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PUBLIC EDUCATION

Policy Barriers to School Improvement:

What's Real and What's Imagined?

Lawrence J. Miller
Senior Research Fellow
Center on Reinventing Public Education

Jane S. Lee
Doctoral Student
University of Washington

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About the Center on Reinventing Public Education

Through research and policy analysis, CRPE seeks ways to make public education more effective, especially for America's disadvantaged students. We help redesign governance, oversight, and dynamic education delivery systems to make it possible for great educators to do their best work with students and to create a wide range of high-quality public school options for families.

Our work emphasizes evidence over posture and confronts hard truths. We search outside the traditional boundaries of public education to find pragmatic, equitable, and promising approaches to address the complex challenges facing public education. Our goal is to create new possibilities for the parents, educators, and public officials who strive to improve America's schools.

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About the Authors

Larry Miller, PhD, is a Senior Research Fellow at the Center on Reinventing Public Education (CRPE) where he leads its school finance initiatives, including projects analyzing the cost of blended learning schools and an initiative to understand how we can finance schools in support of innovation. Dr. Miller has conducted research on weighted student funding in Houston, portfolio management in Newark, and early childhood accountability policies across the U.S., in addition to research on municipal budgeting systems. He has written widely on education finance issues including journal articles, research reports, and policy briefs. His research has appeared in Public Budgeting and Finance, Municipal Finance Journal, Educational Policy, and Developments in Education Finance.

Jane Lee, is a graduate research assistant at CRPE and an Economics PhD student at the University of Washington. Her current work focuses on school finance, particularly in innovative and blended learning schools. Prior to beginning her graduate program, Jane researched labor economics and development at the National Bureau of Economic Research and worked as a manager for Wonder-Space, a tech-oriented leading provider in supplemental education services for low-income children who struggle academically. Jane holds a BA in mathematics and economics from Rice University in Houston, TX.

Introduction

States and districts traditionally have controlled the resources that go into schools and standardized the practices that governed them. Today, though, promising reforms are happening where school leaders are freed from those strictures in order to think differently about how to get the strongest student outcomes from the limited resources available.[1] Systems that are reinventing public school governance in this fashion acknowledge that school leaders are the best people to understand the needs and interests of their students, and thus are the best people to remake their schools in order to serve them.

School leaders who are empowered to make the decisions they think will most benefit students are organizing schools in new ways and attempting to provide students with a more personalized learning experience. Whether in a large high school dividing into several small ones, a middle school embracing project-based learning, or an elementary school wanting to remake itself with a blend of technology and face-to-face instruction, school leaders often must deviate from traditional patterns of resource allocation.[2]

These leaders may cut administrators, support staff, and supplies so they can spend more on instruction. They may eliminate classroom teachers' non-instructional duties to increase instructional time, or add duties—having teachers serve as guidance counselors, for example. They may use money saved from administrative cuts for release time so that teachers can meet to plan new approaches to instruction. They may negotiate new teacher contracts to make these changes possible, and to extend the school day and year.

But even principals who use their newfound autonomy to aggressively reallocate resources say that persistent district, state, and federal barriers prohibit them from doing more. Principals may feel unable to extend the school day because of limited bus routes. They may wish to customize learning for each student by replacing some curricular materials with educational technology, but must work with instructional funds that are categorized only for traditional textbooks. Above all, myriad restrictions in personnel contracts and laws may prevent school leaders from assembling and organizing the right mix of teachers for their school's mission.

To more fully understand the extent to which resources are constrained, how they are constrained, and what can be done to free these resources for more effective use, we conducted a series of half-day interviews with eight principals from three states. These leaders came from a varied sample of schools in two large urban districts and two small districts, in states and districts that represent a range of policy environments—from those that are friendly to innovation to those that are more restrictive. (For details on how we selected schools and categorized state policy environments, see Appendix A.)

We asked the principals how they would use their resources to improve outcomes if nothing stood in their way, and what was preventing them from getting better performance from the dollars they receive. In all, the eight principals cited 128 barriers to change. Case by case, we investigated the barriers, sometimes with the assistance of district and state education agencies, to determine whether there were ways to work around the barriers that these principals had not realized. If a policy barrier did not exist in writing or if there was a work-around to it, such as a waiver, superintendent override, or permission through the consent of teachers, we classified the barrier as imagined. Real policy barriers were often written, presented no work-arounds, and carried the threat of real consequences if broken.

What we found is simultaneously troubling and encouraging: Principals have far more authority than they think. Only 31 percent of the barriers principals cited were what we call "real" barriers—immovable statutes, policies, or managerial directives that bring the threat of real consequences if broken. Real barriers include forced placement of teachers and staff in schools, bargaining agreements that prohibit job sharing, and grade-level holes in the online curriculum mandated by the state.

1. Paul Hill, Lawrence C. Pierce, and James W. Guthrie, Reinventing Public Education: How Contracting Can Transform America's Schools (University of Chicago Press, 2009); Paul Hill, *Defining and Organizing for School Autonomy* (Seattle: Center on Reinventing Public Education, 2013).
2. Lawrence J. Miller, Betheny Gross, and Monica Ouijdani, *Getting Down to Dollars and Cents: What Do School Districts Spend to Deliver Student-Centered Learning?* (Seattle: Center on Reinventing Public Education, 2012); Marguerite Roza, Claudine Swartz, and Lawrence J. Miller, *Lesson on Assessing the Cost of Small High Schools: Evidence from Seattle and Denver* (Seattle: Center on Reinventing Public Education, 2005); Lawrence J. Miller, Betheny Gross, and Robin Lake, *Is Personalized Learning Meeting Its Productivity Promise? Early Lessons From Pioneering Schools* (Seattle: Center on Reinventing Public Education, 2014).

