to-face but is phenomenal at facilitating online discussion or debate."

Already, blended-learning schools show what is possible. In the Carpe Diem Schools and Rocketship Education charter networks, teams of teachers oversee the independent work of several classrooms' worth of students, pulling students into small-group instruction to target specific remediation or acceleration needs. Other blended schools maintain the familiar classroom structure and size, but basic content delivery (what was traditionally provided through lectures) and routine practice exercises are shifted online, freeing the classroom teacher to spend more time diagnosing and addressing the unique needs of students. Other models for leveraging technology in schools will continue to emerge.

"Of course, changing the nature of teachers' work like this raises a whole host of issues about evaluation, because it would have to be very different," Goldhaber says. Evaluation systems will need to acknowledge that different people are successful in different contexts, and account for a variety of career paths for teachers. And, importantly, evaluation systems will need to account for a range of instructional contexts. In a school where a given student learns math from a variety of teachers, paraprofessionals, and online programs, measuring student success as a value-added measure attached to one teacher, as is typically done in today's new evaluation systems, would not be plausible. Likewise, observation rubrics that were built around the idea of one teacher instructing a group of 25 or 30 students may no longer make sense in a more fluid instructional environment. "An effective evaluation could not be standardized in that world," Goldhaber says. "You would need nuanced judgment."

LOOKING FORWARD: WHAT STATES MUST DO

Discussion with these thought leaders reveals several recommendations for states looking toward the next generation of teacher evaluation reform.

First, states must learn to view evaluation as one component of a broader talent system, and must work to fully utilize and integrate all their points of leverage to improve teacher quality. This includes taking the following steps:

- Integrate evaluation data into other parts of the talent pipeline—for example, when rating teacher preparation programs, providing professional development, and establishing compensation schemes.
- Use multiple levers to improve teacher quality at each point in the pipeline (entry, development, and exit).
- Rethink how the SEA staffs its professional development and teacher licensure offices so that they work seamlessly with those responsible for teacher evaluation.
- Consider using carrots and sticks to change weakly rated educator preparation programs.
- Streamline the number and type of licenses and certification pathways to reduce fragmentation in teacher preparation programs.

Second, it is clear that evaluation tools will need to do more to impact classroom teaching. There are a few steps states can take to help move this process along:

- Provide school instructional leaders with training and support to perform high-quality evaluation and leverage evaluations for talent improvement.
- Ensure agency staff understand the work of teacher supervision; states should not rely on measurement models alone.
- Ensure district and school-level personnel have some flexibility to differentiate observation demands based on teacher need; a high-performing teacher may not need to be observed as often as a struggling one.
- Use high-performing teachers to provide additional observations and conduct job-embedded professional development.
- Support districts to build additional formative assessment tools that can be used to more frequently assess student progress and support teacher development.

Third, emerging implementation challenges and the likelihood of new ones on the horizon suggest a need to formalize a process for continuous improvement. This might include the following:

- A process to seek feedback from educators, advocacy groups, and others.
- Careful monitoring of data to identify and target assistance to schools and districts showing large disparities between observation and value-added data.

Finally, to enable evaluation systems to adapt to the inevitable fundamental shifts in instruction and the work of teachers, states should work to do the following:

- Integrate teacher evaluation into the broader discussion of school reform.
- Break down organizational barriers between teacher evaluation and other dimensions of teaching and learning.
- Provide districts and school leaders with the flexibility to use evaluation in different school contexts.

These recommendations will ensure that states leverage teacher evaluation as a tool for driving teacher quality in both the schools of today and those of tomorrow.

Teacher Retirement Benefits: Defining a More Active Role for SEAs and Their Chiefs

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During the 2009–10 school year U.S. public schools spent $214 billion on salaries and $74 billion on benefits, including pensions, for instructional personnel.[1] Together, salaries and benefits accounted for nine of every ten instructional dollars spent. Aiming to make more productive use of these funds, and stimulated by federal Race to the Top and Teacher Incentive Fund grants, states and districts have launched experiments in performance pay and other compensation reforms designed to improve teacher performance, retain the best teachers, and put them where they are most needed.

