



Thinking Forward

New Ideas for a New Era of Public Education

A collection of essays celebrating CRPE's 25th anniversary

Robin J. Lake, Editor

November 2018

CRPE
REINVENTING
PUBLIC EDUCATION

Acknowledgments

Many CRPE colleagues and reviewers helped push our thinking on these essays; the collection is much improved as a result. Special thanks to Stacey Childress, Tony Lewis, and Bruno Manno for their reviews of this collection. Many others provided insights and commentary on individual essays: Thomas Arnett of Christensen Institute; Shael Polakow-Suransky of Bank Street College; Josh Schachter of CommunityShare; Sunanna Chand of Remake Learning; and Amy Anderson, Lauren Fine, Selam Gebre, and Rebecca Kisner of ReSchool Colorado.

At CRPE, Paul Hill and Travis Pillow served as indispensable thought partners to all authors. Our deep gratitude goes to Mark Toner for his extensive writing and editorial assistance. Alice Opalka managed the project beautifully, and Deb Britt's and Mary Jane Anderson's eagle eyes were essential, as always.

Finally, we are grateful to Carnegie Corporation of New York and the Walton Family Foundation for their support of this work. We note, however, that the views expressed in these essays are the authors' alone and do not necessarily represent the opinions of the funders.

About the Center on Reinventing Public Education

CRPE is a nonpartisan research and policy analysis center at the University of Washington Bothell. We develop, test, and support bold, evidence-based, systemwide solutions to address the most urgent problems in K-12 public education across the country. Our mission is to reinvent the education delivery model, in partnership with education leaders, to prepare all American students to solve tomorrow's challenges. Since 1993 CRPE's research, analysis, and insights have informed public debates and innovative policies that enable schools to thrive. Our work is supported by multiple foundations, contracts, and the U.S Department of Education.

TABLE OF CONTENTS

Foreword..... 1

Executive Summary 3

**Learning in the Age of Agility:
How U.S. Education Can Prepare Students to Solve the Problems of the Future** 8

To Serve Every Student Well, Design for the Tails, Not the Mean..... 21
Robin Lake and Travis Pillow

Rethinking the Traditional High School-College-Career Continuum 28
Robin Lake, Georgia Heyward, and Tom Coyne

**Beyond the Bell:
Leveraging Community Assets for an Expanded Learning System** 37
Betheny Gross

The Uncertain Future of Teaching..... 49
Michael DeArmond, Christine Campbell, and Paul Hill

Educational Equality in the Future: Risks and Opportunity..... 54
Ashley Jochim

Local Governance for an Innovating System 65
Paul Hill

Funding a Nimble System 77
Travis Pillow and Paul Hill

Moving from a Portfolio of Schools to a Portfolio of Student Opportunities..... 89

Foreword

Since our founding, the Center on Reinventing Public Education (CRPE) has become one of the nation's leading sources for transformative, evidence-based ideas. We work in the creative center—and across partisan lines—to achieve strong, equitable schools at scale, widespread family choice, and effective government accountability.

For 25 years we have refined and expanded on these principles and studied the educators and system leaders who translate them into practice. This work has shown us that to create an education system capable of preparing every child for the future, we must solve current problems in new ways. There is much to celebrate from the past, but much work lies ahead.

We see how school systems nominally committed to social justice nonetheless tolerate inequitable distributions of money, teacher talent, and school quality. We see how an education system focused on the average student too often shortchanges exceptional students with unique needs, and how a system designed to meet the needs of the most complex learners will ultimately work better for everyone. We see how the current dividing lines between high school, career preparation, and college can limit students' opportunities, and how creating new pathways will help them prepare for a rapidly changing economy. We see the out-of-school factors that drive educational inequity and seek innovative ways to address them.

While we do not claim to have all the answers to these challenges, these essays clearly point to an education system that is more agile, customized, and focused on meeting the needs of each student. The challenge of how to achieve that vision is not one we take lightly. In my view, none of this can happen without empowering families—especially those without the advantages of time, money, and political power—with strategies to organize learning in new ways, and to opt out of set packages of schooling so that every student can develop their unique talents. Nor will it happen without empowering educators to deliver learning in new ways. The status quo, both in district and charter systems, has proven too strong to shift on its own.

But our core belief at CRPE has always been, and continues to be, that flexibility, personalization, and choice are not magic. They create both opportunities and risks. These essays consider both and suggest

ways to optimize new opportunities for students to access career pathways, social and mental health supports, and other tools they need for the future—and ensure that students most in need of new opportunities for upward mobility are not shortchanged.

Confronting the challenges of the future requires us to reconsider many of our founding assumptions at CRPE. In these essays, we are asking ourselves, and you: Can existing systems and schools—both district and charter—change deeply and continuously enough to transform all children’s opportunities? Can existing accountability and funding policies enable the kinds of changes needed? Can self-contained schools effectively educate all children for a challenging future? These are hard questions with no simple answers. But we understand that if we do not evolve, we risk becoming a complacent institution ourselves, rather than an agent for urgency, excellence, choice, and equity for every child. The ideas offered in this collection represent an early stage in this evolution—a process we are committed to continue over the next 25 years as we gather new evidence and insights and continue thinking forward.

Robin J. Lake,
Director, Center on Reinventing Public Education
November 2018

Ushering in the “Age of Agility”¹

As the Center on Reinventing Public Education (CRPE) celebrates its 25th anniversary, the education system it has focused on for the past quarter century—and the nation whose students it serves—face unprecedented change and uncertainty.