The rest of the roadblocks, 69 percent, were "imagined" barriers—ones that appear rigid but in reality can be surmounted through waivers, creative work-arounds, and alternate interpretations, or can simply be ignored without consequence. Imagined barriers take root when norms and procedures gain the weight of statutes or managerial directives; when policies and contracts are misinterpreted or assumed to prohibit new approaches to instruction; and when policies or rules are accepted at face value despite references in the written policy to waivers and work-arounds. Labor agreements that do not allow teachers to work evenings and weekends, accounting policies that prevent principals from budgeting unrestricted funds for one activity but spending them on another, and labor agreements that impose strict class size limits are examples of policies that are less rigid than principals assumed.

Often, the real barriers embedded in centralized budgeting systems, categorical funding, and employment requirements originated from an understandable desire to check corruption, protect the interests of minority groups, and establish minimum quality standards. Overcoming real barriers requires explicit changes to federal, state, and local policies, and when the barriers prevent school leaders from making their schools better, it makes sense to aggressively work both to remove those barriers and to open new autonomous schools.[3] Our findings suggest that true school autonomy and innovation cannot occur without changes in state and district policy. At the same time, investments in principal education programs, development of a principal network, and training in budgeting systems are needed; these efforts can educate principals about the authority they already possess, and help them consider the trade-offs between costs and student performance when they start using their resources in new and innovative ways.

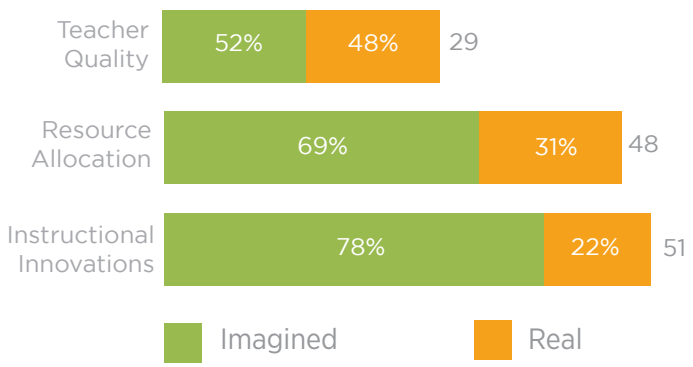
3. There are several different approaches to opening new autonomous schools, including New York City's iZone; Paul Hill's prosed autonomous pilot schools; and Indianapolis's Innovation Fellowships. See also Robin Lake and Betheny Gross, *New York City's iZone*, working paper #2011-1 (Seattle: Center on Reinventing Public Education, January 2011); Paul Hill, "Conserving Principal and Teacher Talent," The Lens (blog), Center on Reinventing Public Education, June 4, 2014; Denisa Superville, "Indianapolis District Holds Contest for Innovative Schools", Education Week, June 11, 2014.

Defining Barriers to Innovation

We asked principals to share their experiences with us by recalling barriers that they have encountered in their career, and how they overcame them. Then we asked principals what barriers they are struggling with right now. We concluded each interview by asking principals to imagine a world where their autonomy was limitless. How would they improve student outcomes? The principals in our sample offered up dozens of ways in which they would change their school. Half of the principals interviewed said they would make new choices about the teachers working in their school. One-third said they would hire more instructional coaches to work with students and teachers. Other suggestions included extending the school day or year, giving credit for competency rather than seat-time, and adding technology. Half of the investments the principals suggested were budget neutral. To afford those that added costs, one principal proposed cutting several expensive but undersubscribed career and technical education programs; another principal suggested converting the school to a charter school.

The obstacles that principals we interviewed said they faced can be divided into three categories: barriers to pursuing instructional innovations, barriers to changing resource allocation, and barriers to improving teacher quality. In every case, as shown in Figure 1, a minority of these barriers were real. In this paper, we show what opportunities principals really have in each of these areas, while at the same time directing the efforts of reformers toward the real barriers that still stand in their way.

Figure 1. Principals identify many barriers but more than half can be overcome



Barriers to instructional innovations

Principals most often reported barriers to pursuing instructional innovations, but this was the area in which we found the fewest real barriers. These barriers were mentioned again and again, yet our analysis found that they were the most likely to be surmountable.

Most of the principals we interviewed were interested in moving to a competency-based system, in which students progress when they have mastered skills and content. The principals felt constrained, however, by remnants of the old accountability system, including state and district policies regarding seat-time requirements and social promotion, as well as rigid pacing guides.

Of the 22 barriers to competency-based learning cited, though, we found that only 2 were real. Social promotion was one of them, especially for high school principals. We frequently heard the rhetorical question, "How am I supposed to educate a ninth-grader who has the skills of a fifth-grader?" But there are many work-arounds to policies seen as restricting movement toward competency-based learning, and many policies have been updated in recent years to reflect an increasing interest in mastery-based progression over traditional methods of awarding credit. A principal in Baltimore said that the state of Maryland stands in the way of having students earn credit by demonstrating mastery of material and competencies. In 2010, however, the Maryland legislature passed policies that allow students to earn credit through work, experience, internships, and demonstration of proficiency.

In 2005, New Hampshire became the first state to eliminate the Carnegie unit, moving instead to a mastery-based system. Each course has been converted into a set of necessary competencies that must be demonstrated for credit to be granted. But the barrier to competency-based learning may only be partially lifted: higher education admissions policies are not yet aligned with K–12 competency policies, New Hampshire's competency-based system does not require every student to have a personalized learning plan, and a 180-day school year is still written into law.[4]

4. The stipulation about the length of the school year is a vestige of the time-served instructional model, in which state funding is based, in part, on the number of funded days of instruction.