One thing they have not done: talked seriously, or innovatively, about pensions. This is a lost opportunity, as retirement benefits are now emerging as a central concern and potential lever for improvement.

State education agencies (SEAs) and their chiefs are often disengaged from important policy debates about teacher pensions. The typical view—one that is reflected in organizational charts—is that teacher quality sits in one place, school finance sits in another, and the pension fund sits in a different world altogether.[2] This separation is counterproductive in several respects. For

Employer Contributions for Retirement Benefits and Social Security: Public School Teachers and Private-Sector Managers and Professionals
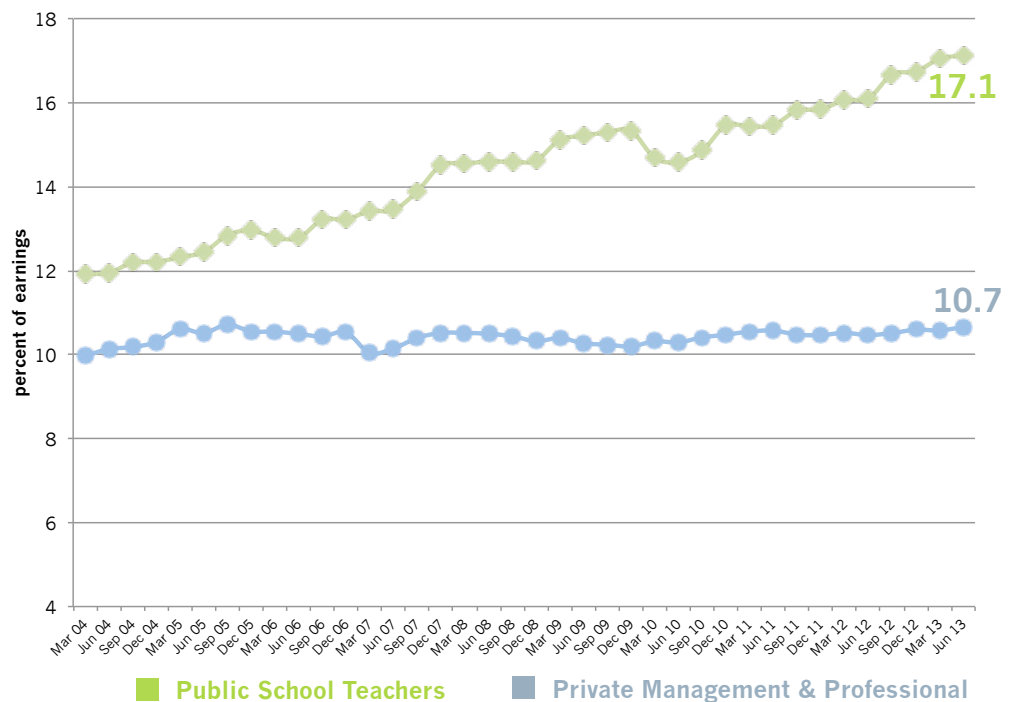
Source: Bureau of Labor Statistics (BLS), National Compensation Survey, Employer Costs for Employee Compensation, 2000, http://www.uaedreform.org/wp-content/uploads/2000/01/Employer-contribution-chart.pdf; authors' estimate of teacher SS contributions, using BLS estimate of SS coverage
Note: Does not include retiree health benefits.

