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The Big Bet on Adding Staff to Improve Schools Is Breaking the Bank

HOW CAN WE DO RIGHT BY STUDENTS AND THE BUDGET ALIKE?

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Over the last half century or so, we've made a big bet in public education: that investing heavily to add more staffing will improve schools. This upstaffing stems from everything from class-size reduction initiatives to local, state, and federal moves intended to improve services for various subgroups of struggling students. Undoubtedly, this staffing strategy has served some students and schools well. (More on that in a bit.) But many still see a gap between our hopes for student outcomes and the actual outcomes we're seeing. And financially, the big bet on adding staff is unsustainable. By going all in on staffing, we've crowded out other potential big-bet investments that might let us do more for students with the dollars at hand.

While school spending fluctuates, the longer-term patterns show us that US public school spending is substantially higher than several decades ago. We now spend an average $13,000-plus per pupil in public funds. After accounting for inflation, that's double what we spent in 1970.[1]

From parsing K–12 investment patterns over the decades, it seems the thinking behind the big-bet theory on dedicating that influx in funding to growing the staffing counts might have gone something like this: we have new funding for schools, but rather than spend it to give students more time in school or to raise teacher salaries, the very best way to increase outcomes for students is if there are more adults in the building on the days they are in school.

To wit, schools today have many more adult employees (of nearly every type) than typical schools did four or five decades ago. Many built-in cost drivers, from rising health care costs to pensions, make unabated continued growth in the number of staff financially unsustainable. As we all know, each time a new staff member is hired, the system pays salary and benefits.

Rather than doubling down on the big bet of investing in adding staff, school systems instead could conceivably have used the cash to boost their staffs' salaries (which they generally haven't done). Had the system taken the big bet on raising salaries, today we'd

have a higher-paid workforce—and possibly a *different* workforce, as higher salaries tend to produce a larger applicant pool. Research suggests that those larger applicant pools are in turn linked to teacher quality, which directly impacts students.

Or the big bet could have been on adding weeks to the school year—students today get no more time in school than their parents did. Adding more learning time might have made sense given that the research has documented a causal link between learning time and student outcomes. And adding days to the calendar would have meant larger paychecks for teachers.

Or the system might have bet big on investing in different education delivery models altogether, perhaps harnessing promising strategies used in other labor-intensive industries for improving productivity, like coproduction. (Coproduction is essentially a mechanism where the beneficiaries participate in the delivery of the services they use.)

In this paper, we dive into these and other alternative big-bet trade-offs to uncover a broader range of policy opportunities for leaders to consider going forward. In doing so, we explore the key cost drivers associated with each trade-off to help leaders weigh different options in the context of limited resources. But we're not suggesting that leaders shop around for any single (next) big bet. Rather, leaders might explore and make multiple bets, thereby employing a range of strategies that might work in different ways for students and different contexts.

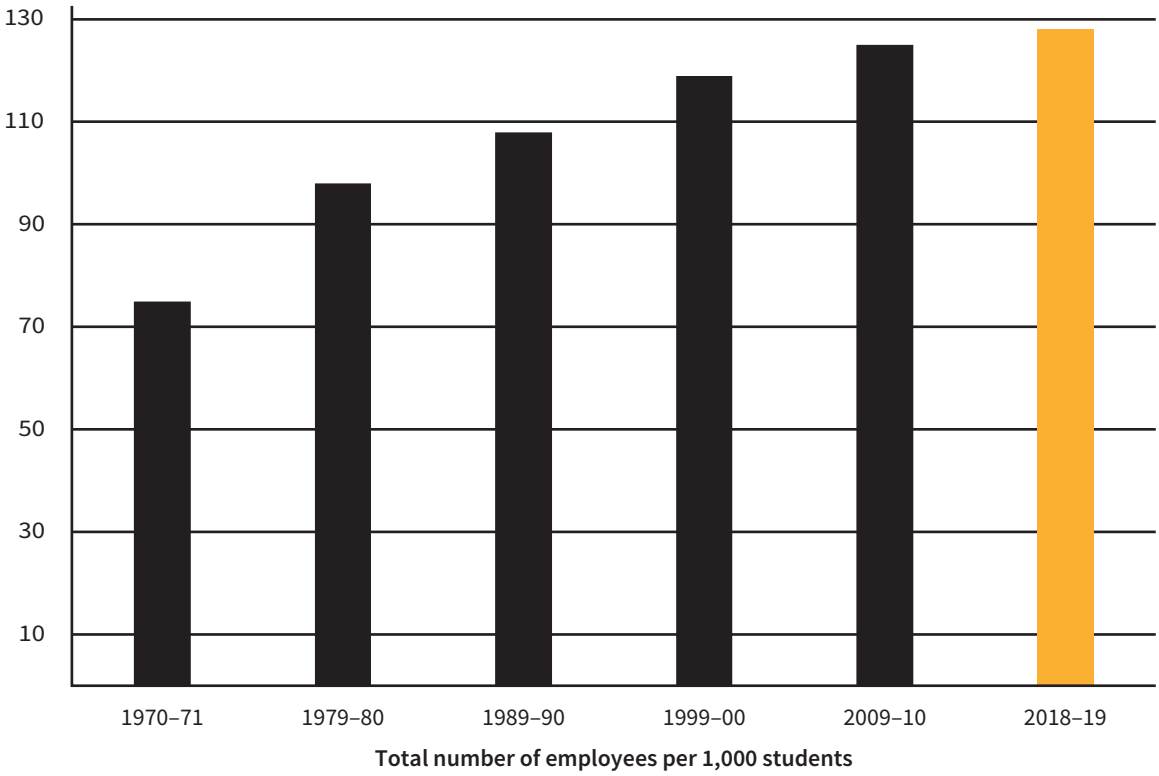
As to the big bet on adding staff, let us be clear before moving forward: we're not proclaiming that it is some wholesale failure. To be sure, research suggests that the added staff strategy has yielded improvements. The issue explored here is, at what cost? And compared to what other options? (Of course, parsing student outcomes from any intervention is a messy business, particularly when there seems to be no universal agreement on what yardstick we should even use to measure outcomes, from standardized test scores to graduation rates to student climate survey results to social-emotional learning targets.) *The issue under discussion here is whether,* ***for the dollar****, the big bet on adding staff is the* ***best*** *bet for students with the resources at hand.*

