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Volume 3

THE SEA OF THE FUTURE

Building the Productivity Infrastructure

Editors:
Betheny Gross
Ashley Jochim

Contributing Authors:
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Paul T. Hill
Kelly Hupfeld
Lawrence Miller
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Building State Capacity and Productivity Center
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The Productivity Infrastructure: Laying the Foundation for a More Productive Education Sector

Betheny Gross
Center on Reinventing Public Education

May 2014

Productivity is clearly a priority in state education agencies (SEA). The first two volumes of The SEA of the Future made the case for a "productivity mindset" in our country's state education agencies. Authors in these volumes argued that SEAs must fight against focusing exclusively on regulatory compliance to find more ways to provide local autonomy and consistently measure, assess, and hold themselves, their districts, and schools accountable for both performance and costs. Though these essays sharply challenged the traditional work of SEAs, state leaders responded enthusiastically, saying, "Yes. Where do we start?"

In this third volume of the series, we introduce the "productivity infrastructure." The productivity infrastructure constitutes the building blocks for an SEA committed to supporting productivity, innovation, and performance—from the state chief to the classroom. These building blocks include:

- Policies to expand the flexibility of district and school leaders and allow them to make choices about resource use.
- State funding arrangements that fund students, not programs.
- Information systems that allow district and school leaders to accurately assess the productivity of policies and practices.

The essays in this volume offer a rich discussion of each of these elements.

Paul Hill of the Center on Reinventing Public Education (CRPE) begins the volume by explaining why a more productive education system requires states to systematically review policies and practices to assure local agencies have the flexibility and information they need to seek and implement new and, hopefully, more productive solutions.

Next, Larry Miller, also of CRPE, teams up with Marguerite Roza and Suzanne Simburg, both of the Edunomics Lab at Georgetown, to discuss how new funding and allocation models can encourage productive local decisionmaking and how states can seize the rare opportunity many now have to redesign their funding allocation models.

Kelly Hupfeld of the University of Colorado Denver digs deep into new policy frameworks that will provide local districts and schools with the flexibility and leverage they need while maintaining quality support and accountability at the SEA.

Finally, Marguerite Roza discusses the data needed to support districts and schools as they seek new, more productive solutions.

Together, these essays provide a foundation for the work of SEAs. The partners at the Building State Capacity and Productivity (BSCP) Center are committed to helping education agencies transform these ideas into real policies and practices that are right for their own states.

The BSCP Center's work includes, among other important topics, support for improving a state's Differentiated System of Recognition, Accountability and Support; managing performance; assuring functional coherence in the SEA; developing effective communication systems; and developing and managing talent. Information about these efforts is available at www.bscpcenter.org/publications.

SEAs can engage in this work with the BSCP Center partners in a variety of ways. The BSCP Center regularly offers webinars that can be viewed in real-time or from an archive at www.bscpcenter.org/events. Several webinars from Marguerite Roza on financing districts and schools are currently available.

> The partners at the BSCP Center are committed to helping education agencies transform these ideas into real policies and practices that are right for their own states.

SEA leaders seeking more intensive and focused support can participate in topic-based and collaborative problem-solving sessions called benchmarking activities. A benchmarking activity on building the internal talent for an SEA with a productivity focus will begin in spring 2014 and finish in fall 2014. Ideas for future benchmark topics are always welcome.

Finally, SEAs seeking more comprehensive support can request a direct consultation from the BSCP Center partners, who will work in close partnership with the regional content centers to provide focused and context-specific services.

Building State Capacity and Productivity Center
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How State Education Agencies Can Help Districts and Schools Become More Productive

Paul T. Hill
Center on Reinventing Public Education

May 2014

State education agencies (SEAs) definitely have a role to play in helping districts and schools become more productive. They cannot and should not fully determine how districts and schools operate. But they can provide the data, incentives, and flexibility that will drive people to seek and pursue the strategies that produce the highest ratio of student learning per dollar spent. Right now, few state policies and practices encourage local leaders to view their decisionmaking through the lens of productivity. But with the principles presented in *The SEA of the Future: Building the Productivity Infrastructure, Volume 3*, states can start to lay the infrastructure for a more productive education system.

Three things about today's public education systems work against productivity:

1. Costs are hidden and unknown.
2. Rules, regulations, and agreements force schools to do things that tie up resources that could be used to greater effect.
3. Many barriers prevent exploration of new ideas.

HOW ARE COSTS HIDDEN?

Even if district and school leaders wanted to make the most effective use of every penny, they do not have the basic information they need about the costs of different people, resources, and processes.

Why the ambiguity? As Marguerite Roza details in in her essay, "A State Information System to Support Improvements in Productivity," most districts do not track expenditures in a way that enables them to make meaningful productivity calculations. Districts generally estimate how much is spent per school or per pupil by averaging the total dollars in the district across schools and students. Some districts go further in calculating a weighted average based on the number of low-income, special education, or English language learners in the school.

Neither of these approaches transparently reports the amount of resources available to support individual schools or students. Indeed, variation in spending across schools within districts greatly exceeds the variation between school districts. A 2007 study of funding inequities found that one-third of the schools in a set of Texas districts had spending levels that deviated from the district average by 15 percent (equal to about $225,000 for a school of 500 when the average non-targeted, non-categorical spending is $3,000 per pupil).[1]

1. Betheny Gross, Scott De Burgomaster, Kacey Guin and Marguerite Roza, "Do States Fund Districts Fairly?" *Education Next 7*, no. 4 (Fall 2007): 68-73.

Teacher salary averaging is a critical source of ambiguity in school finance. Averaging occurs when districts charge schools for teacher salaries by using a districtwide salary average rather than each teacher's real costs (which vary based on experience and other factors). A school with many newer teachers is charged more for salaries than its teachers actually earn, and the extra funds go to better-paid teachers in other schools. Roza and Hill found that salary averaging can increase or decrease a school's budget dramatically.[2] Schools that gain from salary averaging receive, on average, $100,000 more than they would if they were funded solely based on enrollment. Schools that lose from salary averaging receive, on average, $100,000 less. Schools with especially high concentrations of high or low teacher salaries revealed even greater divergences—up to $1 million.[3]

To make productive choices, leaders need data on how much particular services and human resources cost in real terms.

Average expenditure calculations also ignore the fact that some schools make far more use of centralized services than others. In Newark, almost half of the district's nearly $1 billion in operating revenues are managed directly by the central office.[4] Schools get access to extra central office services because they house a special program, an influential principal cuts a deal, or central office staff members who provide services to schools prefer to work in some schools and avoid others. None of these strategies allow for a transparent accounting of resource allocations.[5]

To make productive choices, leaders need data on how much particular services and human resources cost in real terms.

HOW ARE RESOURCES TIED UP?

Even if we could account for the funds that go into schools, the people responsible for providing public education are highly restricted in what they can actually do. Mandates must be fulfilled and rules followed, even if people in schools see better ways to use the resources available to them.

2. Marguerite Roza and Paul T. Hill, "How Within-District Spending Inequities Help Some Schools to Fail," in *Brookings Papers on Education Policy*, ed. Diane Ravitch (Washington, DC: Brookings, 2004).
3. Ibid.
4. Lawrence J. Miller and Lourdes N. Alers-Tealdi, "Can a Central Bureaucracy Reinvent Itself Into a Market Maker? A Case Study of Portfolio Management in Newark, New Jersey," in *Public Administration Reform: Market Demand from Public Organizations*, ed. Y.K. Dwivedi et al. (New York: Routledge, 2013).
5. Marguerite Roza, *Allocation Anatomy: How District Policies that Deploy Resources Can Support (or Undermine) District Reform Strategies* (Seattle: Center on Reinventing Public Education, 2008).

Consider these examples:

SEAs set licensing requirements that prevent schools from hiring people without specific (and often arbitrarily defined) training and experience, create prescriptive teacher and principal evaluation protocols, mandate professional development programs, and buy textbooks and curriculum that all districts must follow.

State legislatures set days and hours of operation for schools, allocate funding in well-defined programmatic categories that limit the freedom of schools and districts on how they spend their money, require districts to evaluate teachers at particular intervals, and mandate a minimum administrative structure for a school, no matter its size.

The federal government defines what a highly qualified teacher looks like, requires that teachers paid from federal funds be given some duties and not others, and mandates that schools use particular forms of testing to assess student learning.

Local school boards can decide what methods and materials schools may use, and assign staff to a school without regard to the school's needs and priorities. Local school boards also create mandates for particular schools when they intervene in staffing or programming decisions on behalf of constituents.