1. The 2009–10 school year is the most recent year for which data are available.
2. Although chief state school officers, or their designees, are often ex officio members of state teacher pension boards.

starters, pension plans are a large and growing expense for school districts and state governments, consuming scarce resources that might be put to better use. Sure, other sectors feel the pinch of retirement costs, but the cost escalation in education has been more pronounced. Data from the U.S. Department of Labor show that employer costs for public pensions rose sharply over the last decade, from 11.9 percent of salaries in 2004 to 17.1 percent in 2013 (see figure). By contrast, employer retirement benefit costs for private-sector professionals over the same time period remained nearly flat, between 10 and 11 percent of salaries. These figures do not include worker contributions, which for educators are often 5 percent or more of salary and have increased as well. Nor do they include retiree health insurance costs, which can be substantial for many school districts, given that most teachers retire before they become eligible for Medicare. Case studies in several urban districts find that these costs increased dramatically in recent years and are projected to continue to rise, sharply in some cases.[3]

There is also an ongoing financial threat posed by massive unfunded liabilities in many teacher pension plans. State and local pension plans are estimated to have in excess of $4 trillion in unfunded liabilities, with K–12 pensions representing roughly half of that total.[4] As states consider reforms, it is important to ask if current pension plans represent the most efficient way to recruit and retain a high-quality teaching workforce.

Many state school chiefs believe there isn't much role for an SEA in pension reform, in part because pension policies appear to be the domain of state pension boards or because legislatures tend to be the ones to drive change. But that sells short the SEA's potential influence. In practice, state education leaders should take an active interest in pensions, not only because of the education system's role in creating the liabilities, but also because of how pension changes might affect teacher quality and school staffing. As pension liabilities continue to rise, state chiefs need to help educate district leaders on how their decisions affect pensions in ways they may not consider. And, of course, given that pensions are a key part of teacher benefits, state chiefs should understand how incentives built into teacher retirement plans can affect retirement behavior and school staffing.

This paper is intended to assist school chiefs in playing an active, and needed, role in pension debates. We begin with a discussion of the typical teacher pension and examine the incentives it creates for work and retirement. We

3. Dara Zeehandelar and Amber M. Winkler, *The Big Squeeze: Retirement Costs and School District Budgets* (Washington, DC: Fordham Foundation, 2013).
4. Robert Novy-Marx and Joshua Rauh, "Public Pension Promises: How Big Are They and What Are They Worth?" *Journal of Finance 66*, no. 4 (2011): 1211–1249.

then briefly review the key cost drivers and their loci of control, and examine some alternative plans that have been enacted or considered. Finally, we discuss important ways in which state school chiefs can contribute. Particularly important in this regard is the development of state systems that tie pensions to teacher workforce data, particularly data on teacher effectiveness. These systems raise very interesting possibilities for using pension plans to improve the quality of the teacher workforce.

HOW TEACHER PENSION PLANS WORK

Most educator retirement plans are administered at the state level, although a few municipal plans remain (for example, in New York City, Chicago, and St. Louis). Nearly all of these state or municipal plans offer what's called final average salary defined benefit plans. Eligible teachers receive a yearly pension that is some percentage (say, 75 percent) of their final working salary for each year they are alive after retiring. The pension amount often increases by an annual cost-of-living increase of around 2 to 4 percent.

Each plan has its own rules determining employee contributions, eligibility, vesting, the pension amount, mobility (across districts and across states), and caps. In most locales, teachers must pay a portion of their salary to the pension fund, and that portion varies by system. Eligibility rules are typically based on some combination of age and years of service. In Missouri, for example, teachers are eligible for a full pension if they have 30 years of service or have reached age 60 with at least 5 years of service, or if age added to service years totals at least 80.[5] Teachers are not automatically vested in their pensions—meaning they do not have a full right to them—when they start working. It typically takes three to five years to become at least partially vested, although the number of states that require at least 10 years is growing.[6]

Rules create powerful incentives for teachers to either stay or leave as they approach or reach particular years of eligibility. For instance, in Missouri, vesting occurs near a typical teacher's 25th year of service, and the current value of a teacher's pension can jump by $200,000 in a single year. By teaching just one more year beyond the 24th year, a teacher earns not only a salary, but also an additional $200,000 in pension wealth. Other incentives work in the opposite manner. The value of a Missouri teacher's pension actually drops if he or she continues working beyond age 56. Unsurprisingly, educators tend to retire at the age or experience level that maximizes pension wealth—typically when they are in their mid- to late 50s.[7]

