

YOU START BY SUBTRACTING

ASCD

At the end of the 2021–22 school year, educators found themselves in a bind. In fundamental ways, schools were not working. Attendance was down. Conflicts, fights, and behavioral issues were on the rise. Despite additional attention, a surge of funding, and the browbeating of education pundits, academic learning still proceeded more slowly than in the typical, pre-pandemic scope and pace.

Students were feeling the effects of years of schooling defined by the COVID-19 pandemic: the challenges of rebuilding friendships and social norms, the interruptions from occasional quarantine and closure, the general malaise that so many of us feel from some bleak combination of masking, isolation, illness, and death against a backdrop of mass shootings, inflation, and extreme climate events. It's a lot for kids—it's a lot for all of us.

And yet, the response largely has been for school leaders to add and accelerate. Create new programs. Run longer school days. Run longer school years. Add summer school. Add tutoring, add more remediation, do more something, *anything*, to try to address these gaps in learning. The vaguest of these formulations sounds insulting to educators. Pundits call for "accelerating learning" as if teachers have been doing "unnecessarily slow" learning all these years, saving a box full of accelerated learning techniques behind a glass that says, "Break in case of emergency."

But here's the rub: When the system isn't working, and the people in the system are exhausted and overwhelmed, you can't fix those problems by adding more things to the system and making it more complicated.

Innovation, new ideas, pilot programs, prototypes—these efforts can be quite energizing when the system isn't overworked and overloaded. Schools are always busy places, but they usually operate with room to take up new initiatives. Not now.

What if we started not with addition, but with subtraction? Make school simpler. Give teachers and students room to breathe. Clear out the marginal and focus on the most important things. When people feel a little lighter, then figure out what your schools are missing and what to strategically add to make them stronger.

I've spent the last spring and summer talking to teachers, school leaders, students, and design experts about *subtraction in action*: What it really looks like when

schools step back, find ways of doing less, and discover more time to do a better job with the essential work of schools. It has been an illuminating project.

UNDERSTANDING DESIGN THROUGH SUBTRACTION

If the system has to be fixed, and we can't fix the system by adding to it, then the logical place to start is with *subtraction*. We need to look closely at our schools and figure out everything that we don't need to be doing anymore. We need to find as many things as possible that we can take off the plates of overworked educators. At its heart, the art of subtraction is clearing away peripheral parts of a system so that we can put better focus on the most important things.

There is good science on the challenges of improving systems through subtraction. Leidy Klotz is a professor of engineering at the University of Virginia and the author of *Subtract: The Untapped Science of Less* (2021). One afternoon, while building a bridge out of LEGO with his young son, Klotz did some balancing by adding blocks to one side. His son noticed that it would have been easier to balance the bridge by *removing* pieces instead. Klotz wondered why he didn't think of that subtracting move. Over the next several years, he published a number of studies, culminating in a recent article in *Nature* titled, "People Systematically Overlook Subtractive Changes" (Adams e 2021). Over a series of eight experiments, Klotz and colleagues demonstrated that his son's moment of LEGO insight was unusual: Most people trying to make something better will look for things to add before they look for elements to subtract.

These individual psychological factors reinforce social dynamics that are common to political systems. Schools are complex systems that balance the competing needs of various actors and stakeholders. Many parts of the system are the result of strong advocacy from a small group—to add a rule, or requirement, or program, or system. The costs of new programs tend to be diffuse and the benefits concentrated, so more and more stuff piles up on schools. Trying to remove something from this accreted sediment can be fraught, because most of the elements in schools have some strong stakeholder who gets upset and defensive when their rule/program/standard/policy gets taken away. And the benefits of removing any one of these elements can be modest for most people in the school.

The cost of having overly complex systems weighs heavily on all of us, but each individual element imposes only modest costs of time, energy, and attention to lots of people in the system, while offering benefits to small, determined groups of stakeholders. Colloquially, you piss a few people off when you try to cut something, so they try to stop it, while the benefits of any specific effort to simplify the system are limited. Combine these kinds of social dynamics with the individual

disinclination to solve through subtraction, and it's not hard to understand how schools become a hodge-podge of priorities and initiatives.

