

Leveraging Productivity for Progress: An Imperative for States

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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

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.

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

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.

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.

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

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

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.

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

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

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.