Districts constrain themselves with labor agreements that grant automatic salary increases based on seniority and additional educational attainment, whether or not the education is relevant to the teacher's responsibilities or the school's needs.[6] These agreements can also limit the minutes or days that teachers can be in contact with students, the number of minutes principals can conduct staff meetings, and the number of students teachers can have in a classroom.[7]

6. There is an extensive literature in economics about the disconnect between the bases on which teacher pay is set in public education and consequences for students. Important examples include: Daniel Aaronson, Lisa Barrow, and William Sander, "Teachers and Student Achievement in the Chicago Public High Schools," Journal of Labor Economics 25, (2007): 95-135; Dan Goldhaber and Dominic Brewer, "Why Don't Schools And Teachers Seem To Matter? Assessing The Impact Of Unobservables On Education Production," Journal of Human Resources 32, no. 3 (1997): 505-523; Dan Goldhaber, Dominic J. Brewer, and Deborah J. Anderson, "A Three-Way Error Components Analysis of Educational Productivity," Education Economics 7, no. 3 (1999): 199-208; Eric A. Hanushek, "The Failure Of Input-Based Schooling Policies," The Economic Journal 113, no. 485 (February 2003): F64-F68; National Council on Teacher Quality, Increasing the Odds: How Good Policies Can Yield Better Teachers (Washington, DC: National Council on Teacher Quality, 2005); T. John Kane, Jonah E. Rockoff, and Douglas O. Staiger, "What Does Certification Tell Us About Teacher Effectiveness? Evidence from New York City," working paper #12155 (Cambridge, MA: National Bureau for Economic Research, 2006); Raegen Miller and Marguerite Roza, The Sheepskin Effect and Student Achievement: De-emphasizing the Role of Master's Degrees in Teacher Compensation (Washington, DC: Center for American Progress, 2012); Steven Rivkin, Eric A. Hanushek, and John F. Kain, "Teachers, Schools, and Academic Achievement," Econometrica 73, no. 2 (2005): 417–458.

Some mandates were initially justified as increasing school effectiveness or protecting vulnerable students—for example, class size limits, teacher licensing, seat-time requirements, categorical programs targeting resources to particular students, and mandates that drive salary decisions and protect school employees. However, none were based on evidence that these actions produced better results, given their costs, than other possible uses of the same funds. Each mandate was the product of targeted advocacy, not an integrated theory of school effectiveness. Instead, they were enacted one at a time and often for different reasons.[8] No single mandate is crippling, but the cumulative effect is.

WHY IS IT SO HARD TO EXPLORE NEW POSSIBILITIES?

People responsible for producing student outcomes, particularly school leaders, must be able to change what they do and make trade-offs.

Education, like any other field, can make progress only by exploring new possibilities (which means experimenting with new uses for time, money, and methods), adopting what works, rejecting what doesn't, and promoting widespread uptake of the most effective known methods. This means that the people responsible for producing student outcomes, particularly school leaders, must be able to change what they do and make trade-offs, deciding to spend less on one resource or activity and more on another. Perhaps a leader chooses to cut the number of administrators in the school and use that money instead for online resources that individualize instruction for students.

Also like any other field, education cannot afford to assume that what is considered state of the art at any one time is applicable across all student populations and school contexts—or even that it is truly the best option. Unfortunately, education policy discourse often presumes that the best ways of promoting student learning are well known and can be encoded in rules that apply to all schools. These convictions persist against strong evidence to the contrary. For example, the conventional wisdom of the importance of small class sizes ignores the fact that some students learn

7. David P. Baker, Rodrigo Fabrega, Claudia Galindo, and Jacob Mishook, "Instructional Time and National Achievement: Cross-National Evidence," *Prospects* 34, no. 3 (2004): 311–334.
8. For a more complete account on the constraints imposed on experimentation and flexible use of public funds see Paul T. Hill, Marguerite Roza, and James Harvey, *Facing the Future: Financing Productive Schools* (Seattle: Center on Reinventing Public Education, 2008).

at a high level without ever setting foot in a school building, taking online courses, each with hundreds of students enrolled.

Mandates do more than tie up funds on uses whose effectiveness is not known. They also prevent experimentation with new methods of instruction and other student services that might be more effective, and prevent the movement of money, teachers, and students to more effective and efficient schools and programs.[9] Unless they want to violate express requirements, laws, contracts, or policies, school and district leaders cannot:

- Regroup students to teach some courses in very small classes and other courses, which need less individualization, in much larger classes.
- Shift money from non-instructional uses such as transportation, facilities, or rent to instructional uses such as more class time, individualized instruction, or online curriculum.
- Hire experts to teach subjects that regular teachers are poorly prepared to teach.[10]
- Make trade-offs between the use of live teachers and online resources.

None of these options is proven effective in every case, and there is no reason to suggest that they should be imposed on all schools by mandate. However, they do open up possibilities for much more effective instruction in some cases by relying entirely on existing resource investments, rather than special "innovation" funds or programs.

HOW SEAS CAN BUILD A PRODUCTIVITY INFRASTRUCTURE FOR PUBLIC EDUCATION

SEAs can lead the change to more productive education by creating systems that encourage everyone to leverage their limited resources for better outcomes. Building a productivity infrastructure will require:

- Data that transparently identify resource use and outcomes.
- Incentives that encourage attention to both costs and outcomes.
- Autonomy to choose among different possible uses of funds and experiment with alternative practices.

9. Unfettered experimentation can also result in the waste of resources. Risk-taking must be constrained by performance-based oversight to protect students and taxpayers from waste, fraud, and abuse.
10. Larry Summers, former chief economic advisor to the White House, famously remarked that he would not be permitted to teach an economics class in our public high schools.

Data on Expenditures and Outcomes

Data on expenditures are important—to assess the productivity of a school or instructional program, it is necessary to know how much is spent on it, as well as its outcomes. Given the likelihood that the most productive use of resources for one group of students might not be the most productive for another, and that implementation of reforms will differ from place to place, this requires a degree of granularity of evidence that current public education accounting systems cannot provide.[11]

In a system built for productivity, schools and districts would be encouraged to seek solutions that deliver more learning gains per dollar spent.

As Marguerite Roza details in her essay, "Funding for Students' Sake: How to Stop Funding Tomorrow's Schools Based on Yesterday's Priorities," use of these data to inform decisions at the system level would require that expenditures be accounted for at the level of the school and the individual child and be merged with outcomes data in the same academic year that they were generated. The state and school district would also need to conduct detailed analyses to identify those schools that yielded the greatest results per dollar spent. Schools could use these same data to assess their own productivity, overall and for particular pupils, and to identify programs that were cost effective, including those offered by alternative providers.

These approaches require significant investment in data, analytic, and accounting systems at the state and district levels, whether employees or contractors do the work.

Incentives to Encourage a Focus on Expenditures and Outcomes

In a system built for productivity, schools and districts would be encouraged to seek solutions that deliver more learning gains per dollar spent. This encouragement would come in two forms: funding and oversight.

11. For example, in Texas the financial reporting categories are so broad that it is difficult, if not impossible, to know how much is spent to actually teach any particular subject or any student.

A state that controls inputs (for instance, by mandating specific class sizes, school administrative structures, salaries, and use of time) can never know whether it is making the most productive use of its funds. As Larry Miller, Marguerite Roza, and Suzanne Simburg discuss in their essay, "Funding for Students' Sake: How to Stop Funding Tomorrow's Schools Based on Yesterday's Priorities," one of the biggest sources of constraint comes from state funding formulas that dictate the set of programs schools must offer and the staff required to offer them. These funding models discourage experimentation and result in impossible trade-offs among different types of resources.

A more productive education system would push funding decisions down to district and school level decisionmakers, and would enable districts and schools to benefit when they find a new, more efficient use of resources. Cost savings in one area can be reinvested in another.

A more productive education system would also hold schools and districts accountable for the results they achieve. The state's oversight role in school finance has traditionally been conceptualized as compliance monitoring. States must instead focus on how existing dollars can be leveraged toward greater effect. This might include an annual performance review of all schools and districts for productivity to identify those doing especially well or poorly at resource utilization.[12] States should also consider integrating financial information into existing report cards, much like corporate leaders use balanced scorecards to assess financial outcomes alongside performance measures.

School Autonomy to Allow Trade-offs and Experimentation with Practice

Educators and administrators need freedom to make trade-offs on behalf of student learning and to experiment with new ideas about the delivery of education services. Rarely do they have the power to do so. Autonomy is the linchpin of a productivity infrastructure.

As Kelly Hupfeld discusses in her essay, "Accelerating Productivity Through Autonomy," a more productive education system would ensure that those in decisionmaking roles—especially central office administrators and principals—have the power to leverage their existing resources for greatest effect. This means ending the use of narrowly defined categorical programs that often arbitrarily restrict how funds are used, and moving

12. Performance oversight arrangements could include a state recovery district, like those now operating in Louisiana, Tennessee, and New Jersey, that could take control of consistently ineffective schools that the local Board had refused to close or replace. For more on recovery school districts see Paul Hill and Patrick Murphy, *On Recovery School Districts and Stronger State Education Agencies: Lessons from Louisiana* (Seattle: Center on Reinventing Public Education, 2011). See also Nelson Smith, *The Louisiana Recovery School District: Lessons for the Buckeye State*, (Washington, DC: The Thomas B. Fordham Institute), accessed June 27, 2012.

toward student-based budgeting models that make students, not particular staff or school models, the beneficiaries of state aid.[13]

Because human resources consume the vast majority of education dollars, flexibility over staffing is the single most important investment states can make. This includes control over hiring decisions, pay, evaluation, and staffing models. To become more productive, schools need freedom to experiment with teacher teaming, variable class sizes, novel contracts to employ business or university-based experts to teach math and science, and new ways of combining technology-based and hands-on teaching.