Principals in all three states want to personalize the learning experience for students by giving them the responsibility and opportunity to choose from a broader array of on-campus, off-campus, and online credit-bearing classes. But principals said this was not always possible because of standard school practices, informal district policies, regulations, and the traditional expectations of both parents and members of the community.

In one Baltimore high school, more than 30 students are parents with children at home, and they find it difficult to attend classes in person each day. The principal sought to combine online courses taken from home during the day and on weekends with on-campus evening classes. The district invested in an online learning application, but the state approved only English 1, 3, and 4. The principal had no idea what to do for English 2 students. It turns out that this is a real barrier: a review of the state's approved virtual learning opportunities website finds that English 2 is available from the Maryland State Department of Education as preparation for high school assessments, but not as a course for high school credit.

Extended blocks of unstructured time are rare in schools, but personalization often requires time for students to pursue projects individually or in groups. Students in Pittsfield, New Hampshire, schools now start school two hours later on Wednesdays than on other school days, providing them with a block of time to work on projects. This arrangement also gives teachers and staff a block of time to collaborate and plan as a group.

Barriers to allocating resources differently

In order to innovate, principals need to be able to make choices about their spending, but they feel hamstrung in their ability to reallocate their resources to more productive uses. Among the real resource allocation barriers are those tied to grants, class sizes, salary cost averaging, and central office spending on behalf of schools. But barriers related to deadlines driven by the budgeting process and authorization to spend federal grants were typically imagined.

Federal grants are both a welcome source of revenue and a compliance headache for school and district leaders. Vocational education funds, for example, require hiring teachers with very specific qualifications or certifications, make available a narrowly defined curriculum, and then establish onerous reporting obligations. Federal grants demand to be taken seriously lest schools suffer the real consequences for failing to comply. One of the schools in this study (in Hartford, Connecticut) lost a Perkins grant because they failed to hire a career-technical education (CTE) certified teacher with the grant dollars they received. The principal looked back on the event as a valuable learning experience, and decided not to pursue CTE grants in the future because the cost of compliance outstripped the value of the grant.

OVERCOMING A BARRIER: Rethinking transportation to extend learning time and place

School leaders are seeking new ways to conceptualize time and learning—to account for the diverse needs of students, and to leverage resources beyond the school and its staff. Some schools extend the school day and year for students who need more time to master core concepts. Others offer external learning opportunities, such as off-campus internships and service learning. But principals often believe that transportation complications stand in the way of these innovations. The Nashua, New Hampshire, school district, like many other schools and districts, determined that a late bus service would be cost-prohibitive.

In Denver, Colorado, the district began a shuttle service: Success Express, as it is called, runs three morning shuttles and three evening shuttles, allowing students to start their school day earlier or stay later as needed, without having to arrange their own transportation. In addition to the autonomy students gained over how long they stay on campus, students can now exit the transportation network wherever is most convenient for them, which might be near home, a library, an internship, or an extracurricular activity. Denver schools used to have to pay extra for late buses, and after-school programming suffered as a result. The new system eliminated the extra fees and is expected to save the district money.[5]

A principal in a high-poverty school in Baltimore, Maryland, needed a bus to transport students to a company providing internships, but Baltimore City Public Schools has a policy that limits how individual schools can operate buses. The principal looked closely and made two important discoveries: First, while the policy barred school-owned buses from providing transportation from school to home, it did not explicitly ban transportation to internships. Second, the district CEO could approve a school owning a bus. Armed with this information, the principal made his case to the CEO, who gave approval for the school to purchase and operate the bus, and a successful internship program began.

5. Jenny Brundin, "Students Board Success Express," Colorado Public Radio (Centennial, CO: August 16, 2011), http://www.cpr.org/news/story/students-board-success-express (accessed May 13, 2014).

Class size limits can present a real, and some times problematic, barrier to resource allocation, because they prevent principals from allocating teachers and students in an optimal way to maximize student outcomes. For instance, a principal might want to assign more students to better teachers in exchange for relief from other activities, but class size limits may prevent this. Baltimore's labor agreement indicates that class size limitations will be established by the district annually based upon financial and student needs, without discussing work-arounds.[6] However, there are instances when class size limits can be surmounted. The labor agreement in Nashua lays out an overage fee when teachers are assigned more than 31 students, and principals can choose to exceed the limit, and pay the fee, if they desire. Hartford's labor agreement includes class size limits with work-arounds that include written notification, extra compensation, and waivers for experimental teaching situations. Pittsfield's labor agreement is unique in not discussing any firm limits, guidelines, or penalties in regards to class size.[7]

When districts use salary cost averaging instead of actual salary, schools carrying inexperienced, relatively lower-paid teachers don't get to allocate the dollars they save on staff to other activities.[8] Both Hartford and Baltimore used salary cost averaging in accounting for staff costs.[9, 10]

Central office spending on behalf of schools is a real barrier to resource reallocation in many schools. For instance, principals in Baltimore and Hartford, which use weighted student funding to set school budgets, said that district per-pupil revenue was about twice their school's weighted student allocation. This means that these principals have authority over only about half of the educational resources available to their districts. Central administrators should spend funds when economies of scale are present, when all schools benefit equally from the expenditure, and when all schools want the same thing. Examples of central expenditures that could meet these criteria include property and casualty insurance, school board expenses, and budgeting and accounting systems. But many of the decisions made by central administrators violate one or more of these criteria, particularly the one about similar school desires or requirements. Schools that prefer tablets to textbooks and copy machines, assessment software to report cards, and computer labs to libraries are often not allowed to make these trade-offs—not because they are barred from choosing the alternative, but rather because the central office decides how to spend about half of the district's operating budget on behalf of its schools.