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5. Many states also have rules that permit a teacher to retire with reduced benefits at a younger age or with fewer service years. In Missouri, in a provision called "25 and out," a teacher can retire and begin collecting benefits immediately, at any age, once he or she has worked in the system for 25 years. Like similar provisions in other state plans, there is a penalty in benefits when someone retires via 25 and out. Even with the penalty, however, the provision is still quite lucrative for teachers who wish to leave the profession prior to meeting other retirement-eligibility thresholds.
6. Thirteen states now require 10 years of service for new teachers to be vested (up from nine states in 2008). See Kathryn M. Doherty, Sandi Jacob, and Trisha M. Madden, *No One Benefits: How Teacher Benefit Systems Are Failing Both Teachers and Taxpayers* (Washington DC: National Council on Teacher Quality, 2013).
7. See next page

This strong backloading of benefits in teacher pension plans has another important consequence: it imposes very high penalties for mobility. An educator who moves from state to state (or sometimes district to district) over a career will have much less pension wealth than an educator who works an entire career within a single plan, because plans don't fully honor experience from other systems. This has raised concerns, given that the educated labor force, including teachers, has become more mobile.[8] One study finds that mobility costs from pensions inhibits the ability of urban districts to recruit high-quality school leaders and teachers from suburban districts.[9]

Table. Cost Drivers That Affect Pension Liabilities

Key cost drivers	Site where costs are typically determined
Past payments to pension fund	State legislatures
Pension fund earnings	Economic trends and fund expectations
Pension eligibility, earnings, and vesting rules	Pension plans, state legislature
Pension COLAs	Usually state legislature
Choice of plan for new entrants	Districts and state legislature
Level of employee contributions	Pension plans (some portion required by employer; the rest is often negotiated at the district level)
Final salary	Districts (via salary schedules, contracts, COLAs)
Teacher retention and attrition	Teachers and district staffing policies
Eligibility for health care before Medicare age and level of benefits	Usually negotiated by district; in some cases determined at state level

Note: COLA = cost-of-living adjustment.

7. Robert M. Costrell and Josh B. McGee, "Teacher Pension Incentives, Retirement Behavior, and Potential for Reform in Arkansas," *Education Finance and Policy 5*, no. 4 (2010): 492–518; Cory Koedel, Shawn Ni, and Michael Podgursky, "Who Benefits From Pension Enhancements?," *Education Finance and Policy* (forthcoming); Leora Friedberg and Sarah Turner, "Labor Market Effects of Pensions and Implications for Teachers," *Education Finance and Policy 5*, no. 4 (2010): 463–491. The literature on how these incentives affect the quality of the labor force is limited; one study finds no net teacher effect on student test scores: Cory Koedel, Michael Podgursky, and Shishan Shi, "Teacher Pension Systems, the Composition of the Teaching Workforce, and Teacher Quality," *Journal of Policy Analysis and Management 32*, no. 3 (2013): 574–596.
8. Robert M. Costrell and Michael Podgursky, "Peaks, Cliffs, and Valleys: The Peculiar Incentives in Teacher Retirement Systems and Their Consequences for School Staffing," *Education Finance and Policy 4*, no. 2 (2009): 175–211.
9. Koedel, Podgursky, Shi, 2013.

Layers of Factors Affecting Pension Liabilities

Many different factors work together to affect the total pension bill, including some practices and policies that originate in districts and SEAs. (See the table for a partial list of cost drivers.) News reports often cover stories about high pension obligations due to skipped payments to pension funds or failure to meet lofty investment targets. For instance, when pension fund asset values declined during the recent financial crisis, but pension funds disbursed benefits assuming 8 percent returns, unfunded liabilities rose.