Because human resources consume the vast majority of education dollars, flexibility over staffing is the single most important investment states can make.

There is no reason to think the group of people now employed in schools and school districts have a corner on ideas about how to accelerate student learning. To the contrary, many ideas about how to make K-12 schools more productive—and how to match instructional and student services approaches to the needs of definable groups of students—will come from other educational institutions and from people with backgrounds in learning theory, computer science, and the arts.

This freedom would unlock new models that look totally different than what is now considered basic to public education. Rather than school buildings housing all students for six hours a day, five days a week, for example, an innovative—and parsimonious—blended learning approach may require students to attend school only one day a week, thus allowing one school building to house five different schools. If instruction were only equally effective in the new schools, they would have lower costs, and therefore be more productive.

CAN ALL THE PARTS COME TOGETHER?

Reorienting our public education system to encourage greater attention to productivity will be a complicated endeavor: the systems that shape productivity reach deeply into how we finance, assess, and regulate K-12 public education.

13. California reduced the number of categorical aid programs from over 200 to around 30 with the passage of the Local Control Funding Formula Act.

The system sketched above breaks from traditional education systems but does not have to be built from scratch. Many of the crucial system elements—pupil-based funding and accounting, school-level control of spending, public oversight of schools based on performance rather than compliance, schools free to experiment with new modes of staffing and teacher compensation, and openness to new providers and technologies—are present, in part, in states across the country.

State education agencies do not have the authority to directly affect all of the change that needs to take place across our educational systems. They do, however, have a central role in elevating the quality of data available to districts and schools and establishing the incentives and autonomy that allow district and school leaders to make bold steps toward productivity. Other essays from *The SEA of the Future: Building the Productivity Infrastructure, Volume 3* will discuss these and other reforms taking hold in states across the country, and how SEAs can lead the charge in creating an education system built for productivity.

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Funding for Students' Sake: How to Stop Financing Tomorrow's Schools Based on Yesterday's Priorities

Larry Miller, Center on Reinventing Public Education
Marguerite Roza, Edunomics Lab
Suzanne Simburg, Edunomics Lab

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One of a state's primary responsibilities is to divvy up the public funds for K-12 schooling. In each state, a set of finance policies determines how the state and local funds are apportioned so that districts and other providers can then apply them to schools and classrooms. Different states use a host of variables and formulas to determine how much each district and school receives. Depending on the state, the allocations may factor in a district's distinctive assortment of student needs, or the district's size, cost of living, degree of urbanicity, and so on. And in some cases, the allocations are dependent on whether students are taught in district schools, charter schools, or online schools.

As important as state allocation formulas are, they don't change much over time, even as what we know about education evolves. While states might tweak their models from year to year—layering new program funds on the old model, or adding ways for districts to retain funds as they lose students—states tend to make major changes only about once every two decades.

"Student performance depends not only on the amount of money we have for education but also on how those funds are used."

In many states, that once in two decades seems to have arrived. Some leaders have come to realize that allocation formulas have big implications for whether a state's education system promotes or inhibits increased productivity in schools. So, now that a few states are seeing some black in their balance sheets after several years of highly constrained state funding, and districts are asking for a share of the new money, forward-thinking state leaders are calling for something in return—namely, that districts and schools make sure the money does more to improve student outcomes.[1] As Colorado State Senator Michael Johnston stated recently, "Student performance depends not only on the amount of money we have for education, but also on how those funds are used."[2]

This focus on getting a greater return on funds has implications not just for districts but also for states. To get better outcomes for the money—an imperative given today's budget strictures and urgency

1. For example, California just approved new finance legislation, and recent or active proposals have emerged in Colorado (defeated at the ballot in 2013), Pennsylvania (the Governor's Expanding Excellence Program), and Ohio (where there were proposals by the governor and the House).
2. Michael Johnston, opening remarks to the School Finance Partnership Dinner hosted by the State Board of Education, March 19, 2012.

for better student results—districts will have to use funds differently going forward.[3] Student-based allocation, also known as weighted student funding,[4] where funds are attached to each student and move with students wherever they go to school, provides the most equitable, efficient, and flexible path toward increased productivity. This essay explains why it is a good idea to allocate resources on the basis of students, and measures several states' progress toward doing so.

HOW DO STATE FORMULAS AFFECT DISTRICT SPENDING?

Student-based allocation provides the most equitable, efficient, and flexible path toward increased productivity.

Education finance formulas not only determine the level of funding a district gets from state and local sources, but also affect the choices districts make regarding how to spend their funds. Funds are often deployed on the basis of purchased inputs (for example, money to fund one teaching position for every 20 students) or historic funding levels (where each district receives some percentage more than it received the previous year). Some allocation formulas link funds to a specific delivery model or program (for example, funds are directed to tutoring, or to keeping Advanced Placement courses small, or to providing anti-bullying initiatives, or to subsidizing smaller schools).

The specifics of state funding formulas vary widely. But what many states have in common is layer upon layer of rules and provisions that limit districts' flexibility, create inequities among districts, and hinder productivity. As states urge districts to try to get more bang for their buck, they will want to take stock of the following ways their allocation policies matter for districts:

Equity and Accountability

If some districts are given more funds than their peer districts with similar student needs, or if the formulas do not recognize districts with greater student needs, then district and school leaders might rightly see the finance system as inequitable. They might then question how

3. Marguerite Roza. "Leveraging Productivity for Progress: An Imperative for States," in *Prioritizing Productivity: The SEA of the Future*, Vol. 2, ed. Betheny Gross and Ashley Jochim (San Antonio: Building State Capacity & Productivity Center at Edvance Research, Inc., 2013).
4. The terms *student-based allocations* (SBA) and *weighted-student funding* (WSF) are sometimes used interchangeably. SBA is used in this paper to emphasize funding of students as compared to funding of objects or programs and services.

they can be held to the same accountability standards as better-funded places. For accountability systems to work, district and school leaders need to believe they operate on a level playing field.

Flexibility for New Delivery Models

Sometimes, state leaders want districts to use funds differently, but state formulas do not let them. In some states, allocations come in the form of schooling inputs, and the formula fixes how money is to be spent—how many teachers are funded for a certain number of students, how many computers or textbooks are purchased, how many periods are funded in a school day, and so on. This limits the flexibility of district leaders to decide how their funds are spent, and causes them to worry more about complying with rules than about leveraging their funds for greater productivity.[5]

When schools shift to digital content, it doesn't make sense to lock in spending on textbooks. Funding based on fixed class sizes or rigid compensation structures seems dated in a world where districts are rethinking these parameters.

Adaptability and Efficiency

When district enrollment drops due to shifting demographics or the growth of charter schools, districts are slow to rightsize their operations or shift to contractors in areas where that makes financial sense. Some of the sluggish response is likely the result of state allocation formulas that work precisely to keep districts from adapting. For example, "hold harmless" formulas (which provide extra funds to districts where declines in enrollment would otherwise create a dip in funds) and subsidies that allow small school systems to provide services in the same way that larger systems do both allow districts to maintain levels of service that may not be appropriate for their mix of students. Such allocations remove the incentive to innovate for greater productivity.

In states that are moving toward student-based allocations, part of the thinking is that as delivery models evolve, so should school financing. When schools shift to digital content, it doesn't make sense to lock in spending on textbooks. Funding based on fixed class sizes or rigid compensation structures seems dated in a world where districts are rethinking these parameters.

5. Hold harmless formulas also create funding inequities that threaten the perceived fairness of accountability systems.

Given how rarely state allocation formulas are changed, it's likely that any major formulas adopted in the near term will still be around into the 2030s. Consequently, tying funds to schooling inputs or certain delivery models, rather than to students, will hold districts back from making the changes they will need to in the coming years.

How Much Is *Really* Allocated Based on Students?

To meet these challenges, some states are adopting student-based allocations, where a fixed amount of funds is allocated per pupil or per pupil type, and follows the student to whatever school the student attends. The fixed amount includes adjustments for student needs—for instance, a student with limited English proficiency may be funded at a higher level than a native English speaker would be, and similarly, more funds are attached to students with disabilities or those living in poverty.

Tying funds to schooling inputs or certain delivery models, rather than to students, will hold districts back from making the changes they will need to in the coming years.