Four of the six principals from the two large urban districts said that the timing of the budgeting process is a barrier to using resources differently. Districts want budgets before schools really know what they need. School districts and principals face different incentives in this regard. Central office finance personnel are concerned with keeping the entire district in good financial condition. The district budget office wants schools to make spending commitments early in the year, which helps the district to know its financial position for the year. School leaders, on the other hand, want to delay making spending commitments as long as possible to create a contingency fund for unexpected risks and opportunities as they arise. Principals said that forcing them to make spending commitments too early prevents them from making smart spending decisions. The central office staff we interviewed, though, said that principals could commit funds for one activity, then reallocate them toward another should the need arise.

Understanding the budgeting process is a great benefit to principals. One Baltimore school receiving a federal School Improvement Grant planned on using some of the grant funds on professional development over the summer, but abandoned these plans when he learned that funds would not be available until October or November. Had this principal known that Baltimore City Public Schools allows schools to spend incoming grant funding in advance, his teachers could have received the summer professional development. Though there is some risk in making this move (for example, if the grant funds failed to come in, the school would be on the hook for the spending) it may have been worth it to jumpstart the school's improvement efforts.

6. Baltimore's labor agreement specifies that teachers should not be required to teach continuously for over three hours, or required to teach more than two different subjects or grade levels.
7. Pittsfield's labor agreement places no limitations on the number of students per teacher, the number of teaching assignments per day, or the number of new preparations.
8. Marguerite Roza and Paul T. Hill, "How Within-District Spending Inequities Help Some Schools to Fail," in Brookings Papers on Education Policy: 2004, ed. Diane Ravitch (Washington, DC: Brookings Institution Press, 2004), 201–227.
9. Inexplicably, Connecticut allows its magnet schools to have the best of both worlds. These schools are required to use actual teacher salaries when budgeting for teachers labeled "magnet teachers" and average salaries for teachers labeled "district teachers." Magnet schools can then label their least-experienced and lowest-paid teachers—teachers who earn less than the district's average teacher salary—magnet teachers. The magnet school still receives the district average teacher salary for each of these teachers in its budget. The magnet school is allowed to retain the surplus between the actual and average teacher salary for each of its magnet teachers, and redirect the funds toward other activities. Teachers who are paid more than the district average salary retain the label "district teacher," and the magnet school enjoys the subsidy afforded to all schools in the district by budgeting with average—rather than actual—teacher salaries.
10. Public Impact, Funding a Better Education: Conclusions from the First Three Years of Student-Based Budgeting in Hartford (Chapel Hill: Public Impact; and Hartford: Achieve Hartford!, 2012).

Barriers to teacher quality

Innovating and improving schools depends significantly on getting the right talent into schools. Schools need not only strong teachers but those whose interests and practices match the goals and methods of the school. Unfortunately, not only did principals across our sample identify constraints on their ability to manage their staff to improve teacher quality in their schools, nearly half of the barriers they cited were real.

Teacher labor agreements, perhaps more than any other factor, are thought to prevent principals from using resources more effectively.[11] In 2008, a study done by the Thomas B. Fordham Institute determined that some labor agreements with teachers' unions potentially restricted the ability of school systems to implement merit pay and other new public management reforms.[12]

In big districts, one of the clearest real barriers is the practice of forced placements, where a central administrator can place a teacher in a particular school over the objections of the principal.[13] Principals exploit some loopholes by posting openings after forced placements have been made and by becoming transformation schools under the federal School Improvement Grant program. (Schools in this program are often given full staffing autonomy, at least during the first year or two of the grant.) But these are temporary fixes to an established practice that was seen as unavoidable by the principals in our sample.

Another real barrier to better teachers is the termination clause in collective bargaining agreements. To be clear, the principals we interviewed knew that they had the power to remove grossly negligent or malicious teachers, and most had done so at some point. However, those same principals expressed deep concerns about the lowest-performing 5 to 10 percent of their teaching staff, who were neither serving students well nor grossly negligent, but are protected by the labor agreement.

It is also a real barrier when districts prevent schools from hiring outside the district. For example, Baltimore City Public Schools frequently rejects requests by school principals to hire applicants from surrounding districts, instead forcing schools to select from a central hiring pool. One Baltimore principal prefers to use a private agency to provide special education personnel, because they can be sent back if they don't work out. But the district requires the school to use special education personnel from the central office most of the time and does not give principals the authority to reject poor performers.

Principals do, however, have some leeway with other common barriers to managing their talent. For instance, while principals bemoaned the limited amount of time available to work directly with teachers, leaders can in many cases find ways to make meeting time happen. Hartford's labor agreement permits principals to mandate additional staff meeting time, with the superintendent's approval. In Pittsfield, the district implemented late-start Wednesdays to provide all teachers, staff, and administration time to collaborate, plan, and participate in professional development.

In Pittsfield, the labor agreement was thought to prohibit the district from asking teachers to work evenings and weekends—yet the district wanted to expand student access to the learning lab and needed to staff it. This perceived barrier was overcome by hiring a new employee who was not classified as a teacher, and thus could provide supervised evening and weekend access to the school. However, we found that the district's labor contract does not actually prohibit teachers from performing evening and weekend duties—they just have to be asked to do so and agree.