Pension plans' differing rules for eligibility, earnings, and vesting can have a large effect on total costs. Where teachers can earn a full pension at a younger age, or where the pension amount depends on a single year's earnings (versus an average of several years), pension costs will be higher. These rules are often set in the legislature and then considered fixed for all current employees. Legislatures also award cost-of-living adjustments (COLAs), which drive up pension costs further. Some states have in recent years passed legislation to lower COLAs, though in some cases those moves have been challenged in court.

In the face of rising costs, some states, like Rhode Island and Florida, have considered or are considering alternatives to the basic structure of their retirement plans for teachers. Alternatives to *defined benefit* plans include *defined contribution* plans, where (as with the 401(k) plans typically received in the private sector) employers and employees contribute funds that belong to the employee, and *cash balance* plans, where each year of their career, employees earn a fixed amount toward their pension coverage. Finally, 16 states let charter schools choose whether or not to participate in the state pension plan. In most cases, charters choose not to participate.

Contract law generally protects current teachers from changes in the basic structure of their pension plans. So in most states, changes are for new

Alternatives to Defined Benefit Plans

Defined contribution plans | Similar to 401(k)s, where employees and employers contribute funds that grow and belong to the employee. Cash balance plans—Employees earn a fixed amount toward their pension each year.

Hybrid plans | Some combination of defined benefit and defined contribution earnings.

Social Security participation plans | Some (though not all) defined benefit plans exempt participants from Social Security. In some states, proposals have been made to move teachers into Social Security.

entrants only, and decisions about those systems are determined in the legislature (and in some locales, with participation negotiated at the district level).

Also relevant to pension liabilities is the employee contribution. The more the employee contributes, the lower the state's costs. In most plans, employee contribution is set as part of the pension rules, such that employees contribute some fixed percent of their salary (say, 3 percent) to their pensions. Over the years, some districts have negotiated the employee share so the district is paying all or part of the employee portion, thereby increasing the burden on districts.

Salaries, of course, are determined at the district level. The higher the final salaries of teachers, the greater the pension costs. While state legislatures generally determine the percent of final salary that determines the pension annuity, it is the district that determines the actual final salary used in the pension benefit calculation. When districts award pay raises to very senior teachers, those pay increases translate into higher lifetime pension earnings. When districts flatten salary structures so that a teacher earns the same over a career, but more pay is loaded on the earlier years, unfunded liabilities are likely to be lower.

Another cost element that can be attributed to districts is teacher attrition and retention, yet district leaders rarely consider the relationship between their policies and practices and the resulting cost to pensions. For instance, districts often work to encourage retention of teachers early in their careers. This makes sense as an attempt to stabilize the profession. But in a district where pensions fully vest after five years, say, retaining a teacher just over that time marker costs much more over the long term than retaining a teacher who is just below it—something district leaders may not consider. At the other end of the continuum, districts may decide to wait out (rather than push out) ineffective teachers just a few years from retirement, without factoring in the huge jump in pension costs those few remaining years will add, beyond the teacher's salary.

Finally, health benefits for retired teachers create an additional retirement cost. Here again, districts generally are responsible for awarding these benefits (although in some cases the state does). The health benefit takes the form of covered health insurance between retirement age and age 65, at which time the retired teacher becomes eligible for Medicare. Since the retirement age of the vast majority of teachers is well below 65, this creates a large demand for retirement health insurance. Where state pension plans allow lower retirement ages, these costs are higher.

THE ROLE OF STATE CHIEFS AS SYSTEMS STRUGGLE WITH RETIREMENT COSTS

State education leaders often believe that high pension costs are not their responsibility—understandably, given that many key cost factors are under the control of the state legislature. Education leaders can lobby for change, but ultimately the pension policy is not their charge. And practically speaking, elected state chiefs may be relieved to avoid the ire from labor unions that comes from supporting pension changes. However, there are still roles they can play to mitigate the growing problem of retirement costs.