A student-based allocation model addresses several of the concerns mentioned above. By delivering a fixed amount per student type, the allocations meet the test of equity. In a student-based allocation structure, funds remain flexible and can be redeployed in new ways as more promising delivery models emerge. A strict student-based allocation structure means funding is automatically adjusted when enrollment shifts, so districts learn to adapt regularly to changing conditions. As an added bonus, allowing districts to keep the savings associated with more efficient delivery models provides the incentive to innovate for greater productivity.

Some states do have student-based allocations as part of their allocation formulas—but then they are smothered by myriad other allocations and provisions. Some states are in fact considering implementing or expanding student-based allocations. Others don't use them at all.

The Edunomics Lab has been conducting an ongoing study in five states to determine the portion of state and local monies delivered via student-based allocation.[6] Measuring progress toward full student-based allocation can inform state policymakers as they take stock of the current finance policies and set goals for future policies.

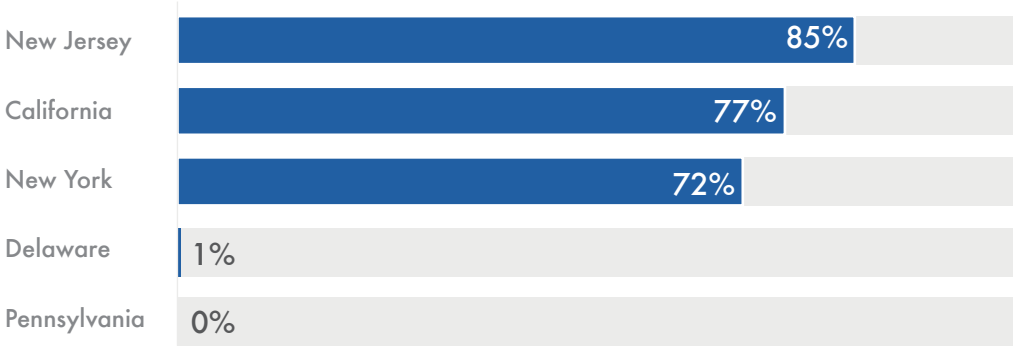
6. Marguerite Roza, Larry Miller, and Suzanne Simburg, "To What Extent Are School Districts Funded by Student-Based Allocations? An Analysis of State Aid and Local Revenue Funding Mechanisms Across Five States" (Washington, DC: Edunomics Lab at Georgetown University). See the study for the list of the five states, plus additional states included in the analysis.

The study analyzed all state and local funds in each state—California, Delaware, New Jersey, New York, and Pennsylvania—and determined the dollar amount of any funds deployed with a student-based formula. To be considered student-based, the allocation had to deploy a fixed amount of money on the basis of students or student types. The study considered all state and local public funds for K-12 education, excluding any long-term obligations like debt for facilities.[7] Figure 1 captures the findings for each of the five states for the 2013–14 fiscal year.

In California, New Jersey, and New York, nearly three-quarters or more of state and local funds follow a student-based formula. In contrast, almost none of Delaware's and Pennsylvania's funds are deployed on a student basis.

In California, which used to employ a variety of types of allocations, a recent state education finance overhaul, called the Local Control Funding Formula (LCFF), implemented a student-based formula.[8] For each district, the state determines the target spending, based on the mix of students, and then applies some or all of the local revenues toward that target. State funds then make up the difference. (Figure 2 shows how much is allocated for each student by grade level and need.) A similar model was proposed in Colorado, but the Colorado formula was tied to a measure asking voters for additional funding and that measure was defeated at the ballot box in November 2013. Also in 2013, governors in Ohio and Pennsylvania made proposals to advance student-based

Figure 1. States Vary in the Portion of Their Monies Deployed via Student-Based Allocations



Percent of state and local monies allocated on the basis of students.

7. Federal funds, which represent some 9–12% of total K-12 revenues, were excluded from this analysis, as were funds for long-term debt and capital costs.

8. While California's LCFF dictates the allocation of funds, it does not mean that the state has removed all process constraints that can inhibit flexibility. In fact, California retained its class size limits, but does allow a district to exceed the state's 24-student class size maximum if such a provision is included in a local bargaining provision.

allocation; both proposals are currently pending.

New Jersey passed finance legislation in 2008 that uses a student-based allocation formula as the target for the sum of state and local funding. While New Jersey still maintains several separate allocations, such as one for transportation, some of those are also allocated in fixed per-student increments and thus also qualify as student-based allocations, even if not flexible. In New York, a long-running complex finance formula has undergone changes over the years, but many portions are still based on students. New York's state funds are determined in part by local revenue capacity, but with many formula details and exceptions. In each of these three states, while a substantial portion of the funds follow students, between 15 percent and 28 percent of the funds do not—because of hold harmless provisions, separate allocations that fund programs or services, allocations that take the form of reimbursements, and other factors.

Figure 2. Per Student Allocations in California

Student types	Allocation
Grades K-3	$7,557
Grades 4-6	$6,947
Grades 7-8	$7,154
Grades 9-12	$8,505
Limited English	+20%
Poverty*	+20%
Foster youth	+20%

Source: Data from California Department of Education, "Local Control Funding Formula Overview," last reviewed January 15, 2014, accessed February 11, 2014.

*High-poverty districts receive an additional 50% weight for each disadvantaged student above the 55% threshold.

In contrast, Delaware and Pennsylvania each allocate funds in a way that is not based on students at all. Delaware's formula awards "units" instead of dollars, where each unit is the equivalent of a full-time staff position. Some of the units are assigned on the basis of student counts, while others are assigned on a per-school or other basis. This locks in staff positions in ways that can feel inequitable and limit flexibility—one middle school might have just one more student than another middle school, which, under the formula, may net the school the funding for one more administrator. Since what gets delivered are units, not funds, the increments are larger and less flexible. Under this system, it is not the case that the state spends the same dollar amount on each student regardless of which school the student attends. Pennsylvania does have a student-based formula on the books, but it hasn't been used in years. Instead, funding is allocated by just adding a percentage each year to whatever districts received the year before.

REMOVING BARRIERS TO STUDENT-BASED ALLOCATIONS

Even in states where the basic allocation formula is student-based, a substantial portion of the monies may be allocated via mechanisms other than student-based funding. These extra allocations make the state and local revenue structure less transparent, less equitable, and less flexible. Ending or shrinking the following types of allocations can free funds to expand allocations via a student-based formula, and thus make it easier for district and school leaders to apply funds in ways that are efficient and best meet the needs of their students and communities:

> Legislatures are often tempted to put limits on how districts can use state monies, but succumbing to this temptation means that districts cannot make smart trade-offs about how to apply their funds.

Categorical Funding for Programs or Delivery Models

State legislatures sometimes earmark funds to be used only for a specific program, school type, or delivery model. The initiatives—Advanced Placement classes, computer science classes, charter schools, or online learning programs—may have been justifiable when they were conceived. But by earmarking funds for only certain programs, states tie the hands of district and school leaders. Some states dedicate money specifically for charter schools, some states earmark vocational schools, and some target digital learning. By funding each model separately, the funds tip the scales in favor of some schools or delivery models over others, and prohibit a fair comparison on the merits of one program to another since some delivery models receive more resources than others. For instance, when digital learning is funded by a separate line item, those offerings are not managed under the same performance and cost expectations as other delivery models. A school that might benefit from more digital learning may refrain from adopting it, because leaders have been conditioned to develop these programs only when funds are dedicated to do so.

Dedicated Funds for Schooling Inputs

Funding for specific schooling inputs can also constrain district spending choices and perpetuate inefficiencies. In Delaware, the decades-old finance system funds salaries for employees instead of delivering funds that are made fully flexible to districts. According to the Education Commission of the States, six other states—Alabama, Idaho, Washington, North Carolina, Tennessee, and West Virginia—use as their primary formula one that allocates resources in the form of teachers, like Delaware.[9] In many states, smaller amounts of monies are allocated for specific schooling inputs like reading coaches or bonuses for teachers with National Board Certification. Legislatures are often tempted to put limits on how districts can use state monies, but succumbing to this temptation means that districts cannot make smart trade-offs about how to apply their funds. And, it provides perverse incentives. If funds are earmarked for reading coaches, and a school finds that it does better using an approach that does not require reading coaches, it loses those funds—so the principal might be inclined to revert to the (less effective) coaches.

Reimbursements

Some states allocate a portion of their funds on a cost reimbursement basis, where districts can submit expenditures for reimbursement for services such as transportation and food services, often up to a certain funding limit. This encourages districts to spend more on reimbursable activities, and discourages them from seeking efficiency improvements from reimbursed activities. Some districts with high transportation bills have been able to rethink the number of school days, increase public or family transportation, and take other measures to reduce their busing bill. In a strict reimbursement model, districts do not save money by making such changes, so they don't bother to try. For example, years ago in Seattle, a new, lower-cost transportation plan was proposed, but after finding that the savings would just result in fewer dollars from the state and no extra monies for the district, the school board determined that the effort involved was not worth it and scrapped the plan.