Given the challenges of subtraction, it is perhaps not surprising that research to find compelling examples of subtraction has been challenging. For months, my research team at the Teaching Systems Lab at MIT talked to as many school people as we could looking for good examples and cases to investigate, and few people had suggestions for us. When we did interview educators, they were often somewhat apologetic, saying, "I'm not sure I have anything," "I'm not sure this really counts," or "This is just a small thing, but"

Subtraction is hard. It can be small. Most subtractions don't immediately lead to bright rays of sunshine and hope pouring in through classroom windows. But each little subtraction can make people feel a little lighter, breathe a little easier. When we finally did get the stories out from educators for our TeachLab Podcast, here's what we heard.

SUBTRACTING COMMUNICATIONS

Consider every email you might send to your staff and colleagues. How might you *not* send it? We spoke with Nicole Allard, a district leader in Vista, California, who talked about a small change she made to simplify communications for her staff, which also helped her use time more efficiently. Following the mantra "days are for people and evenings are for paperwork," Allard would go home at the end of the day and write messages to her staff with key fires to be extinguished next day. Then, right before bed, she would close her laptop and NOT send them. As she explained:

And I got almost to the closing line, and I thought, "Number one, if I send this, they're all going to reply to me tonight when they should be with their families or doing some something fun. And number two, I would get better information if I just called them all on my way to work."

Then she'd wake up. Her thoughts were organized in her draft email folder, ready to be acted on during the day. Some of them, she realized, she could just not send. The information was processed in her mind, and the action items could be skipped for now. For others, she made calls on the way to work, with 30 seconds to address her issue and a few minutes to hear about whatever was on her colleagues' minds. She had a few extra minutes of personal connection with staff. She saved them the time of having to compose a response. The problem got solved efficiently, with a little relationship building to boot.

SUBTRACTING RULES

When we asked Nat Vaughn, principal at the Blake Middle School in Medfield, Massachusetts, to talk about subtraction, his mind first went to a couple of rules. Like many middle schools, Blake historically has banned hats and hoodies. But when students were home during the pandemic, they wore whatever made them comfortable, including hats and hoodies. So they came back to school wearing them. And Blake decided to let them.

Each interaction with a kid wearing a hat or a hoodie takes a few minutes from a teacher's day. It's one more thing to police; it's one more thing for kids to submit to; it's one more point for conflict. Take the rule away, and you save teachers a few minutes of policing, you save kids a few minutes of stewing in anger, you save an assistant principal a few minutes dealing with the resulting transgressions. Nothing groundbreaking, but not hard either; just looking through the rules and asking which are about control and which are about learning, and letting go of the former while keeping the latter.

SUBTRACTING BUREAUCRACY

Another target for subtraction in districts is organizational complexity. Beth Rabbitt, the executive director of the education nonprofit The Learning Accelerator, shared stories from two districts she worked with in the past year—Austin, Texas, and Liberty, Missouri. In Austin, they had different teams for English language learners, for social-emotional learning, for the content areas, for MTSS support, and for other supports for learners. Rabbitt observed, "All of those teams were actually creating the opposite of coherence and were keeping people from taking a real integrated look at not only the curriculum and the resources they were creating, but also how they were supporting students and teachers." Those distinctions might have made sense in a time when each of those areas needed particular supports, but district leaders realized they needed simpler structures for the pandemic.

In Liberty, instructional coaches had operated at the district level and worked across schools, but during the pandemic, those staff got assigned to work with specific schools and build closer relationships with the teachers there. All the time that had been spent coordinating across sites could be spent tackling more issues out in schools. In both cases, simplifying the structures of how support staff work together made them more able to provide meaningful support to teachers and students.