Thanks to the Big Bet, Schools Today Have Many More Staff Than in the Olden Days

While there is no single reliable data source on total school staffing over the decades, the trends across the disparate data sets we have indicate that schools have more staff than they did back in the day (when this author was in elementary school). One study merged data from several sources (US Bureau of Labor Statistics, National Center for Education Statistics, National Education Association) to capture total staffing (all employees, not just certificated) from 1970 to 2014.[2] This study found greater growth in staff in the 1970s and 1980s, with some year-to-year dips, particularly following the 2008 Great Recession.

Figure 1 summarizes the upstaffing trend with figures from each decade by quantifying the number of staff per thousand students. We calculate the 2019 figure by applying percentage

Figure 1. Five decades of staffing data reveal increases in staffing per thousand students.



Source: Jim Simpkins and Marguerite Roza, "The Real Deal on K–12 Staffing," December 2014, with the addition of the author's calculation for 2018–19.

increases from the NEA's Rankings and Estimates to the 2014 figures. The national averages suggest that staffing has grown from 75 workers per thousand students in 1970 to an average of 128 staff in today's schools. Simply put, schools of today, on average, have more adults in them than in previous decades.

How to interpret the growth? Importantly, the above figures are national averages that mask striking differences in the data across states. For example, Simpkins found that Vermont schools had 211 workers for every thousand students in 2014, where Nevada had only 72. Some differences can be attributed to overall school funding; others may also have to do with school size or enrollment patterns (assuming many underenrolled schools have more staff than their student counts warrant) or other contextual factors.

What are all the new staff positions in schools? It's difficult to parse the growth by type, and again, patterns are surely different across states and over the decades. The 1975 federal Individuals with Disabilities Education Act (IDEA) certainly accounts for some of the increased staffing (particularly during the 1970s and early 1980s).[3] Prior to 2005, at least twenty-four states adopted class-size reduction policies, prompting an increase in classroom teachers (especially in the 1980s and 1990s).[4] Many schools have also added music, arts, PE,

or computer teachers, all of which were less commonly taught by specialist teachers several decades ago. One study indicates that the largest growth in certificated staff from 1960 to 1999 was in this "other classroom teachers" area.[5]

When taking stock of staffing trends, education leaders often point to the new demands placed on schools in recent years. Myriad policies from the local, state, and even federal level (as noted with IDEA above) instituted programs generally with the goal of improving services for various subgroups of struggling students. And that pattern has continued in the last few years, as schools have added specialists as reading coaches, professional developers, in programs for students with limited English proficiency, counselors, teacher leaders, behavioral specialists, nurses, social workers, and more. NEA data indicate that the largest growth in staffing in the most recent decade has been in the category of "other professionals" (44 percent growth) and principals and supervisors (17 percent growth), while during the same time period the number of teachers was essentially flat.[6] The one staff category where numbers appear to be dropping is librarians.[7]

Studies led by Jackson and LaFortune do find that the added funding associated with the big-bet investment in added staff has yielded measurable improvements for students.[8] As we've discussed here, it is certainly not the only strategy with the potential to improve student outcomes. Nor do we know that it is the best strategy if the goal is to leverage limited dollars for maximum student effects (as both Jackson and LaFortune caution). But it is a strategy that can't continue on its path of growth without being fiscally unsustainable over the long term.

Schools Have Increased the Number of Staff but Haven't Increased Learning Time, Despite Research That Says It Helps Students

Checker Finn makes the point that amid all the new investments in staffing, students didn't get a single additional day of schooling.[9] And indeed, typical US schools continue to operate for some six and a half hours a day for an average of 178 days a year[10]—exactly the same number of days averaged three decades ago.[11] And in economic downturns, the number of school days is often one of the first cuts made.[12]

But the research suggests that adding time for students is a promising strategy for improving student outcomes. Several studies have established a positive causal relationship between more learning time and higher achievement.[13] (Still unknown is whether the achievement effects persist beyond elementary and secondary school and whether there are any adverse effects on health from spending more time in school.)

Some higher-performing school systems in other countries have gone the route of increased learning time: each year, students in Japan and South Korea attend school for a full month more than US students.