Hold Harmless Provisions

Hold harmless provisions, also known as phantom student funds, are funds delivered to districts specifically to hold them financially harmless from any changes created by enrollment shifts or other formula modifications. The effect is that districts receive monies for students

9. Michael Griffith and Daniel Thatcher, "School Funding Overview" (presented at Texas State Senate, Austin, TX, July 30, 2012), accessed May 12, 2014.

not enrolled (sometimes called phantom students). This policy ensures that districts do not have to adapt to changing conditions, and dedicates funds to them that could otherwise be made available to all districts to raise the base student allocation. Four of the five states studied here had some funds being deployed on a hold harmless basis (Delaware being the exception).

Small-Scale Subsidies

Some states assume that districts or schools with fewer students have some minimum level of fixed costs that are unavoidable, and thus provide a dedicated allocation to smaller districts or smaller schools, which then receive more per-pupil funds than their larger counterparts do. But new research on small districts and schools suggests that the higher costs in fact aren't fixed and that some smaller schools and districts do not cost more than larger ones.[10] For example, Georgia gives smaller districts 15 percent more than the average per-pupil spending levels, while in Minnesota and Wisconsin, small districts operate at funding levels on par with their larger peers. According to a 2010 *Education Week* report, 29 states have dedicated funds in their state allocation formula to account for district scale. Others fund some personnel or programs in "one per district" amounts, such that when the costs of those items are divided by the lower enrollment of smaller districts, per-pupil price tags are quite high. Even if large districts do enjoy important economies of scale, small-district subsidies discourage merging or sharing services across districts—both potential means of improving productivity. Charter schools (essentially single-school districts) have learned this lesson and often share purchasing, specialized services, or back-office functions.

Untamed Local Funds

Local funds have long been identified as a source of significant inequity between districts in many states. Where states permit locales to determine the extent to which they levy funds, those funds may reflect local property wealth, population demographics, or other nonstudent factors.

Many states' formulas now take into account local revenue in their state formulas in some manner. Some deliberately build state monies on top of all or some of the local revenue, such that the local revenue counts toward the student-based allocation. Another strategy is to use

10. Marguerite Roza and Jon Fullerton, "Funding Phantom Students," *Education Next* 13, no. 3 (Summer 2013), accessed February 13, 2014.

equalization funds to ensure that all districts can raise the same level of per-pupil funding at a particular levy rate.

Where local monies are not factored into state per-pupil allocations, or are permitted to rise above student-based equalization efforts, these funds contribute to uneven funding across districts. Because local funding is such a large portion of the revenue picture (sometimes more than half the pie), these funds must be factored into the state allocation structure to create a true student-based financing system.

Direct State Payments for Benefits and Pensions

Some states disburse education monies that never actually pass through the districts or schools—by paying directly into a pension fund or benefits provider. Where allocations like these are paid out separately, they distort for districts the true cost of labor and inhibit thoughtful trade-offs at the district level on the costs of services. Say, for instance, that a district is comparing the costs of a nursing service to the costs of hiring nurses for some special education care. If the state is directly paying the benefits tab for the nurse, then the district doesn't factor in total public costs for the hired nursing staff option. Where these separate allocations distort spending decisions, they can create inefficient choices with public funds.

Performance Funding

Performance funding[11] would award more dollars to districts or providers (sometimes digital providers) if student outcomes meet a specified performance level. These proposals are gaining some popularity in legislative dialogue, and sound like they might enhance productivity, but they do create problems for a system aiming to create equity, flexibility, and accountability.

First, where districts or providers do receive performance funds, those funds create uneven spending on a per-student basis, and thereby confound attempts to create a level playing field for accountability in subsequent years. Second, given the retroactive nature of the allocations, most districts would not be able to apply the funds in ways that benefit the students who generated those funds. Performance funds are not common practice yet, but insofar as they are being considered, it is worth understanding how they pose a threat to student-based allocations.

11. The comments here address state allocations to districts based on student performance, and should not be confused with district efforts to compensate teachers based on teacher performance or productivity.

Figure 3 shows which of the financing models discussed above exist in the five states profiled here. As is clear, even in states that use a student-based allocation as the primary vehicle for allocating state and local monies, these other allocations layer on and divert funds in ways that confound the equity and incentives created by student based allocation.

As states begin to prioritize productivity, the window may be opening for making changes to the resource allocation formulas. For some legislators, the temptation will be to flex their muscles and modify their finance formulas in ways that impose restrictions on districts for how to apply new funds. But where states want improved student outcomes from districts and schools in return for new monies, they'll need to remember that district and school leaders can accept that responsibility only if given some flexibility with the resources they are allocated. Moving more funds to a student-based allocation model would set states, and educators, on a path toward greater equity, flexibility, and productivity.

Where states want improved student outcomes in return for new monies, they'll need to remember that district and school leaders need some flexibility with the resources they are allocated.

For states wanting to expand the portion of the funds delivered via a student-based model, one option is to consolidate some of the funding

Figure 3. States Apply Funds in Ways That Defy Student-Based Allocation

Source of funding	CA	DE	NJ	NY	PA
1. Funds for programs or delivery models	X	X		X	X
2. Dedicated funds for schooling inputs		X			
3. Reimbursements	X	X		X	X
4. Hold harmless (phantom student funds)	X		X	X	X
5. Small district subsidies	X				X
6. Untamed local funding		X		X	X
7. Direct state payments for pensions, benefits	X	X	X		X
8. Performance funding				X	

mechanisms discussed here and redirect those funds into their student-based formula. To gauge progress, these states can measure the percentage of state and local monies that is allocated on the basis of students.

No one can know for certain all the different kinds of schooling models that will emerge in the next two decades, let alone which will yield the greatest return for students. For state leaders, designing an allocation system amid such uncertainty is tricky, particularly when modifying such allocation systems can take years. But the one thing we know will still be here in twenty years are the students. Aligning money with the students offers some promise that a finance formula will be able to stand the test of time.

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Building State Capacity and Productivity Center
at Edvance Research, Inc.®

Accelerating Productivity Through Autonomy

Kelly Hupfeld
University of Colorado Denver
School of Public Affairs

May 2014

Education is a complex undertaking—there is no single policy reform that will guarantee the academic performance of every student, at every school, every day. Improvement requires experimentation. At the same time, we want every dollar leveraged toward maximal effect.

To meaningfully improve educational outcomes and accelerate productivity, we must enable those responsible for public education to adapt their approaches and learn as they go. The high-performing school system of the future will be driven by continuous improvement. And it most likely will be successful because of, not in spite of, the role its state education agency plays.

To support districts and schools in their work to improve outcomes for students, states cannot stand in the way with a set of mandates and prescriptions. Rather, they need to carefully reassess and revise state laws and regulations to encourage high-quality local decisions and unleash the creativity and skill of teachers, principals, and school system leaders. Balanced with the right incentives and support for the talent in our schools, these efforts offer tremendous potential to get the most out of the resources and energy we put into public education.

To promote autonomy in a way that will advance productivity, states should be agnostic in terms of how schools are structured and instead focus on removing barriers and providing resources to benefit all types of schools.

To promote autonomy in a way that will advance productivity, states should be agnostic in terms of how schools are structured and instead focus on removing barriers and providing resources to benefit all types of schools.[1] Too often state policies, while well intentioned, constrain the authority of local education providers, as well as the ability of school and district personnel to make timely decisions about the learning needs of individual students and schools. Examples of these policies include:

- Laws that restrict how districts and schools use state funding—be they artifacts of past theories of action about improving education, efforts to protect against fiscal malfeasance, or conservative interpretations of federal funding requirements.
- Laws that bestow tenure on teachers regardless of effectiveness, make it prohibitively costly and burdensome to remove ineffective teachers, require

1. See Martin Orland, "The Supply's the Limit: Meeting the Challenge of Knowledge and Capacity Constraints to Significant Educational Improvement," *Education Finance and Policy* 6, no. 1 (2011): 1-17.

that educators hold certifications that are not shown to be related to effectiveness, and fix the distribution of personnel by placing limitations on class sizes.

- Laws that constrain the variety and design of permissible learning environments. These can include limits on the number of autonomous schools, like charter and innovation schools, or restrictions on the time and place of learning. While these policies were often initiated in an effort to develop minimum standards and equity in education, they can also hinder innovation and differentiation.

But states do have opportunities and policy mechanisms to promote autonomy. Whatever their starting point, states can develop a policy approach that offers flexibility to teachers, principals, and superintendents without undermining states' fundamental obligations for the health and safety of students, the responsible use of public funds, and the overall performance and equity of the education system.