SUBTRACTING CURRICULUM

The biggest lifts—but also some of the biggest opportunities—for subtraction in action are in the curriculum. In the United States, we teach too many topics too shallowly. Our curriculum emerges from all the forces of accretion described

earlier—someone is always making a case for new things to be added to curriculum; it's easier to add a new topic or standard than subtract; cutting standards runs into small, passionate groups who are fierce advocates of that standard. But a growing body of research suggests that the best national curricula are often the most parsimonious, and the best schools in the United States focus on teaching fewer subjects more deeply (Mehta & Fine, 2019).

Teachers have cut curriculum in all kinds of ways over the last two and a half years. When the system is swamped, you can't teach everything. But all too often, the cuts were made idiosyncratically by individual teachers in individual classrooms out of necessity or desperation. They don't feel lighter; they feel bad. They can feel like giving up.

A better approach is when groups get together to simplify curriculum together. A few states did a little bit of this during the early days of the pandemic by officially defining a set of "power standards" that schools could focus on (Reich et al., 2020). But since the spring of 2020, states have made little effort to help schools in the work of prioritizing and focusing, so the best efforts have been at the district or school level. (Prior to the pandemic, British Columbia stands out in North America as a place with a devoted effort to thinning standards at the province level to make more space for deeper work in their schools. For example, see "[Curriculum Redesign.](#)")

Prioritizing standards means asking about what's most important and how curricular themes connect from year to year. In elementary schools, adjacent grade level teams meet to discuss prioritization across years. In secondary schools, these meetings can mostly happen within departments. People propose candidates for prioritization, propose standards to be deemphasized and let go, and then teams navigate a path to something smaller.

Interestingly, during our research with teachers, we heard from several interviewees that these kinds of meetings happened with more frequency and urgency during the pandemic, and they were actually welcomed. This was surprising, in part, because teachers during this period were also advocating for most forms of professional development to be subtracted in favor of additional teacher planning, grading, and work time. (Sit-and-get PD workshops are indeed another potential subtraction target). But teachers valued the chance to talk with colleagues across grade levels, to identify priorities, and to leave with concrete plans for simplifying curriculum. When every day of class has uncertainties about illness, attendance, quarantine, and school closures, a narrower curriculum means more opportunities to go deeper on fewer things, with reduced fears that students who miss a few days will lose out on an entire section of class.

GETTING STARTED WITH SUBTRACTION

Let's not sugarcoat every aspect of subtraction. It can hurt. When you start cutting curriculum, you are going to deemphasize a standard that correlates exactly with someone's very favorite lesson ever, a lesson that they have honed and polished over many years. Someone on your staff really does earnestly believe that a school without hats is a more dignified place. School change is inevitably woven with loss. People need time and space to say goodbye. As the tidying expert Marie Kondo teaches us, when you clean out your closet, you need to offer a moment of thanks to each piece of clothing that you give away (Mehta & Peebles, 2020). But when we are exhausted, when we are ground-down, and when things aren't working, we need to bid farewell to some of the pieces on the margins to better see the important pieces in the core.

Gardens are a good metaphor for subtraction. You usually can't just plow over the whole thing mid-harvest and start over. Pull one weed, and things look about the same. But keep weeding long enough, and things start to look a little lighter. Sometimes you dig up some plants that might be viable, but you need to make space for more important things to keep growing. You toss them in the compost, and all the things you said goodbye to become the nutrients for the things that you want to grow deep and strong. Weed enough and clear enough and you can plant a new row; something different that gives the garden a new color or new flavor and makes the whole thing work a little better than before.

Subtraction in action isn't a forever focus. The hodge-podge of activities in schools is part of what makes them so beautiful—the math kids have a morning club, the band plays in assembly, the grizzled veteran gets to teach her special unit on forensics, the kids run outside on the first real spring day. But when people are tired, and schools aren't working, you can't race, and run, and hustle, and add your way out of the problem. You need a little more simplicity. A little more space. You need things to be a little lighter. Start by subtracting.

REFLECT & DISCUSS

- In what ways is subtracting harder than adding new programs and initiatives?
- Start small—what's one program or process you could eliminate from your school or classroom that isn't an effective use of time?
- How do you think simplifying programs or curriculum in your school would affect staff morale and efficacy?