11. Jane Hannaway and Andrew J. Rotherham, *Collective Bargaining in Education and Pay for Performance*, working paper 2008-11 (Nashville: National Center on Performance Incentives, February 2008).
12. Frederick M. Hess and Coby Loup, *Leadership Limbo* (New York: Thomas B. Fordham, 2008).
13. On forced placements in Hartford (one of the cities represented in our study) see National Council on Teacher Quality, *Human Capital in Hartford Public Schools: Rethinking How to Attract, Develop, and Retain Effective Teachers* (Washington, DC: National Council on Teacher Quality, 2009).

Removing Barriers to School Improvement

Several approaches could help schools access the flexibility they want and need to deliver the performance students deserve.

The most obvious is to dismantle those policy barriers that are real. Figure 2 shows that state policy can make a difference.[14] An in-depth policy review (see Appendix A) revealed that New Hampshire offers a better policy climate for autonomy and innovation than Connecticut (Maryland's policy climate scored in the middle of these two states). Even though the principals we interviewed from New Hampshire cited slightly more barriers than did their peers in Connecticut and Maryland, we found that principals in New Hampshire grappled with the fewest number of real barriers—four per principal—in our sample. Principals in Connecticut, with eight real barriers per principal, encountered twice as many real barriers as principals in New Hampshire. Our policy climate rankings correlate closely with the number of real barriers found in each state, as Maryland's support for school autonomy and innovation (medium) and number of real barriers per principal (5.3) both fall in the middle of New Hampshire and Connecticut.

Chartering schools, at least in Maryland, seems to reduce the number of imagined barriers that principals face, but the single charter school in this study still encountered real barriers at a rate similar to some of the district-managed schools. The charter school in our sample, a K–8 school in Baltimore, cited only 5 barriers during our interview, but 3 of those barriers turned out to be real. The school with the second-fewest number of barriers, a district-managed school from Baltimore, cited 14 barriers in total, 3 of which turned out to real barriers. In Pittsfield, another district-managed school faced just 2 real barriers. Removing imagined barriers is an important step forward because it frees principals to spend more time thinking about how to use their autonomy to improve their schools. But charter schools are supposed to get real autonomy in exchange for accountability for student outcomes. The persistence of real barriers to charter school improvement violates the spirit of this explicit trade-off and jeopardizes the promised productivity expected from autonomy and accountability.

Figure 2. Principals face fewer real barriers in states that support autonomy

	NEW HAMPSHIRE	MARYLAND	CONNECTICUT
State support for school autonomy and innovation	High	Medium	Low
Total barriers per principal	19	16.7	17.5
Real barriers per principal	4	5.3	8
Real barriers as a percentage of total barriers	21%	32%	37%

14. In this section of the paper we are interested in exploring the relationship between state policy and real barriers, but charter schools are exempt from many of the state polices that district-managed schools are required to comply with. Therefore, we excluded the Baltimore charter school from the analysis presented in this section.

Advancing School Autonomy and Innovation

State Policy Recommendations

- Accelerate the shift from holding districts and schools accountable for schooling inputs (like seat-time requirements and the use of mandated curricula) to measures of student performance like New Hampshire's competency based model.
- Fund students instead of programs, staff positions or school days, and judge progress based on the proportion of aid allocated on a student basis.[15]
- Increase charter school autonomy by granting them explicit freedom from forced placement policies and compliance with teacher certification requirements.
- Develop an innovation designation that interested districts and schools can apply for (e.g., Indiana and Colorado).

District Policy Recommendations

- Eliminate forced teacher placements.
- Facilitate the removal of poor-performing teachers.
- Remove hiring restrictions, especially requirements to hire from within the district.
- Allocate a larger proportion of district operating funds to schools on a per-student basis.
- Charge schools actual, not cost-averaged, teacher salaries.
- Allow existing schools to apply for autonomous pilot school status and create new autonomous schools.[16]
- Closely monitor student weights and performance: add new student-need categories (e.g., students significantly behind grade level), increase or decrease existing weights, eliminate weights that are no longer necessary.
- Review district policy waivers and work-arounds, remove barriers when possible, empower principals when barriers must stay (e.g., switch from superintendent signature required to written notification to superintendent required), and communicate revised policies to central administrators, school leaders, teachers, and parents.

Given that two-thirds of the barriers principals cited were in perception only, then policy changes are only one-third of the battle. The highest-impact, and in fact easiest, way to address these barriers is to educate principals on the authority they already possess. We offer four recommendations for building up the capacity of principals.

1. **Encourage networking among principals so they can share experiences.** Every principal we interviewed shared stories of barriers they overcame and barriers they had come to accept as immovable. Sometimes the barrier one principal overcame was the same barrier another principal accepted as being outside the bounds of their authority to change. This was the case with the transportation barrier to off-campus learning opportunities, which a Baltimore principal found a solution to but a Nashua principal did not (see box on page 6). It is the case, as well, that even within districts, different principals cited different numbers of barriers. In Baltimore, one principal of a district-managed school named 14 barriers and another named 21.
2. **Help principals to understand teacher contracts inside and out.** We presented some evidence that the barriers identified within the teacher labor agreement varied by principal. These findings suggest that districts have the knowledge and creativity to overcome many of the barriers principals grapple with, but that these solutions are not being categorized and distributed in a systematic fashion. A school autonomy database could provide a place for principals to share success stories and efficiently search for interpretations and work-arounds. Central administrators could get in the game, too, by providing legal and technical guidance, organizing and maintaining the database to make it user-friendly, and providing incentives for school leaders to contribute to and make use of the database.
3. **Train principals in the budgeting process.** At the end of our interviews, we asked principals what changes they would make if policy barriers were of no concern, and what budgetary trade-offs they would make. The questions seemed to catch them off guard. To put their responses in context with the training they had received, we reviewed the subject-matter index of four of the leading graduate-level education finance textbooks.[17] Only two of the four principals mentioned benefit-cost analysis in any context, on a total of three pages. Benefit-cost analysis addresses knotty problems like estimating gains and losses from competing programs, decisionmaking under uncertainty, and assessing the impact that decisions have on different groups. Such analysis can help principals choose programs that deliver the biggest learning gains for the fewest dollars. Clearly there is a need for targeted education in this area, as principals are becoming increasingly responsible for making investment trade-off decisions in order to improve student outcomes.