CREATING A STATE POLICY FRAMEWORK THAT LEVERAGES SCHOOL AUTONOMY

States interested in fostering greater school and district autonomy can start assessing existing state statutes, regulations, and other policies. This audit should focus on the extent to which state policy permits and encourages local decisionmaking about the deployment of financial and other resources; personnel; and the design, implementation, and oversight of a variety of optimal learning environments for students.

The results of the audit should provide a solid foundation for identifying missing or contrary policies.

Resource Autonomy

Improving school quality means that teachers and leaders must be able to deploy resources to meet individualized needs in a flexible and timely way. School funding policies in many states are designed primarily to protect against local misuse—a laudable goal, but one that must be balanced with the need for local freedom to determine what resources are needed for what purpose.

States promote productivity by:

- Permitting flexibility in the use of state and local education funds so that local decisionmakers can drive the money where it is most needed.
- Providing additional resources based on individual student characteristics (e.g., special education status) so that schools can address the special needs of individual learners.

- Designating charter schools as local education agencies rather than treating them as part of an existing district, making them eligible to receive certain federal funds and grants.

By contrast, states hinder autonomy, and thus productivity, when they set up school finance formulas that tightly restrict the ways in which funds can be distributed and used, or impose such demanding reporting requirements that districts limit their use of funds just to ease the reporting burden. As Miller, Roza, and Simburg report in their essay, "Funding for the Students' Sake," when funds are deployed on the basis of inputs—such as staff positions—district and school leaders cannot repurpose funds to support tailored instructional programs. Of course, some of these constraints are federally imposed and states cannot change them on their own. But others are not: California recently devolved a substantial amount of resource decisionmaking to districts with its Local Control Funding Formula, eliminating many state-imposed revenue constraints and categorical programs.

School and district leaders must be free to find the best ways to hire, train, evaluate, and reward their staff, and to dismiss staff members who are unable or unwilling to fit into a school's vision.

Personnel Autonomy

Measurably improving student outcomes requires highly capable professionals able and willing to adjust the learning environment to meet the needs of individual students. School and district leaders must be free to find the best ways to hire, train, evaluate, and reward their staff, and to dismiss staff members who are unable or unwilling to fit into a school's vision. States can promote this autonomy through policies that permit staffing decisions such as hiring, layoffs, and termination to be made at the school level, based on student and school needs, and through policies that permit or encourage differentiated recognition and rewards for educators.

In Indiana, for example, the legislature passed a law authorizing principals statewide to dismiss teachers who have received two consecutive "ineffective" ratings or three "needs improvement" ratings in five years. The Louisiana legislature passed an initiative that requires teacher salary schedules to be based on effectiveness, demand, and experience; none of those elements can exceed half the formula.

On the other hand, states can stand in the way of autonomy with policies that:

- Restrict the ability of a school's leadership team to make timely decisions about which staff members are the best fit for the school's mission.
- Require the application of districtwide collective bargaining agreements without regard for differences in school settings.
- Mandate the assignment of personnel based solely on student counts.
- Mandate particular forms of teacher evaluation.

Autonomy on Learning Environments

An optimal state policy framework defines the expected educational outcomes (the "what") while permitting local discretion in setting up and overseeing learning environments that best fit the needs and resources of students and the community (the "how"). States promote local control over the "how" by permitting qualified entities other than traditional districts, such as nonprofit organizations, to operate schools, and by allowing for a variety of types of school structures ranging from traditional to online to autonomous, including charter, innovation, and pilot schools. States can also anticipate a variety of fluid learning environments within schools—such as those incorporating blended learning—and accommodate a range of local decisions about the school calendar and length of the school day.

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

Colorado does this through its Innovation Schools Act, which authorizes waivers of state and district policies for schools seeking to operate in innovative ways. In Tennessee, any local board of education may initiate a program of school-based decisionmaking and designate areas that can be decided by school personnel, including classroom teachers. These areas include (but are not limited to) management, curriculum, classroom management, professional development, and budget.

States can also enable diverse learning environments to flourish by allowing families to find the school that best meets their child's needs through school choice, access to useful information about school options, and resources such as transportation options that make choice meaningful.

Conversely, most states set up obstacles by requiring districts and schools to follow a prescribed curriculum and use preselected texts, setting arbitrary caps on certain types of schools such as charter schools, and basing policies

on assumptions that there is one right way—and thus certain specified structures—to educate students.

POLICY IS ONLY HALF THE BATTLE

The value of local autonomy is not a new notion in public education. Site-based school management, in which decisions about resources are devolved to the school level, has been around since the 1970s. Charter school laws and other laws creating different types of autonomous schools represent more recent variations on this theme.

Research on the effectiveness of autonomous schools is mixed. Studies of autonomous schools reveal principals embracing autonomy to build a coherent faculty and rapidly adapting teaching and learning to meet students' needs and even outperforming their peer schools.[2] Still other research shows principals of autonomous schools struggling to get a foothold. As CRPE's Betheny Gross wrote in 2011 about autonomous charter school leaders, "powerful forces constrain the creativity of...school leaders, lessen their resolve to make big changes, or overwhelm their efforts to do so."[3]

Autonomy is merely a mechanism through which professional judgment and leadership may be exercised. Leveraging autonomy to promote productivity will require investments in school capacity and incentives for doing better.

We know that removing barriers alone will not bring improvement. Autonomy is merely a mechanism through which professional judgment and leadership may be exercised. Leveraging autonomy to promote productivity will require investments in school capacity and incentives for doing better. Areas where states can help districts and schools build and maintain the skills and capacity to act effectively on their autonomy include:

- Building a talent pipeline. States can set standards for teacher and school leader preparation programs that focus on training graduates to develop and operate effectively in learning environments that are individualized for the needs of each student, set rigorous entrance requirements for those programs, and allow flexibility in the design of preparation programs so that districts and schools can best meet their staffing needs.

2. Matthew P. Steinberg, "Does Greater Autonomy Improve School Performance: Evidence from a Regression Discontinuity Analysis in Chicago," *Journal of Education Policy and Finance* 9, no. 1 (2014): 1-35.
3. Betheny Gross, *Inside Charter Schools: Unlocking Doors to Student Success* (Seattle: Center on Reinventing Public Education, 2011).

- Funding comprehensive assessment and data systems. Strong systems allow teachers and school leaders to have valuable real-time information about student learning, the effectiveness of instructional techniques and interventions, and even their own professional development needs.
- Replicating best practices. States can provide funding to encourage experimentation and to help districts and school leaders identify and replicate effective school designs and approaches.

Boundaries and Direction on Autonomy

State policy frameworks that support the use of autonomy will provide clarity about the expectations of student learning outcomes and the consequences for districts and schools that fail to achieve these outcomes. Without clear direction and meaningful consequences for failure, schools and districts are not likely to put in motion the courageous but painful decisions that must be made for all students to succeed. The incentives for improving educational outcomes for all students must be stronger than the incentives to conduct business as usual.

The incentives for improving educational outcomes for all students must be stronger than the incentives to conduct business as usual.

States can make this happen by setting clear standards about what students should know and be able to do in essential learning areas. They also need to set robust performance standards for schools and districts that are focused on rates of student growth, equity in outcomes across student groups, and other outcome measures deemed essential by the state, such as graduation rates. The state accountability system should require persistently failing districts to dramatically change what they are doing or be placed under a recovery authority that is structured to operate with high levels of autonomy and capacity. In Louisiana, the lowest-performing schools will, if they don't improve, move under the authority of the state-run Recovery School District. In Indiana, schools designated as Turnaround Academies because of low performance are not covered by collective bargaining agreements and thus can make changes to staffing that leaders think will improve results.

DIFFERENTIATING AUTONOMY: EARLY ADOPTERS AND CAUTIOUS CONSUMERS

In considering how best to promote autonomy, state policymakers should also consider the culture of the state and the readiness of districts and schools for change. Districts vary tremendously in terms of their capacity, resources, and motivation for change. It is useful here to borrow terms from the business sector to think about encouraging and supporting innovation.[4]

4. With appreciation to the concepts expressed in Kim Smith and Julie Petersen, *Pull and Push: Strengthening Demand for Innovation in Education* (Boston: Bellwether Education Partners, 2011).

Some districts will be early adopters, eager to experiment and capable of marshaling national resources to do so. Many early adopters are proactive urban districts looking to launch schools out of decades of failure. Some early adopters are forced into innovation through state takeover or some other aspect of accountability systems.

The state's goal should be to ensure that the early adopters, who are acting as laboratories for innovation, have the policy environment they need to develop and maintain autonomous schools. In some cases, states may act to ensure the early adopters have sufficient capacity to make the experiments worthwhile. Some early adopters will attract national funders; the main help the state can provide them is to remove unnecessary barriers and otherwise get out of the way. Another way to accelerate this autonomy is to focus initial policies granting autonomy on the state's high-profile urban districts.