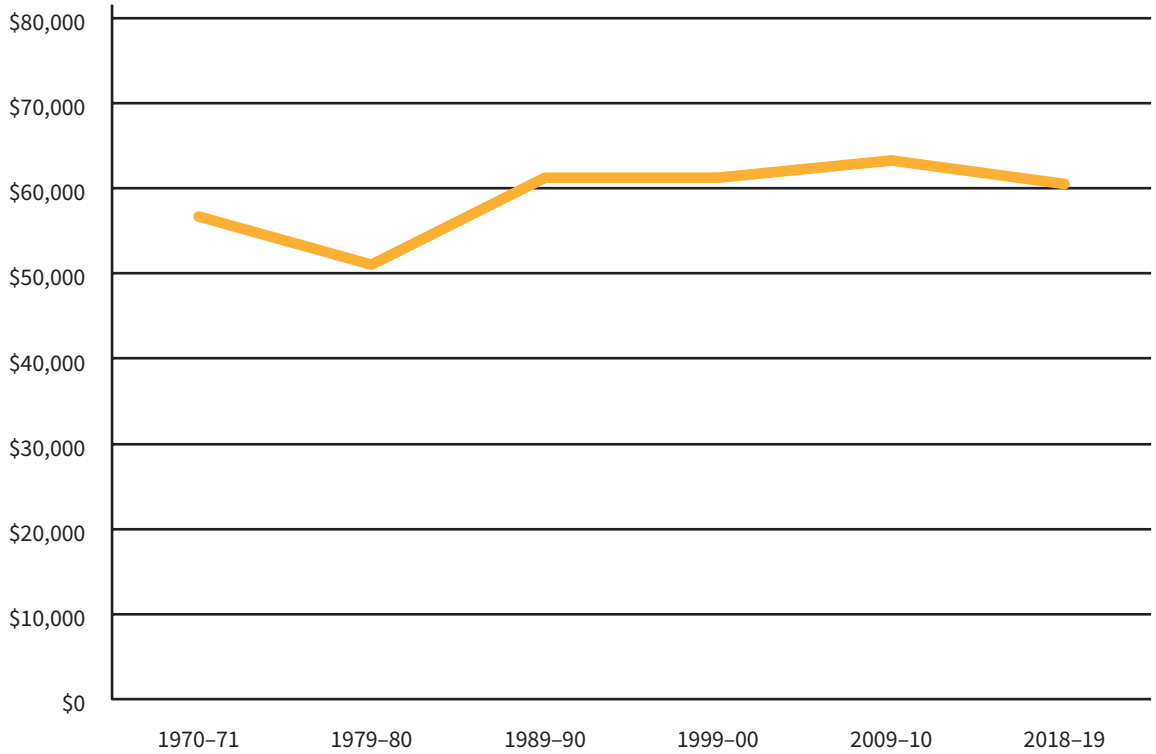
Some US states and districts have, in fact, implemented policies to increase student learning time. Take Florida's extended school day effort or the District of Columbia's effort to lengthen the school year (both are targeted to lower-performing schools). But the data tell us that the strategy of adding student learning time to the school year hasn't taken off in any meaningful way in this country.

There's some irony in this. When trying to capture the impact of a given intervention on student outcomes, researchers often quantify the effect size by comparing it to weeks of learning. (For instance, one study quantifies the positive effect of a merit pay plan and finds that its effect is equivalent to adding three extra weeks of school for students.[14]) Rather than convert a given intervention's effect into equivalent weeks of learning, could we instead contemplate simply *adding the weeks of learning as the intervention*?

Schools Have Increased the Number of Staff but Haven't Increased Teacher Salaries, Even Though We Know Teachers Matter

As noted earlier, while we are spending more per pupil than in earlier decades, we haven't increased average annual salaries (either by adding days to the calendar or simply by boosting wages). As figure 2 below demonstrates, average US teacher pay—which stood at $60,483 in 2018—hasn't changed much at all after adjusting for inflation.

Figure 2. Teacher salaries have remained relatively steady over the decades.



Source: NCES, https://nces.ed.gov/programs/digest/d18/tables/dt18_211.60.asp.

It's common to blame the stagnant pay on disinvestment in schooling (and there was indeed a funding decline following the last recession).[15] But the longer-term trends suggest that average funding for schools has since climbed and is at higher levels than in any previous years, and yet salaries haven't grown. Once again, patterns vary by state, but on average, the system did not apply additional dollars to teacher pay.

It is hard to interpret the flat salaries in any way other than that school systems didn't prioritize spending on teacher salaries. Had salaries kept pace with increases in total spending even since just 1990, one analysis finds that the average teacher would be making some $20,000 more than she is paid today.[16]

That's significant given the ample evidence that shows teachers matter: the effects of being taught by a top teacher persist well into adulthood.[17] Research supports the notion that well-designed teacher pay increases can be a successful strategy for improving student outcomes. The link between teacher pay and teacher effectiveness starts with evidence that raising salaries is a documented means to grow the applicant pool, whether for all positions or for specific roles.[18] The link continues with research that suggests a positive connection between larger applicant pools and teacher quality—in other words, when the system has a broader applicant pool from which to hire, the system tends to hire more successful candidates.[19]

Hanushek finds that countries which pay their teachers more relative to other professionals do indeed draw a labor force from the higher parts of the college skill distribution.[20] And consequently, where teachers are paid higher relative wages, the evidence suggests these countries can attract and retain more effective teachers. Research also finds that targeted pay plans, such as merit pay, translate into positive effects on student test scores.[21]

How to Explore Value for the Dollar? Start with Cost-Benefit Analysis

Given the evidence that strategies like adding time for learning or raising salaries can positively impact student learning, it's legitimate to ask whether these investments should be considered as potential alternatives to a strategy of adding staff.

To be sure, each strategy costs money. The choice to invest in adding days to the school year consumes resources that otherwise could go elsewhere. For example, Figlio, Holden, and Ozek find that adding days to the calendar or hours to the day can cost $800 per pupil or more.[22] If that money gets used to pay existing staff to work a longer year, it might have the effect of both lengthening learning time *and* raising salaries. Similarly, a strategy focused squarely on raising salaries will come at the expense of other investments.