15. Larry Miller, Marguerite Roza, and Suzanne Simburg. "Funding for Students' Sake: How to Stop Financing Tomorrow's Schools Based on Yesterday's Priorities" in Building the Productivity Infrastructure, The SEA of the Future, ed. Betheny Gross and Ashley Jochim (San Antonio: Building State Capacity & Productivity Center at Edvance Research, Inc., 2014).
16. Hill, "Conserving Principal and Teacher Talent."
17. The textbooks that we used for our analysis include: Bruce D. Baker, Preston Cary Green, and Craig E. Richards, *Financing Education Systems* (Upper Saddle River, NJ: Prentice Hall, 2008); Allan R. Odden andLawrence O. Picus, *School Finance: A Policy Perspective,* 3rd ed. (New York: McGraw Hill, 2004); William T. Hartman, *School District Budgeting* (Lanham, MD: ScarecrowEducation, 2003); and Helen F. Ladd and Edward B. Fiske, eds., Handbook of Research in *Education Finance and Policy* (New York: Routledge, 2012).

4. **Use budgeting simulations to get better results from current resources.** Districts should also offer principals the opportunity to evaluate trade-offs by conducting budgeting simulations—using real data from the schools the principals lead—to identify and discuss what barriers to innovation exist and how they might be surmounted. Baltimore City Public Schools offers principals the opportunity to participate in budgeting simulations, but does not yet offer schools the chance to work with their actual budgets. High-quality simulations require a good deal of expert support—from high-performing district and charter school principals, scholars with deep knowledge about effective interventions and promising new models, finance experts that can help think of creative new uses for existing resources, attorneys to find work-arounds to policy barriers, and, most importantly, the superintendent to champion school autonomy and innovation with the goal of improving student outcomes.

The results of this study are drawn from a small set of schools and districts and leave a great deal of ground to be covered. However, this effort to compile a detailed view of what principals want to do, what they think they can do, and what they *really* can do provides us with two key findings. First, there are a specific set of state and district policies that must be changed to grant schools the autonomy they need to improve student outcomes. Second, our findings reinforce the message delivered by Frederick M. Hess in his book, *Cage-Busting Leadership*, that despite the rules and regulations, school and system leaders "have far more freedom to transform, reimagine, and invigorate teaching, learning, and schooling than is widely believed."[18] Districts that want their schools to innovate will likely need to recruit more radical leadership, as Hess argues, as well as revamp principal training to focus on how school-level innovation can be accomplished despite the rules. While it is important to help principals find workarounds to onerous rules, we also believe that district and state leaders who are serious about innovation need to systematically fight for changes in laws and rules that truly prohibit school actors from innovating and producing dramatically better results.

18. Frederick M. Hess, *Cage-Busting Leadership* (Cambridge, MA: Harvard Education Press, 2013).

Appendix A: Data & Analytical Methods

Selecting schools

Our sample includes schools located both in states with policy environments thought to favor school-level autonomy and in states whose policies hinder autonomy. We restricted our search to New England, the region of greatest interest to this study's funder. From this set of states, we wanted to contrast the state with the most support for reinventing public education to the state with the most support for a stable policy environment. This tests the hypothesis that states with policies that support reinvention grant schools greater autonomy and present fewer barriers to change.[19]

Table A1 presents the five factors used in our policy ranking system. Each factor contains two or more related variables. For instance, the finance factor includes six variables: the presence of a fund for innovation, state-determined minimum salaries for teachers, the availability of financial data, the progressivity of the funding distribution, the number of categorical programs the state operates, and the amount of influence principals report having over their school budgets. Table A1 provides one example of each factor that indicates state policy support for reinvention, and one example that indicates support for stability.

Through our ranking process, we determined that New Hampshire was likely to present its districts and schools with the fewest barriers to school autonomy, and Connecticut was likely to present the most barriers (see figure A1). It is worth noting that these two states were not very far apart on our scale—New Hampshire had the equivalent of only three more policies favorable to reinvention. All of the states we ranked had more policies that supported the status quo than policies that fostered reinvention.