Role #1: Illuminating Retirement Plan Effects on Teacher Quality

Pension fund boards considering changes in plans typically focus only on the fiscal effects of the changes, not the labor market or teacher quality effects. However, pension plan reforms can dramatically affect school staffing. As described earlier, rules on vesting and retirement ages can serve both to keep teachers in the workforce during certain years and to push them out in others. Furthermore, where pension plans do not allow portability of benefits, more mobile teachers may prematurely leave the profession. SEAs can examine pension rules and proposed changes for their likely effects on districts' access to labor. Where pension plans constrain the workforce, the state's school districts may face a smaller pool of prospective teachers. Good data on topics such as the age distribution of retiring teachers and hiring data for out-of-state teachers will help leaders explore the effects—actual and potential—of various pension rules.

It isn't just the size of the talent pool that matters, but also how the pension plan affects teacher quality. Those defending traditional defined benefit plans have argued that pension changes threaten the quality and stability of the workforce, but there is scant data to support that argument.[10] It is possible that teachers vary—by subject matter, grade level, gender, effectiveness—in how they respond to pension changes. SEAs should evaluate retirement patterns in these terms, and in response advocate for retirement systems that work to retain the best teachers, especially those in high-need fields, such as special education and STEM subjects (science, technology, engineering, and mathematics).

Another important issue that deserves consideration is the trade-off between generous retirement benefits and current pay. In the face of rising college debt and housing costs, young people considering a career in teaching (especially

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10. An example of this argument is found in materials produced by the Illinois Federation of Teachers and available on their website: www.ift-aft.org/memberresources/TeachersPreK-12/Pension-sTeacher.aspx (accessed October 21, 2013).

STEM majors with good nonteaching alternatives) may prefer more up-front remuneration rather than a generous, but very distant, retirement package.[11] In fact, one study found that younger teachers would rather earn 17 cents more now than have $1 added to their pension fund for later.[12] Such a finding suggests that if some of the current spending on pensions were reallocated, perhaps to salary, it would be easier to recruit and retain younger teachers.

Leaders can leverage pension changes to support a talent-driven agenda only if they better understand the effect of the current retirement system on teacher talent. For example, some states offer plans designed to keep teachers teaching past retirement (often called Deferred Retirement Option Plans, or DROP plans). Generally these plans are open to all teachers, regardless of quality. Chiefs might call for policies that make these plans available only to the best teachers or to those teaching in high-demand fields. Plans could be designed to be actuarially neutral in their effect on pension system finances. Indeed, it is possible that a well-designed plan could actually raise workforce quality and lower pension system liabilities.[13]

So while pension boards and legislatures may be focusing primarily on long-term cost implications, state education chiefs can be examining proposals with the lens of enhancing human capital for the state's schools.

Role #2: Building Transparent Systems That Link Pension Earnings to Teacher Quality Data

Planning for the state's teaching needs requires solid information on how retirement benefits affect human capital. It is rare that state school chiefs have access to basic descriptive statistics on pension systems. For example, many chiefs do not have ready access to the number of teachers retiring from high- or low-performing schools or from high-demand fields, or whether retirement rates differ by teacher effectiveness. That is partly because retirement data are typically housed in state or municipal worker data systems, while teacher data are housed in the SEA. As states face continued pressure from pensions, however, creating access to such data is critical to understanding differential effects of pension rules and then tailoring retirement plans to enhance the quality of the teaching workforce.

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11. McGee and Winters examine the potential for cost-neutral changes in total teacher compensation in large school districts. A scaled-back retirement plan for teachers, more in line with private-sector standards, would permit a substantial increase in pay for younger teachers. See Josh McGee and Marcus A. Winters, "Better Pay, Fairer Pensions: Reforming Teacher Compensation," *Civic Report 79* (September 2013): 1–32.
12. Maria D. Fitzpatrick, "How Much Do Public School Teachers Value Their Retirement Benefits?" (unpublished manuscript, 2012).
13. Fitzpatrick ("How Much Do Public School Teachers Value Their Retirement Benefits?," unpublished manuscript, 2012) reports evidence suggesting that public school teachers place a lower value on future pension wealth than discount rates used by pension funds. This means that a bonus program could be designed that would entice highly effective teachers to remain on the job and defer retirement at much less cost than the loss in pension wealth for the teacher. This would raise student achievement overall and reduce pension fund liabilities.