Because school funds are always inherently constrained, policy makers ought to weigh competing strategies through the lens of which can do the most with the limited dollars at hand. In other words, which bet is the best bet *for the dollar*? But unhelpfully, too much

of the education research to date ignores the cost side of the cost-benefit analysis. In other words, education research generally weighs only whether there is (or is likely to be) any positive effect for students. Chingos argues for a fuller analysis when he says the test that educational policy decisions "must pass is not 'Does this policy have any positive effect?' but rather 'Is this policy the most productive use of these educational dollars?'"[23]

This emphasis on cost is relatively new and especially important as leaders struggle with how to best apply limited dollars. Frustratingly, few studies that investigate the effectiveness of various reforms and interventions also consider their cost. Even fewer directly compare the cost and benefits of one investment alongside the costs and benefits of viable alternatives, making it difficult for leaders to accurately weigh their options. And only last year did the federal Institute of Education Sciences begin asking researchers to explore *cost* alongside their investigations of effectiveness.[24]

In hindsight, cost-benefit comparisons might have yielded choices different from the big bet the system made over decades to invest new funding in adding staff. That's because studies now suggest that large-scale class-size reduction efforts and other labor-adding efforts tend to compare poorly on a cost-benefit test. This is not because such efforts do not produce any benefits or results, but rather because the costs are so high relative to the potential upside of other investments.[25]

For Trade-Offs in Education, the Biggest Cost Is Labor

Taking stock of the cost implications of various strategies requires understanding the major cost components of schooling. Labor is by far the largest cost factor for schools, consuming some 80 percent of annual operating budgets. Trade-offs in labor costs generally involve changes in

1. the total number of staff;

2. the wages and time worked of the staff; and

3. the benefits of the staff.

An important cost trade-off is between pay and number of staff. It's fairly straightforward to consider a trade-off between the number of staff and their salaries. One study models a proposal to pay the best teachers more to teach more students, striking a trade-off between salary and number of staff.[26] The proposal suggests that targeted increases in class size for the most effective teachers would require fewer teachers overall. The savings from having fewer teachers (for whom the system would otherwise be paying both salary and benefits) could be repurposed as pay increases for the teachers taking on larger classes. Analyzing one Texas district, this study found that the savings associated with selectively growing

some classes by three students would generate a bonus of just over $8,000 per participating teacher. In other words, the proposal is not for teachers to do more with less; it's for teachers to do more and be paid more for their efforts.

Other researchers have done similar analyses. Chingos estimates that a school system could reduce class sizes by five or raise teacher pay by 34 percent.[27] As discussed in the prior section, evidence suggests that higher pay can help draw and retain a more talented labor pool to the field of teaching. Could we potentially afford to pay more for stronger teachers if we didn't have so many of them?

Hansen offers evidence that raising class size for the more effective teachers could yield improvements for students. He models the effects of moving up to six additional students into classes taught by the most effective teachers and finds positive effects for students (even when accounting for the negative effects of the larger class sizes).[28] Bryan Hassel of Public Impact has worked with districts to implement these kinds of practices in their work to expand the reach of the best teachers (and in doing so pay them more).[29] Of course, there are important practical (and political) challenges to implementing these kinds of reforms. We give these challenges some attention later in this paper.

How we structure teacher pay matters, too. In general, step and lane teacher salary schedules are structured around longevity (years of experience) and level of education or training. These schedules obligate investment in those two inputs: experience and education/training, with essentially no regard to workload, effectiveness, or fit for a hard-to-staff position. This pay structure not only affects who stays and who goes but also channels funds in ways that jeopardize equity across schools and teacher types and create havoc for district financial stability.[30]

High-poverty schools tend to have more early-career teachers and fewer late-career teachers, which means fewer salary dollars reach the schools with the highest needs. And once teacher longevity drifts up in a system, that system is locked into rising costs. In other words, under the typical salary schedule structure, longevity works as a built-in cost escalator.

Further, putting more money into a uniform pay scale structured around experience and degrees can stand in the way of aligning spending with critical system needs. Many systems face teacher shortages in specific schools or disciplines, whether in hard-to-staff high-poverty/high-needs schools or for disciplines like STEM or special education. In 2016–17, over half of California's 12,000 emergency certifications were issued in math, science, and special education.[31] Meanwhile, fewer than 2 percent of schools report difficulty filling vacancies in elementary classrooms.[32] Adding money to the current pay structure means much of that funding will be spent in ways that do nothing to alleviate the most pressing shortages.

Table 1. A fixed-percentage raise drives more dollars to senior teachers; a fixed-dollar raise evenly divides available funds among all teachers.

	*Fixed-**percentage** raise (5% of current salary)*	*Fixed-**dollar** raise ($3,000 per teacher)*
Junior teacher (current salary $40,000)	$2,000	$3,000
Senior teacher (current salary $80,000)	$4,000	$3,000

Meanwhile we know that targeting additional pay for teachers in such shortage areas can work to concentrate dollars and reduce shortages. A recent study of Georgia's long-running bonus pay system for math and science teachers finds that bonuses reduce teacher attrition in those areas by 18 to 28 percent.[33] Blanket pay raises for teachers, in contrast, invest a lot of money where there is already ample labor supply.

Similarly, the way we allocate raises tends to steer disproportionately more dollars toward the very group of teachers *least* likely to leave teaching—veteran teachers near the top of the pay scale.[34] Here's how it works: most districts automatically dole out new funds for salaries as an across-the-board percentage pay hike (say 5 percent). Added on top of an uneven salary base, this works to drive a higher proportion of dollars to these highest-paid veteran teachers. Current distribution patterns leave few dollars for pay raises in a teacher's earlier years, when turnover is most acute (see table 1). *For a district doing the standard percentage pay raise with the goal of reducing teacher turnover, for every dollar spent on a junior teacher, the system spends two dollars on a senior teacher, where the odds of preretirement attrition are minimal.* Alternatively, systems could allocate raises in fixed flat-dollar amounts instead of on a fixed percentage basis, ensuring that the new money works to raise all salaries equitably and, in turn, works to stem turnover. Notably, big end-of-career raises also drive up long-term pension obligations, as pensions are based on final average salaries.