In contrast, other districts will fall into the role of cautious consumers in a culture that has long been risk-averse. In the longer-term view, the state's role is to spread and sustain what works and to support educators in their learning while differentiating among the needs of different districts. Above all, the state should seek to reliably recruit and train educators who possess the professional judgment that will be needed in the schools of the future, and to generate the resources and supports needed for those schools to operate effectively. As David Plank and BetsAnn Smith point out, "the demands of advancing a coherent system of supports for effective teaching and learning almost always outstrips the professional, technical, and fiscal resources of individual schools."[5]

A long-term view of state policy will ensure that the coherent system of supports exists when schools and districts are ready to transform. The state should become a marketplace for the exchange of information about educational performance and improving educational practices so that local decisions are well-informed. This marketplace can and should exist in multiple formats such as webinars, online discussions, structured leadership programs that combine key problem-solving skills with the application of those skills to local problems, online wikis and databases of instructional and operational tools, conferences, peer mentoring programs, and so on. The state should pay careful attention to the needs of more isolated schools and districts, and other communities with less capacity.

Finally, state education leaders should become the top advocates for the new approach to schooling and refuse to engage in sound bite policymaking that implies that any one approach, including autonomy, is the silver bullet we have all waited for. The deep and complex change necessary to arrive at the levels of education productivity we now expect requires courage from our politicians and policymakers, as well as from our educators.

5. David N. Plank and BetsAnn Smith, "Autonomous Schools: Theory, Evidence and Policy" in *Handbook of Research in Education Finance and Policy*, ed. Helen F. Ladd and Edward B. Fiske (New York: Routledge, 2008), 402-425.

Building State Capacity and Productivity Center
at Edvance Research, Inc.

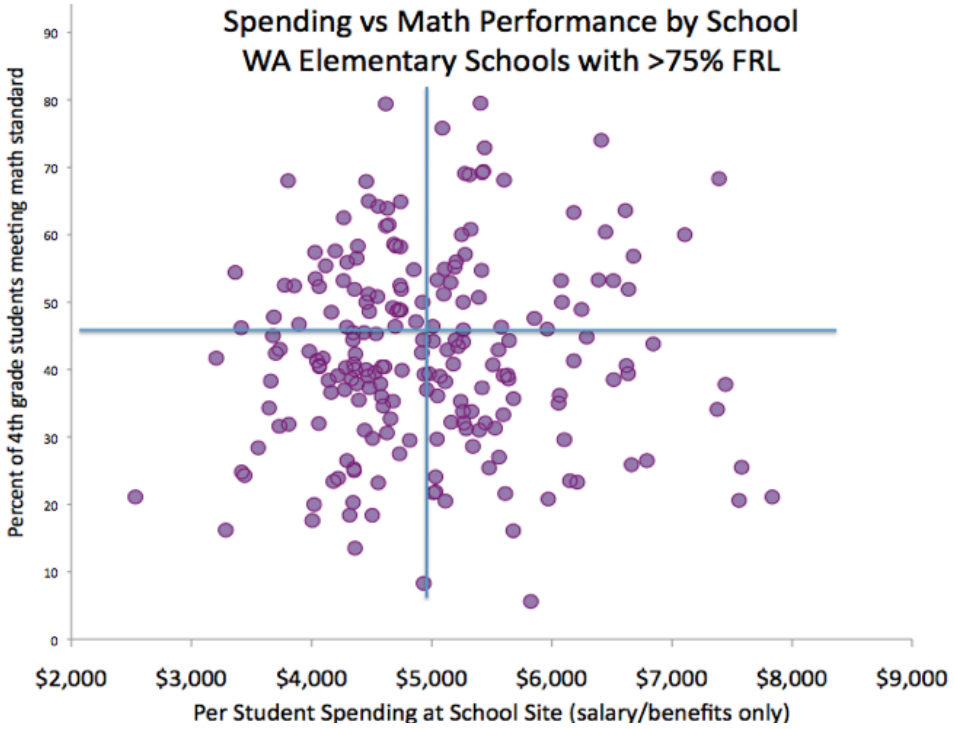
A State Information System to Support Improvements in Productivity

Marguerite Roza
Edunomics Lab

May 2014

Array school-level spending for Washington State's high-poverty elementary schools against each school's math performance, and the fact becomes very clear: there is almost no relationship between how much money a school spends per student on personnel and whether its fourth graders are proficient in math. Chart other subjects, other schools, other districts, other states, and the evidence there too would likely show a weak relationship between spending and outcomes, even when controlling for differing characteristics of students.

Figure 1.



Source: Based on the author's calculations from the Washington State Office of Superintendent of Public Instruction, 2011–2012.

But nobody is taking this kind of look at the data. Our chart, shown in Figure 1, was created by aligning data from several sources; most states do not have the kinds of data systems that already merge data for these types of reports. Some schools are far more productive than others—they get better results for students for less money—yet states and school systems are not doing the work to figure out which ones, and why.

Instead, states and school systems focus exclusively on performance outcomes. On school report cards and in accountability systems, two schools with similar demographics that both achieve 75 percent proficiency appear equally successful. But if one school spends half what the other does, it is much better at leveraging its funds to maximize outcomes, and if its model is sustainable or scalable, its approach is more viable for the future.

Districts have proven reluctant to rethink how they apply resources among and within schools. Even when new, financially sustainable models of educational delivery arise, they do not spread—in large part because leaders are not in the habit of prioritizing productivity, and would not have the data to do so even if they tried. Districts and schools adopt innovations that add incremental expenses instead of thinking of ways to reallocate resources more sustainably, which leaves the new initiatives vulnerable to budget cuts.

In this era of constrained resources and growing demand for improved outcomes, it makes no sense to keep ignoring productivity. Everyone from state education agencies (SEAs) to school leaders needs to take seriously the productivity challenge—learning to use funds differently to maximize the benefit for students. This starts with SEAs assuming a proactive role, guiding systems toward retooling delivery models to achieve better outcomes at a more sustainable cost structure. SEAs hold the power to develop information infrastructures that enable administrators and systems to unlock the powerful clues they need to maximize outcomes per education dollar, and to make discussions about productivity a matter of course.

Most principals cannot even estimate their school's total or per-pupil spending, or guess whether it is greater or less than other schools.

DEVELOPING A CULTURE OF INQUIRY

Schools in the lower-right quadrant of Figure 1—those with high spending but low student outcomes—ought to be studying how those in the upper-left quadrant have been able to achieve greater proficiency with less money. They need to examine how their spending choices compare. But they cannot do so as long as they have no idea which quadrant the schools sit in.

Most districts keep their principals so insulated from financial data that many of them are not even aware of how much money is spent at their school, much less able to see how it relates to their outcomes, or how it compares to other schools. I have often asked sitting principals about their schools' expenditures, and most cannot even estimate their school's total or per-pupil spending, or guess whether it is greater or less than other schools. In a recent training session for school leaders, a principal was bemoaning the high cost of paying a contractor an hourly rate for nursing services while the school's nursing position went unfilled for a year. While the principal said the contracted service was great, she felt that the cost was much too high. After calling the school

system's payroll office and obtaining the average salary and benefits for nurses in the district, the Edunomics Lab calculated that even with the high hourly rates, the contractor cost much less than an employee would. The finding surprised the principal, who immediately requested that the district not fill the nursing vacancy and instead continue the contract arrangement.

Getting administrators to consider productivity like this, and act on it, requires a shift in systems and culture. School leaders are held accountable only for whether their initiatives improve student outcomes, not that they do so at a reasonable cost. They are allowed to add new programs and staff without explicit consideration of trade-offs. And in many districts they do not have the authority even to make those kinds of decisions—or they do but do not realize it.

Districts and schools cannot attack the productivity challenge on their own; SEAs need to drive the agenda and provide the tools that leaders need.

A principal who has the incentive to seek out more efficient practices amid cost constraints may find that the highly productive school across town has hired all bilingual teachers instead of providing separate services for English language learners. Or it has adopted technology-based literacy instruction and diagnostics that reduce the need for reading interventions. Or it increased class sizes to free up funds for a longer school year.

The principal seeking greater productivity may decide to adopt some of those promising approaches, especially if he or she is allowed to apply the money that frees up toward other priorities. Even school leaders who do not make significant changes in delivery approaches may leverage productivity data to refocus staff time and priorities. For instance, at schools that are high-spending because they have very experienced teachers on staff, principals would have the spending data needed to call attention to this higher spending and leverage it in a way that sets high expectations for the staff. Or, by recognizing the high costs of a longtime librarian, the principal might consider using this position to more directly drive the school's reading agenda rather than, say, monitoring hallways or covering students during release time for homeroom teachers.[1]

1. There may be schools with more senior staff where longevity pay results in higher spending but not proportionately higher outcomes. Even then, transparency around that issue may not be a bad thing. In fact, some locales might respond to the data with increased interest in changing the current compensation structure to one that does not create those patterns.