State education chiefs can lead the development of statewide data systems that link pension earnings and teacher data (and, in some locales, student data). In Tennessee, the SEA has been matching teacher effectiveness data with pension system retirement records and finding that teacher retirement behavior varies across levels of teacher effectiveness. As the data systems mature in other states, those data can be woven into pension systems to inform retirement policies that more proactively recruit, retain, and motivate quality educators.

Role #3: Alerting Districts to Cost Factors Controlled at the District Level

SEAs can do much more to call attention to how district decisions and practices affect pensions. Districts can contribute to rising pension costs through salary structures and through practices that affect teacher retention and attrition. SEAs can help districts act responsibly by educating them on the implications of their choices. For instance, where districts award across-the-board salary raises in the form of a percentage raise (say, 4 percent), the most senior teachers receive the largest pay bump in dollars, yielding higher final salaries and a corresponding increase in the pension annuity. If, instead, districts awarded the same total funds in the form of a fixed dollar amount to each teacher, the pension implications would be lower, even though the raise could be set up so that the lifetime wage earnings of a given teacher would be the same.

One way to bring to light the implications of district salary awards that unduly drive up pensions would be to require districts to compute and report the changes in pension liabilities associated with salary awards. A $1 increase in final salary is generally estimated to have more than a $10 impact on pension liabilities—yet such calculations are unknown in most districts.

CONCLUSION

Given that state school chiefs have little formal leverage to make changes to pension plans, it is understandable that they have not taken a lead role in influencing pension policy. But pension plans matter to the work of SEAs and their chiefs, especially considering the financial threat imposed by the rising cost of retirement benefits and the powerful effect pension system incentives have on shaping the teaching workforce. Toward that end, state school chiefs should take on new roles in pension debates and participate in a way that leverages their position and interests in light of the existing barriers.

As SEAs work with their systems to improve productivity, it is important that retirement benefits not be overlooked. Large sums of money are invested annually in retirement benefit systems, and these systems need to be scrutinized with an eye toward maximizing school performance. There are many different pension changes afoot. Some are better for students than others, and state school chiefs can play an important role in promoting those that are good for students as well as educators.

About the BSCP Center Partners

The SEA of the Future is a product of the **Building State Capacity and Productivity Center (BSCP Center)**, which focuses on helping state education agencies (SEAs) throughout the country, as they adapt to reduced fiscal resources and increased demands for greater productivity. As state Departments of Education are facing the daunting challenge of improving student performance with diminishing financial resources, the BSCP Center provides technical assistance to SEAs that builds their capacity to support local educational agencies (LEAs or districts) and schools, and to the other 21 regional comprehensive and national content centers that serve them, by providing high-quality information, tools, and implementation support. The partners in the BSCP Center are Edvance Research, Inc., the Academic Development Institute, the Center on Reinventing Public Education (University of Washington), and the Edunomics Lab (Georgetown University).

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Academic Development Institute (ADI) www.adi.org | The Academic Development Institute (ADI) is a nonprofit institution founded in 1984 with a portfolio of tools and resources for state agencies, school districts, communities, and families. ADI has held contracts with state education agencies, the Illinois State Board of Education, and the U.S. Department of Education, most recently running the Center on Innovation & Improvement, a national content center for the U.S. Department of Education. ADI is now a partner in three national content centers—Innovations in Learning, School Turnaround, and Building State Capacity and Productivity, and is based in Lincoln, Illinois.

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Edunomics Lab at Georgetown University www.edunomicslab.org | The newly formed Edunomics Lab at Georgetown University is one of a handful of organizations in the nation considering school finance through a productivity lens at the district level, and is uniquely positioned to contribute meaningful insights to work within the states.

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