We know from Hanushek's research that a top teacher can have lifelong effects on a student's outcomes.[35] In other words, some teachers have enormous value for students. And yet, in most places, a uniform pay scale isn't structured to reflect that value, and thus putting more funding into that traditional scale is an inefficient way of getting dollars to those most effective teachers. As noted in the prior section, evidence suggests that there are more targeted ways to steer salary dollars in order to raise pay, including by paying the best teachers more to take on more students or via a well-crafted merit pay strategy.

Bottom line: Leveraging salary as a blunt instrument means that even small changes can carry big costs. When the traditional salary structure is used as the basis of salary raises, the

money added may do little to achieve the desired goals. Leaders instead could think about employing more targeted salary increases designed to meet discrete goals.

Rising benefits costs are a key piece of the puzzle. Many have rightly noted that benefits are consuming a growing share of education spending. Chad Aldeman reports that in 1992, employee benefits consumed 15 percent of total spending; today, they gobble up 24 percent of the total pie.[36] Some of the growth stems from the pension debt burden incurred in prior years. But some of that growth is a result of increasing health insurance costs.

That's where pursuing the big-bet strategy of hiring more staff has made school systems more vulnerable to the soaring benefits bill. More employees means more health insurance premiums. When school districts pursued a reform strategy of adding staff over other investments, they became ever more vulnerable to increases in health insurance costs. In other words, systems are being hit by the multiplier effect.

Benefits represent a disproportionately large cost element for school districts because most staff are paid for a partial year but receive a full year of health benefits.[37] This is *not* to say that districts shouldn't pay the full year of benefits (they should!). That said, it's clear that the district isn't getting a full year's worth of labor in return for its investment in benefits, and that makes the current structure inefficient in comparison to other industries.

Leaders seeking reforms that would add labor hours might first determine if there is a way to add time for existing employees, given that the health benefits have already been paid, rather than adding time by adding employees. Going this route would be a way to add labor without adding the full costs of a new benefits tab.

Coproduction may help reduce reliance on labor. Whether education leaders have money to spend or are faced with cutting spending, they typically default to a relatively narrow band of options, which tends to boil down to hiring new staff or eliminating existing staff. But an emerging concept called coproduction may help foster new ways to think about trade-offs, so that inexorably adding staff is not the only plausible solution to meeting education's increased demands. Coproduction is essentially a mechanism where the beneficiaries participate in the delivery of the services they use, so as to reduce some of the demands on labor.

The concept has gained traction in other labor-intensive public services as a way to both improve the service and bend the cost curve. In a classic example of coproduction, some districts send text messages to parents about upcoming tests, missed coursework, or attendance. The hope is that a text will enlist parents in the work of supporting and monitoring their students' learning. One can envision a parent ensuring the child spends some time studying after receiving the text. In other words, the parent is doing some of

the work of motivating student behavior. And research suggests this works.[38] In one study, children whose parents were texted gained one month of additional math progress and had less absenteeism than students whose parents weren't texted. And the low-cost approach—under $10 per student a year—garnered more impact on student performance than much costlier, more intensive approaches like adding staff, researchers found.

In other words, strategically leveraging available resources other than paid labor may be a trade-off worth considering, thereby freeing existing resources for other uses. Think of cooperative preschools, where parents opt in to help staff classrooms. Or when schools pay parents to provide their own students with transportation. Or where the district establishes a college savings account for every kindergartner with the intention of motivating students and families to work hard. Editors of a research volume on coproduction suggest that it is because of these new processes that coproduction "can produce major improvements in outcomes and service quality."[39]

While labor is technically not a fixed cost, in education, it feels fixed. Labor rarely meets the textbook definition of a fixed cost—a cost that must remain on the books regardless of production volume. But, in education, labor *feels* fixed.

Labor is sticky for myriad reasons. The teaching profession is promoted as lifelong employment. Teachers who commit to teaching get a commitment back in the form of longevity raises and a defined benefit plan for retirement. And schooling is an intensely human enterprise that hinges on relationships, built school by school. Disrupting some of these relationships by letting staff go can feel like a real loss to families and communities, spurring protests, no-confidence votes, walkouts, or other dramatic reactions. (As one Los Angeles library aide facing a layoff said, "I know every kid's name. I know their parents, their siblings. You're part of the DNA of the school."[40]) During the last recession, it wasn't uncommon for teachers to offer to take pay cuts to keep their coworkers. While state and district leaders drive education policy, education "happens" on a hyperlocal level. Leaders fail to recognize this at their peril.

This can make trade-offs in labor challenging on a practical level. And it behooves leaders to think twice before hiring. When they do decide to add staff, it's best to hire strategically, because once made, labor investments are difficult to unwind. (Again, rather than defaulting to hiring new staff, leaders can consider using the funding in hand to pay current staff more to pick up some of the needed work.)

Line Up a Set of Cost-Equivalent Trade-Offs and Invite Perspective

When considering new investments, many leaders miss a critical step in that they don't lay out a range of cost-equivalent trade-offs. The premise at the outset of this piece was that the US system made a big bet on adding staff *instead* of spending that money to lengthen

learning time or raise salaries. But more accurately, there was no real deliberation among options. Choosing among different cost-equivalent options is important in that it can help leaders take into account context, see a full picture of value, engage stakeholders and communities in trade-offs, and ultimately make more informed decisions. But doing so means that the trade-offs are lined up side by side for comparison.

In Georgetown University's Certificate in Education Finance (CEF) program, we ask participants to consider trade-off calculations from the perspective of a typical school: would you prefer a new staff member or the equivalent dollars to use for other purposes?

Participants then compute what they could purchase with the $85,000 (a rough estimate of the salary and benefits of the average hire nationally). Here is some back-of-the-envelope math using a range of typical cost elements embedded in the exercise.