Figure A1. States Ranked by Support for Reinvention or Stability

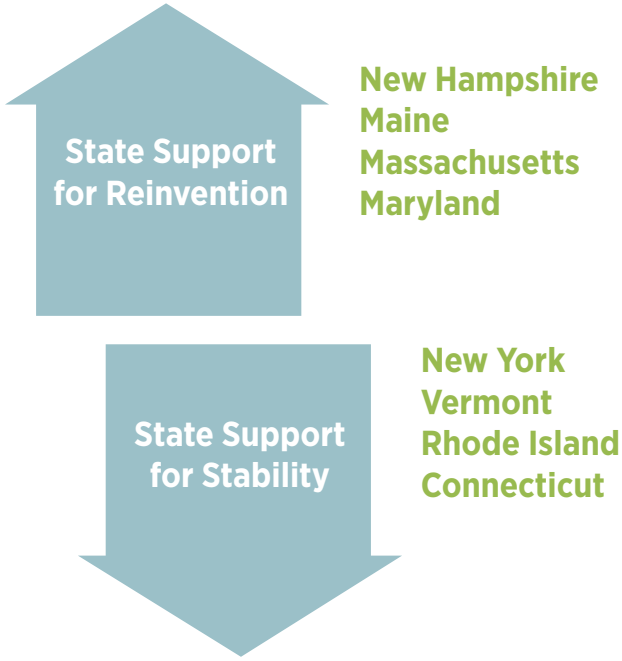


Table A1. Factors for Ranking States on Support for Reinventing Public Education

FACTOR	SUPPORT FOR REINVENTION	SUPPORT FOR STATUS QUO
Culture	State is a member of change-oriented networks, such as the Innovation Lab Network	State not a member of networks supporting change
Finance	Higher percentage of state aid allocated without use restrictions	Higher percentage of state aid allocated with use restrictions
Teachers	State allows alternative teacher certification	State does not allow alternative teacher certification
Governance	Schools have significant influence over hiring and firing decisions	Schools do not have significant influence over hiring and firing decisions
Student Assessment	Competency-based model	Seat-time requirements

19. A forthcoming paper will delve more deeply into the ranking of states by their support for reinvention.

After we had ranked the states, Baltimore City Public Schools approached us with a research request. A key element of Baltimore's reform strategy was to give schools autonomy over resources in exchange for accountability for student outcomes. In 2002, Maryland had passed major reforms of its education finance system that were phased in over six years; one significant goal was to bring flexibility to fiscal decisions. The number of categorical programs, which tightly prescribe how money is spent, was reduced from 50 to 4, and restrictions on how districts may spend various state revenues were lifted.[20] The district leaders who approached us were interested in learning more about how much autonomy their schools currently have and what barriers stand in the way.

School districts were selected for this study based on their size (to increase variety) and their willingness to participate. The districts included vary in both size and in spending per pupil (see table A2). In all three states, the largest or second-largest school district in the state is included in our sample. We included the Pittsfield, New Hampshire, school district to incorporate a rural school's perspective and to learn more about barriers in a district that has received grants (from this study's funder, the Nellie Mae Education Foundation) to implement student-centered learning.

Table A2. Sample School District Statistics

	BALTIMORE CITY, MD	HARTFORD, CT	NASHUA, NH	PITTSFIELD, NH
Enrollment	85,306	21,356	11,895	614
Number of Schools	195	49	17	2
Operating Budget	$1,320M	$400.11M	$97.35M	$9.68M
Operating budget (per pupil)	$15,373	$18,735	$8,184	$15,765

We asked central administrators for help selecting schools led by thoughtful, reflective, and smart principals. In Frederick Hess's words, we were looking for *cage-busting* principals. We wanted to learn how the best school leaders overcame barriers, and also to document those barriers that even high performers could not surmount. We also selected based on school performance: we wanted to avoid schools that were in the process of restructuring; we sought schools that served a high proportion of at-risk students whose performance had been improving steadily over time. Table A3 shows the characteristics of the schools we selected, which included two 6–12 schools, four high schools, one elementary school, and one K–8 school.

Table A3. Sample School Characteristics

SAMPLE SCHOOLS	K	1	2	3	4	5	6	7	8	9	10	11	12	ENROLLMENT	% FREE OR REDUCED-PRICE LUNCH
Nashua (NH 1)										●	●	●	●	2,034	26%
Pittsfield (NH 2)							●	●	●	●	●	●	●	155	22%
Hartford (CT 1)										●	●	●	●	387	99%
Hartford (CT 2)										●	●	●	●	285	61%
Baltimore (BT 1)	●	●	●	●	●	●								315	86%
Baltimore (BT 2)										●	●	●	●	226	84%
Baltimore (BT 3)							●	●	●	●	●	●	●	195	84%
Baltimore (BT 4)	●	●	●	●	●	●	●	●	●					267	25%

20. Molly Hunter, *Maryland Enacts Modern, Standards-Based Education Finance System: Reforms Based on Adequacy Cost Studies* (New York: National Education Access Network Resource Center, 2002).

Interviewing principals

For each principal, a Center on Reinventing Public Education analyst used a semistructured questionnaire (see below) to conduct an interview that lasted between two and three and one half hours. Early in the interview, the analyst focused on building rapport with the subject to encourage an open dialogue. In the second phase of the interview, the analyst asked about barriers to innovation that the principal had already overcome. In the third phase, the focus shifted to desired changes at the school that were actively prevented by existing barriers. The principal was asked to participate in a simulation by reflecting on the conversation, imagining that all barriers were removed, and then naming the three changes to the school that would most improve student outcomes. Principals were then asked to identify cost savings elsewhere in their simulated budgets that would allow them to implement their three innovations while keeping their budgets balanced. Finally, the principals were asked to predict how these simulated changes, if implemented, would impact student outcomes.

Each school was provided a $500 donation to compensate the school for the time the principal spent participating in this study. To encourage candor, study participants were told that principals and schools would not be identified by name.

Each interview was recorded using AudioNote software. The analyst also took notes during the interview, in the same software program, which time-stamped those notes. The recordings were transcribed and merged with the notes taken by the analyst conducting the interview. We then conducted a keyword analysis of transcripts to search for each of the researcher-defined keywords and document the frequency with which they were used. We documented each of the barriers mentioned in a spreadsheet for further analysis.

Classifying barriers

Before classifying each of the barriers by source, we verified that the policy existed in writing. For each barrier identified, we then searched for potential waivers or other work-arounds to the policy and legal interpretations stated by the study participants—sometimes with the assistance of district or state administrators. We then classified the barriers as "real" or "imagined" barriers. We defined a real barrier as an immovable published statute, policy, or managerial directive that brings the threat of real consequences if broken. An imagined barrier is defined as a statute, policy, or managerial directive that appears to be immovable, but can be surmounted though a waiver option or alternative interpretation, or can simply be ignored without consequences.