Superintendents can use this data as a motivator as well. They can point out to principals where they stand when it comes to productivity. They can celebrate the leaders of highly productive schools and pair them with peers who need help learning ways to better leverage their funds. Productivity needs to be part of the conversation for central office staff, too. Leaders in the human resources departments or the curriculum and professional development offices often are not aware of the cost of adding professional development days, paying substitutes while staff are in training, adding reading coaches, and the like. No less than principals, they should be able—and required—to weigh the productivity of their initiatives.

THE ROLE OF THE SEA

As SEAs shift from a focus on defining uniform delivery models and monitoring compliance with federal rules to managing performance, productivity should be a linchpin of their efforts. Districts and schools cannot attack the productivity challenge on their own; SEAs need to drive the agenda and provide the tools that leaders need.[2]

Imagine a state system that incorporated student performance and school-level financial information from many schools and districts, with an analytics platform that could enable clear interpretations of the relationship between spending and performance.

In recent years, most SEAs have expanded their data systems, largely in compliance with federal pressure from No Child Left Behind and Race to the Top. The newer data systems include more detailed information on student outcomes by school and student group and, in some cases, on teachers.[3] Some also incorporate characteristics of school inputs like staff counts, the percentage of staff with master's degrees, or number of computers. But even the best of these expanded data systems do not provide sufficient financial information and pair it with outcome data in ways that push district and school efforts to seek productivity gains.

Imagine a state system that incorporated student performance and school-level financial information into a new return-on-investment measure. Drawing

2. A previous piece in this series called for states to promote productivity by building information systems for districts and schools, as well as three other ways: prioritizing flexibility so that districts and schools are free to try new delivery models, focusing attention throughout the system on productivity through training or awards, and using leverage to rethink long-term cost obligations. See Marguerite Roza. "Leveraging Productivity for Progress: An Imperative for States," in *Prioritizing Productivity: The SEA of the Future*, Vol. 2, ed. Betheny Gross and Ashley Jochim (San Antonio: Building State Capacity & Productivity Center at Edvance Research, Inc., 2013).
3. Many state data systems now include information on the percentage of teachers deemed "highly qualified," and some have added information that matches teachers with student outcomes data.

on data from many schools and districts, and incorporating powerful visual displays, the analytics platform could enable clear interpretations of the relationship between spending and performance, as our scatterplot does. Users could search and filter data to compare spending and outcomes among schools with similar characteristics (rural, high-poverty, east side of the city, and so on) and within a district, region, and state.

The information would list spending choices in detail, providing clues not only to which schools and districts are most productive, but why.[4] Users will want to know how the most productive schools balance spending between staff and technology, core academics and electives, salaries and benefits, and so on—and they will want to compute the potential impact of similar decisions at their schools. Typically, district budget and accounting documents summarize spending in large categories like "instruction" or "instructional support" or aggregate it into objects like "salaries." The spending data described here would instead list all expenditures for each school including all staff positions and their salaries and benefits, and charges for contracts, substitutes, stipends, and the like (see box at end of chapter). It would fold in demographic information to determine spending by student and student type, given that school spending differs depending on the mix of students, and data are only relevant if spending comparisons have properly accounted for student needs.

> SEAs should provide whatever resources are needed to make sure everyone understands the data and the context that surrounds them.

WHERE THE DATA LEAD

Even though it is crucial for leaders to learn from highly productive schools and programs, it would be a mistake to assume that there is one correct way to apply funds. Different schools may realize improvements in productivity through a range of approaches, including those that reflect the unique needs of their students, their communities, and the strengths and weaknesses of their staffs.

What is important is not the precise conclusions the information leads to, but rather that the information is made available and used thoughtfully and appropriately. This is where SEAs are especially important. Ideally, SEAs would use the data they make available to ensure that productivity becomes part of everyone's efforts to improve education. The information should be public and

4. Most systems will be unable to fully account for private or philanthropic funds. Fundraising accounts for less than 2% of total spending in most systems, and generally does not flow through the public accounting structures.

easily accessible by all stakeholders including community groups, parents, and the media. SEAs should provide whatever resources are needed to make sure everyone understands the data and the context that surrounds them, and should ensure that—unlike a lot of available state and federal spending data—it reflects the current year.

SEAs can use their communication platforms to draw attention to variations in productivity and to celebrate highly productive schools. When people in school communities request increased services, SEAs might challenge the schools to explore trade-offs to fund the new initiatives. When certain initiatives are shown to be exceedingly and unsustainably expensive for their outcomes, district leaders can use this information to help neutralize pressure from the groups that support the inefficient practices. When communities notice that, based on the data, underfunding may be contributing to their schools' poor performance, they might press to have funding formulas changed to be more equitable. Likewise, the evidence might counteract pressures for successful but high-spending schools to draw down a disproportionate share of a district's resources.

The first step is the most simple: states can act right away to augment their information systems to incorporate school-level spending.

SEAs should expect that leaders need training to first understand what the data tell them, then to translate that information into smart choices about service delivery. Toward that end, SEAs could use their authority to require that administrators are exposed to the productivity concepts in order to receive certification, as they do with academic topics. School boards too could be required to receive training on how their districts and schools stack up on productivity comparisons. Partnerships with school board associations or regional districts could support such trainings.

As soon as they are developed, productivity measures can be incorporated into school report cards for information purposes. In the long run, it may make sense to weave productivity measures into accountability systems for schools and administrators, but it is too early to do that now in most states. Thus far, most districts and schools have never been asked to measure or optimize their productivity. Imposing consequences based on productivity outcomes too early could discourage people in the system from seeing the information as helpful.

The potential for smart use of these data stretches beyond traditional district spending. Mayors, charter authorizers, and portfolio district leaders could factor productivity into their consideration of which schools to replicate and

which to restructure or close. States would be wise to consider the productivity and thus the financial viability of the school turnaround models they promote. Innovators would have an easier way to analyze how the new delivery models they are creating could enhance a school's productivity.

Getting people to think about productivity is imperative, but it will not be easy. The first step is actually the most simple: states can act right away to augment their information systems to incorporate school-level spending. SEAs may worry that this imposes a new cost for them—but the cost of missing this opportunity to leverage spending for students is far greater.

Building Spending Data by School

Just because many district financial documents do not report spending by school does not mean the information does not exist. It is possible to create a school spending measure from existing data sources without redesigning accounting systems or building new account codes.

The first step is to add up salary and benefits by school. For any personnel funds not assigned by school or student type, and the approximately 10 percent of district funds that are not personnel-related and other district costs that cannot easily be attributed school by school, the total costs can be divided by all students in the district to get a per-student amount. These amounts are then assigned to each school according to its enrollment. Where central expenditures are focused on a student type (say, high school students, bilingual education students, etc.), then those funds should be allocated across that student type throughout the district. Preferably, pension payments would also be included, although ensuring these funds make it into the mix can be tricky depending on the state.[5]

To make comparisons across schools in different districts, spending by school should reflect the district's full operational costs, including those for centrally managed expenses such as legal and transportation costs.[6] The sum of all schools' expenses should total the district's entire budget, including all federal and local revenue streams (perhaps excluding costs associated with long-term debt).

Undoubtedly, leaders will worry that the data will not perfectly account for everything. Some schools might have an unusual set of students who are not properly recognized in the demographics (such as youth enrolled in correctional systems). Others might have one-time expenses in a given year due to an unforeseen event, and so on. These concerns are legitimate, and imply that caution should be used in interpreting all the data, but should not keep the system from getting started down this path.

5. In some states, pension payments are made directly from state coffers, and might not be apparent in district financial documents.
6. Adjustment for any unusual expenditures is something each district can do to understand its own information. For a remote rural district with high transportation costs, district leaders can see the effects of those costs, and perhaps compare themselves with other remote rural districts where use of technology or other innovations might preclude such a high investment in busing.

Building State Capacity and Productivity Center
at Edvance Research, Inc.

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 increased demands for greater productivity. As state departments of education are facing the daunting challenge of improving student performance, the BSCP Center provides technical assistance to SEAs that builds their capacity to support local education 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.

Center on Reinventing Public Education (CRPE) www.crpe.org | Through research and policy analysis, CRPE seeks ways to make public education more effective, especially for America's disadvantaged students. CRPE's work emphasizes evidence over posture and confronts hard truths, searching outside the traditional boundaries of education to find pragmatic, equitable, and promising approaches to address the complex challenges facing public education. CRPE's goal is to create new possibilities for the parents, educators, and public officials who strive to improve America's schools. Founded at the University of Washington in 1993, CRPE is a self-sustaining organization funded entirely through private philanthropic dollars, federal grants, and contracts.

Edunomics Lab at Georgetown University www.edunomicslab.org | Edunomics Lab is a university-based research center focused on exploring and modeling complex education finance decisions. The newly formed center is in the McCourt School of Public Policy at Georgetown University and focuses on public spending for K-12 and higher education. The center tracks public funds through the system to the point of service to examine the different policy decisions and their effects on the allocation of resources across students and services.

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