> At a cost of $85,000, a school could do any one of the following:
>
> 1. Hire one new certificated staff member; ***or***
> 2. Pay twelve teachers a stipend of $7,000 to teach a four-week summer reading program (delivered to 120 students in class sizes of ten); ***or***
> 3. Offer twelve top teachers a $7,000 bonus to take on three additional students during the year (thereby moving thirty-six students into higher-performing classrooms); ***or***
> 4. Pay for one thousand hours of tutoring from ten top teachers. Each teacher would tutor for one hundred hours and receive an additional $8,500.

Participants weigh the different options with the lens of which would do the most for students. Many participants are surprised at how the funding for a single staff member seems to go farther when the options don't necessitate spending more on health benefits. Only by lining up the different cost-equivalent options are they able to see what else is at stake in making one choice. Leaders at all levels can take a page from this exercise and rough out cost-equivalent trade-offs to illuminate a wider array of investment options going forward.

Local context matters when weighing options. The exercise above always spurs lively dialogue about what the best use of the funds would be for different schools (and that best use does differ based on local needs). What makes for a palatable, practical, or desirable trade-off in one school community may be dead on arrival in another. For instance, leaders may worry, what if students in our community won't agree to attend school in the summer? What if we don't have enough interested science teachers to add a summer course?

Importantly, trade-offs like these need not fly in *all* schools to be worth considering and implementing in the schools where they *do* work. We do not need to treat these approaches as an all-or-nothing proposition. We can acknowledge this reality by giving local communities the latitude to exercise trade-offs that make sense on the ground.

Assess the *Value* for Students of Different Options

In the above discussion of how best to use $85,000 in a school, CEF participants tend to go straight to predicting which investment would do more for *their* school, or for the schools in their region. Accurately assessing whether one thousand hours of tutoring will impact students more than a month-long summer reading program is immensely complicated. Even those armed with piles of research on tutoring and summer programs may have difficulty parsing the likely effects on students of myriad implementation details.

That said, leaders do need to make decisions on how best to invest limited dollars. And while they must consider both cost and feasibility in whatever strategy they choose, they also need to factor in anticipated effects. Unfortunately, research is far from definitive on predicting the effects of reforms on students.

Conveniently, researchers are increasingly quantifying effects for students in terms of "weeks of learning." In one study, Hansen finds that increasing class sizes of the most effective teachers "may produce gains equivalent to adding roughly two-and-a-half extra weeks of school."[41] Pham, Nguyen, and Springer find that the effect of merit-pay plans equated to adding three weeks of school.[42] Hanushek finds that students assigned to teachers in the top quartile got the equivalent of an additional year's worth of learning when compared to students taught by teachers at the bottom of the quality distribution.[43] (This may be a compelling potential benefit to argue for option 2 in our mapping of trade-offs in analyzing cost-benefit from the lens of the school.)

Some warn that this method of expressing impact in terms of weeks of schooling can oversimplify matters when it comes to quantifying a given strategy's impact on students.[44] Admittedly, the relative lack of clarity around quantifying and predicting the benefits for students poses a challenge for leaders looking to quantify the benefit side of the cost-benefit equation. So where does this leave leaders who must make decisions with decidedly imperfect information?

By all means, leaders should consult existing research on effects for students. Then they should view any potential strategy and related research in their own local context. (If an approach doesn't pass the smell test for a given community, it isn't likely to be a feasible trade-off no matter what the research says.) And even in the absence of clarity,

leaders should clearly articulate their expectations for students across a range of different investments. At a minimum, leaders should ask: What can we reasonably expect will be different for students from this investment versus others?

The Politics of Trade-Offs: There May Be More Willingness to Rethink the Balance of Schooling Inputs Than Most Leaders Suspect

Some might argue that it was stakeholders (namely parents and teachers) who pressured the education system to make the big bet on investing in more staff FTEs. But notably, when presented with cost-equivalent trade-offs, those same stakeholders have been known to choose differently.

Take class-size reduction. Sure, it's a notoriously popular strategy among teachers and parents alike. But that doesn't mean that teachers and parents won't at least consider alternatives. Goldhaber, DeArmond, and Deburgomaster surveyed teachers about their preferences for higher pay or smaller classes where the options represented cost-equivalent scenarios (a $5,000 bonus versus two fewer students in each class). Overwhelmingly, teachers indicated a preference for the cash (83 percent).[45]

Parents too understand trade-offs and value schooling inputs other than class size as the be-all, end-all ingredient in student learning. In a survey by Farkas and Duffett, when parents were asked if they would prefer their child be placed into a class of twenty-seven students "taught by one of the district's best performing teachers" or into a class of twenty-two students "taught by a randomly chosen teacher," fully 72 percent of parents opted for the larger class with a teacher proven to be effective.[46]

Part of the challenge has been that leaders do not routinely talk about cost-equivalent trade-offs with parents, teachers, the media, or even their own staffs. (And if they *do* talk about such trade-offs, the staff benefits costs involved are almost always ignored, which means the full cost isn't accurately represented.) So teachers and parents have not been asked to wrestle with cost-equivalent options.

In fact, most previously published work exploring preferences on teacher compensation and working conditions includes no hard numbers at all, leaving it up to the teacher to imagine what magnitude of raise he or she might get when deciding what would influence a decision, say, to stay in teaching—more salary or better working conditions.[47] But the numbers matter. Whether the raise is $1,000 or $5,000 or even $20,000 is essential to the decision. So is whether class sizes drop by two students, five students, or more. The numbers help make the choices real. And the numbers can impact stakeholders' willingness to consider a shift in the balance of schooling inputs, cracking open a door that leaders might have assumed was shut and locked.