To understand whether school, district, and state characteristics are associated with the number of barriers cited and the proportion of real and imagined barriers, our sample was divided and results were compared across three subgroups:

- State support for autonomy versus state support for stability
- Student-centered learning (SCL) schools versus non-SCL schools
- Charter-managed schools versus district-managed schools

Interview questionnaire

1. Tell us about your school and the kinds of work you do here (flag interesting responses to probe later in the simulation, ground them in their school so that this conversation is meaningful to them).
2. Current resource allocation strategy:
    a. Do you have kids in this school with different levels of knowledge?
        i.PROBE: Tell me about the assessment systems you use to determine student performance.
        ii. PROBE: How do you address the challenge of educating students with different levels of knowledge?
    b. Tell me about some of the assignments you give kids in your school.
        i. PROBE: How do you know if a student is being taught and practicing complex reasoning?
        ii. PROBE: Do you assign projects, essays on current events, activities that involve two or more subjects?
    c. When do you decide to introduce new material?
        i. PROBE: How do you support students who need more (or less) time to master concepts?
        ii. PROBE: How do you assess whether a student has mastered a particular concept? What do you do for those who haven't mastered material?
    d. In what ways are your students engaged in programs connected to the local community?
        i. PROBE: Do you offer internships to all students?
        ii. PROBE: Do members of the community come to campus to work with your students?
    e. How do you organize the school day in your school?
        i. PROBE: Do you offer extended day, week, or year learning opportunities?
        ii. PROBE: Do you vary student grouping, instructional method, provide time for staff to integrate assignments across subjects?
3. For resources that are used in a particularly innovative way, how did you pull this off? What barriers did you overcome? How did you overcome them?

4. Tell me how you would use your resources differently if you could.
    a. PROBE: College expectation program—what would you change about this program if you could?
    b. PROMPTS: Blended learning, tutoring, more time, community partnerships, staffing changes, counseling, curricular changes
5. What are the barriers preventing you from implementing these initiatives?
    a. PROMPTS: need more resources, district policies prevent it, resistance from teachers and staff/parents, state laws and policies, federal laws and policies, teacher labor agreements
6. Budget simulation:
    a. Choose the top three resource-allocation changes from those discussed above that would likely have the biggest positive impact on the number of students college- and career-ready after graduating from this school.
    b. Estimate how much it would cost to implement those three changes.
    c. What would you cut from your budget to fund those three changes?
    d. Predict if and how your performance indicators would change after implementing these changes.
        i. PROMPTS: Objective measures: State test scores, graduation rates, college attendance rates, SAT scores
        ii. PROMPTS: Subjective measures: writing quality; critical reasoning; student, staff, and parent satisfaction; increased school popularity

Appendix B: Labor Agreement Analysis

To document the similarities and differences in the content of contracts across school districts, we borrowed heavily from the classification scheme for coding teacher contracts presented by Chung, Duncombe, Melamed, and Yinger in "Documenting Variation in Teacher Contract Provisions Across New York School Districts."[21] This coding scheme involved a total of 91 provisions that fit roughly into the categories of compensation schemes, health insurance benefits, teaching schedules, teaching assignment and classroom environment limitations, professional development requirements, policies on transfer, leave provisions, teacher evaluation systems, and personnel file regulation. The coding process included going through each individual contract and determining whether the provision was addressed in the contract, and if so, how. We narrowed Chung and colleagues' provisions down to 28 specific provisions, chosen based on their relevance to school autonomy. These provisions can be grouped into provisions regarding teaching schedules, teaching assignments/classroom environment, professional development, and transfers. In the text and tables below, we refer to Chung and colleagues' complete provision list as "total provisions" and our restricted list as "selected provisions."

Analyzing contract restrictiveness is difficult, so we used a few simplifying assumptions. We assumed contracts with more provisions to be more restrictive. We also assumed contract length to be negatively associated with school autonomy. Of course, more provisions and contract length could be used to provide lots of waivers and work-arounds to contract restrictions, but the four contracts we studied closely did not have much language on waivers and work-arounds.

Hartford had the longest contract (73 pages vs. a four-district average of 59.25 pages), as well as the highest percentage of total provisions discussed (85% vs. a four-district average of 73%) and the second-highest percentage of selected provisions discussed (86% vs. a four-district average of 73%). On the other end of the spectrum, Pittsfield's contract weighed in at a mere 31 pages, and discussed only 56% of total provisions and 57% of restricted provisions, the lowest percentage across both statistics. It should be noted that Pittsfield is the smallest district in our sample and Hartford is the second-largest district in our sample. See table B1 for additional analysis by district.

Table B1. Labor Agreement Restrictiveness by District

	NASHUA, NH	PITTSFIELD, NH	HARTFORD, CT	BALTIMORE CITY, MD
Length of Contract	63 pages	31 pages	73 pages	70 pages
Selected Provisions: Total "Discussed"	23	16	24	25
Selected Provisions: % "Discussed"	82%	57%	86%	89%
Total Provisions: Total "Discussed"	64	51	77	74
Total Provisions: % "Discussed"	70%	56%	85%	81%

21. Il Hwan Chung, William Duncombe, Lisa Melamed, and John Yinger, "Documenting Variation in Teacher Contract Provisions Across New York School Districts" (paper prepared for the Education Finance Research Consortium, Syracuse University, Syracuse, NY: 2008).