That's why it is vital to talk with stakeholders in terms of cost-equivalent scenarios to see which strategy offers more value for the stakeholder at a given cost. Decades ago, had leaders, teachers, parents, and the public had a discussion of costs and benefits with clear cost-equivalent trade-offs, perhaps we might not have gone for the big-bet strategy of adding staff to improve schools.

Implications: What Can State and Local Leaders Do Going Forward?

Looking ahead, for school systems to think differently about investments, they will have to break out of traditional allocation models that too often tag investments to staffing and administrative structures, employee groups, or prescriptive delivery models. Doing so would instead require state and district leaders to give schools money in ways that allow exploration of alternative uses of funds. For state leaders, that will mean fewer one-size-fits-all prescriptions for how dollars are spent and more emphasis on seeking value for the dollar. For local leaders, it will mean weighing cost-equivalent trade-offs with staff and communities and exploring changes to the traditional school staffing structure. Toward this end:

State and district leaders can ensure schools have flexibility to make trade-offs among different investments. State leaders can work to *consolidate categoricals and eliminate state mandates for staffing, class-size limits, or programmatic prescriptions* that require schools to hire specific numbers or types of staff. Instead of tying state dollars to staffing prescriptions, states can follow California's model and allocate funding based on the number and type of students in each district. In 2013, California revamped its school funding formula to remove dozens of funding prescriptions, relying instead on a simple formula that allocates dollars based on student types and decentralizes spending decisions to local levels.

For many state legislators, this shift may seem counterintuitive. State officials who helped create the numerous staffing rules and constraints rightly point out that each was imposed for a purpose. Many state programs were intended to reverse patterns of neglect of particular groups of children or to make sure districts implemented what the research deemed "effective" in improving outcomes. Without the prescriptions, some legislators worry that an increase in education spending can be negotiated away via local collective bargaining without any improvements in schools. Tying the money to new programs and requirements seemed safe in that it offered some guarantee that the funding increases would be used in ways that were impactful for students.

But the point here is that rather than selecting one big bet for the entire state (or for a large district) and controlling the schooling inputs, leaders should be freeing the system so schools can do the work of exploring different smart-bet delivery models. In states where funding is based on a staffing formula (like Delaware, Idaho, and North Carolina), doing so

may require an overhaul of the state funding mechanism. In most other states, where the basic funding formula is already centered on students, the work may involve consolidating programmatic categoricals into dollar allocations for different student types (including special education), removing class-size prescriptions or prototypical school staffing structures, and eliminating school calendar requirements.

For larger districts, the same suggestions apply. District leaders might shift away from a one-size-fits-all staffing formula and instead *decentralize decision making to schools by allocating dollars to schools* based on the number and type of students they have. Districts in Boston, Denver, Nashville, New York City, San Francisco, and many others have already shifted to this decentralized financial model, where schools make decisions about the number of staff they have and could conceivably use some of their funding to award stipends as described earlier.

Leaders at all levels can promote consideration of cost-equivalent trade-offs with the public and stakeholders. As noted in the prior section, opening up discussions of cost-equivalent trade-offs may help break well-worn logjams around reallocation of schooling inputs, from class-size limits to traditional staffing prescriptions. Doing so can open the door to consideration of alternative investments on behalf of students beyond the traditional bet on more staffing.

Too often leaders engage in potential investments without considering meaningful alternatives for the same dollar. For instance, in 2014, a class-size reduction effort surfaced as a ballot measure in Washington State, and while much was made of the high price tag, no alternative spending options were considered or debated. At the very time the public was considering a big bet on more staffing, leaders might have translated the dollars into equivalent spending on salary increases, additional days of schooling, public preschool, subsidized college, or any number of alternatives.

At the local level, too, as leaders work through labor negotiations or deliberate on district budgets, they might publicly articulate a range of cost-equivalent options to help stakeholders think more broadly about what options exist with the limited resources at hand.

District and school leaders can leverage attrition in schools as a safer moment to explore alternative bets. This paper described earlier how labor in schools can feel like a "fixed" cost, making any changes to labor counts extremely disruptive and unpopular. But that same labor is "unfixed" each time a staff member leaves of her own accord (such as for retirement or other life changes). Such moments offer leaders the chance to hit pause before reflexively refilling the position, and to consider how else the money paying for that FTE might be invested on behalf of students. A departing vice principal could release dollars, where a portion could be used to create stipends for some teachers to take on leadership roles rather than maintaining another administrative post. Rather than refill a second-grade

teacher position, a school might move its reading coach into the classroom, freeing up dollars for a summer reading program or tutoring or something else entirely. Eliminating a position during attrition can be much more politically feasible than telling a beloved member of the school community that she's lost her job.

Allowing schools the flexibility to rearrange staff means the district doesn't claw back the funds if a position goes unfilled. And it means accepting differing staffing plans by school. School staff can see both the upside (more money for other investments) and the trade-off (e.g., the school forgoes a vice principal), and weigh the choices in the context of their own setting. The upside is these school-level choices are likely to trigger less blowback than an across-the-board staff reduction that yields pink slips.

State leaders can create incentives for productivity-enhancing changes that can be designed locally. While states often award grant funds to schools and districts to try new things, too few of these initiatives emphasize improving productivity. But if the goal is to encourage local leaders to explore better ways to leverage limited resources to do more for students, keeping an eye on the value for the *dollar* is critical to the design phase. Innovation and productivity needn't be at odds.

Ohio's Straight A Fund provides an example of a state innovation grant program that encouraged school and district leaders to apply for funds to support locally designed changes but asked also for a plan to eliminate reliance on the grant funding. Grantees were instructed to think deliberately about how their proposed effort would improve outcomes and be financially sustainable over the long haul, when grant funding ended.

Some areas especially ripe for incentives are those that don't require new labor. These might include the following:

- Paying more successful staff to take on a heavier workload (potentially teaching more students).

- Leveraging existing staff for a longer year. As described earlier, schools could conduct summer learning programs for students needing more time. Or schools might offer some high school courses in the summer. Students with greater needs might receive some services in the summer months.

- Coproduction models that engage willing parents in new ways or boost student motivation.

States funding such productivity-seeking efforts should ensure a disciplined focus on success as measured by value for the dollar. Value can be quantified in terms of student outcomes adjusted for the mix of students. Where schools are able to beat the odds for the

students they serve and ultimately (when the grant ends) do so at average public cost, the model would be deemed a success.

State leaders can require finance training on trade-offs and cost drivers. Recent research indicates that most principals do not know what their school is spending or what to expect in return for the investments.[48] District and school leaders likely have not been exposed to the array of potential strategic financial trade-offs beyond the default big bet on adding staffing. Often financial decisions are relegated to back-office meetings that are largely detached from the district's overall strategy.

Most states have simply not yet done a good job of ensuring that their system's leaders are equipped for financial leadership. Thus it's no surprise that there is little exploration in schools of alternative investments that might yield more for the dollar. That dearth of skill is hamstringing leaders who are better equipped to understand cost and value.

Ensuring leaders at all levels understand key cost drivers in schooling is a low-cost strategy with lots of potential. Training more leaders on the financial elements of schooling can help grow the system's capacity to make smart, tactical decisions that wring the most from scarce dollars so that they can do the most for students.

Boosting training can happen via these options:

- Upgrading the state's certification requirements for administrators and principals to require financial training. Most states have requirements in place for administrator and principal certification, but that training tends to focus on instructional or programmatic leadership. Certification programs can start by helping local leaders weigh the different trade-offs in the exercise described earlier.

- Creating a state requirement that *school boards* receive financial training. School board members, too, tend to assume their posts with (at most) training on the timing of budgets and audits, compliance with federal grants, and avoidance of financial conflicts of interest—but essentially nothing about how to do the most with public dollars on behalf of students and measure progress toward that goal.

- District leaders training their own staff via in-house professional development or programs like Georgetown's Certificate in Education Finance.

District leaders can be strategic about salary investments to help solve specific labor challenges rather than make across-the-board labor investments, which may be less efficient. Blanket percentage pay raises for teachers concentrate funding on those least likely to leave and invest a lot of money where there is already ample labor supply. These are some alternatives to consider:

- Targeting additional pay for teachers in shortage areas, such as STEM or special education, or in hard-to-staff high-poverty schools. These mechanisms could help direct scarce education dollars where they are most needed. Where bonuses or stipends aren't politically feasible, leaders can use the existing teacher salary schedule as a vehicle to deliver targeted dollars by, say, adding an automatic five years' experience to any STEM teacher as a vehicle to bump her pay.

- Using a fixed-*dollar* raise instead of a fixed-percentage raise. Doing so works to more evenly distribute dollars to junior and senior teachers.

- Connecting some portion of pay to additional workload, especially for more successful teachers. Top-tier teachers who are willing could accept some one to five extra students and in return receive meaningful workload stipends.

- Considering well-designed merit-pay plans where politically feasible.

States can help districts in these efforts by building the *data systems needed to identify top-tier teachers*.

Even without setting salaries at the state level, there can be a role for states when it comes to pay. According to a recent NCTQ analysis, over half of all states (thirty-five) take steps to *incentivize teaching in high-need schools or subjects* by explicitly supporting additional compensation or incentives for such teachers.[49]

State and district leaders exploring options to boost pay should ensure their moves are having the intended effect. For example, one popular move is adjusting funding formulas for differences in regional cost of living, funneling proportionally more dollars to more expensive (typically urban) areas to help them offer competitive pay to attract and retain talent. But if it's the lower-cost rural areas in a state that are having the most trouble getting and keeping talent, such a blunt instrument may not best serve the state's most pressing labor needs.

State and district leaders can use newly available school-by-school spending data to measure school-by-school return on investment (ROI) and learn from leading schools. Thanks to a new ESSA provision, states now are required to publish total per-pupil spending by school. This trove of data for the first time will let us see school outcomes alongside school spending. Leaders will be able to see which schools across their district, their state, or even the nation are able to leverage their dollars to do the most for students. School leaders can find highly productive peer schools that look like theirs both financially and demographically and tap those peers for successful investment strategies that may work in their own building.

But states will need to go beyond the requirement in order to *create useful ROI data tools and celebrate superstars*. Georgia offers an example of how states can harness financial data in tandem with student academic data to improve schools. The state measures how well a school leverages its resources to do more for students with its Financial Efficiency Star Rating program.[50] Based on a school's per-pupil spending arrayed with its overall academic performance, the annual ratings attract regular media attention, which may spark productive local conversations around best use of resources.

Decisions about Education Spending Always Involve Choices

We didn't wind up with that big bet as a result of some exhaustive national strategic analysis or intentional national debate that pointed to upstaffing as the best route to help students. (As far as we know, there was no Wizard of Oz behind the curtain pulling the strings, either.) In the absence of careful deliberation of a range of choices, it seems the big bet on staffing happened in part through cumulative drift.

But that too was a choice, and going forward, leaders do not have to leave the system adrift. Nor should leaders go in search of the next single big bet on labor investment: any one-size-fits-all strategy is unlikely to work, given the range of local needs on the ground. Instead, leaders can consider a range of strategic bets that carefully weigh value *and* costs. After factoring in all the relevant data, they can intentionally weigh multiple bets, customized to local needs, to deliberately land on *a set of better bets for the dollar* that do more for students.

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