The most dire predictions are that artificial intelligence and automation will unleash massive disruption—with as many as 400 million to 800 million individuals displaced from their jobs worldwide in the coming decades and new jobs requiring unprecedented combinations of skills.²

A more sober assessment is that new jobs will be created, but will favor skills—like adaptability and creativity—that only the human mind possesses. Change will be the new normal. Employment opportunities will shift quickly, requiring adaptability and constant retooling. Automation will affect everyone, but middle-class jobs will be harder to find, making it harder to overcome the disadvantages of poverty.³ Finally, the need will be greater than ever for talented innovators, entrepreneurs, and civic leaders.

What’s clear is that whether the Fourth Industrial revolution creates chaos or opportunity depends on the response from policymakers, businesses, labor organizations, and—importantly—education. New jobs can be created through innovation and ingenuity. Workers can adjust to shifts in employment opportunities. A new generation of reformers can revitalize America’s governing institutions to manage these shifts and meet other emerging challenges—caring for an aging population, adapting to the effects of global climate change, negotiating the technical and ethical questions posed by new technologies. Students of today are eager to be the problem-solvers of the future. Yet despite reform initiatives and spending increases over the past several decades, our nation’s education system still focuses on preparing students for an older, simpler, more predictable world.

Persistent achievement gaps and high rates of student failure in higher education show how far our education system falls short of meeting even yesterday’s challenges. Our education system is even less prepared for a more demanding and unpredictable tomorrow. It is no longer enough for students to stay in school and expect to enter a well-defined career. Graduates will need to understand the local economy well enough to both judge their own strengths and weaknesses and seek needed skills and experiences. For that to be possible, students will need common skills and understandings—literacy, numeracy, and basic knowledge of science, history, and civics. But the future education system will also need to equip all children for an uncertain future by broadening their opportunities for learning and growth, helping individuals gain applied knowledge in areas where they have particular abilities and interests, and allowing them to create customized educational pathways.

To explore what this kind of agile system might look like—and what it would take to make it a reality—CRPE analysts have written a collection of essays, many of which revisit topics we have examined extensively during our 25-year history, to envision what schools and systems capable of ensuring that every student can realize their untapped talent would look like.

- In **To Serve Every Student Well, Design for the Tails, Not the Mean**, Robin Lake and Travis Pillow begin with the academic and career gaps faced by students who are the most complex learners and explore how a system capable of meeting the needs of all nontraditional students—high-achieving, low-income students, English language learners, homeless students, children in foster care, and “twice exceptional learners” who have extraordinary gifts in some areas and require support in others—could improve teaching and learning for *all* students, not just the so-called “square pegs.”

“It’s hard to forecast all the demands the age of agility will place on the next generation, but it’s a safe bet creative problem-solving, bilingual communication skills, and unconventional thinking will all be in high demand; we cannot afford to throw away these talents,” write Lake and Pillow. “Further, solving for the needs of these complex learners may help the public education system get it right for everyone.”

- **Rethinking the Traditional High School-College-Career Continuum** challenges our present-day two-tiered system, which despite efforts to create pathways to college and careers still sorts students along predictable racial and class lines, shutting many out of opportunities for economic and social mobility. Looking to more flexible models pioneered in Switzerland, Cleveland, San Antonio, and elsewhere, authors Robin Lake, Georgia Heyward, and Tom Coyne argue that systemic change, not improvements to existing career and technical education programs, is required.

“If we become enamored with add-on programs that fail to address the underlying weaknesses and inequalities in K-12 education,” write Lake, Heyward, and Coyne, “students will not have better opportunities than they already have.”

- In **Beyond the Bell: Leveraging Community Assets for an Expanded Learning System**, Betheny Gross argues that while the current emphasis on wraparound services has helped meet some of the many needs today’s students face, a more organic, crowdsourced approach to engaging the community could ultimately result in more agile and responsive opportunities for students—but only if key questions about measuring impact, creating coherent learning experiences, and ensuring equal access to educational opportunities are addressed.

“If these out-of-school learning opportunities become more essential than extra, but remain opt-in experiences (as is likely necessary to allow for personalization),” writes Gross, “the field will need to wrestle with these questions: Can there be accountability for equal access in an opt-in system? If so, who should be held accountable and how?”

- **The Uncertain Future of Teaching** emphasizes an increasingly acknowledged assumption: that for students to be successful, educators need to do more than prepare them academically. But Michael DeArmond argues that nurturing the “soft skills” that can prepare youth for lifelong learning places daunting demands on teacher development and will require new models that expand who works with students and differentiate teaching roles to a far greater degree.

“Even if we just focus on learning how to support self-directed learning and personalization,” writes DeArmond, “the new demands on teachers are daunting. Few people would have enough capacity to do it all. And so, to make the job more feasible, the teaching profession must find new ways of working as well.”

- In **Educational Equality in the Future: Risks and Opportunity**, Ashley Jochim examines the implications of a more customized, agile system for the students who have historically lacked full access to learning opportunities. Auditing access to the growing number of out-of-school learning experiences, providing financial support for nonschool educational services, investing in guidance and support to help families navigate a growing number of options, tracking access and success in postsecondary pathways, developing approaches to student success, and addressing preparation gaps all may be necessary to ensure that the most disadvantaged students have equal access to the full range of educational opportunities enjoyed by their more advantaged peers, Jochim argues.

“If people who care about public education do not open themselves up to new ways to address inequality, not only will they give up the chance to break through the political deadlock that has characterized school reform fights, but they also are unlikely to make headway in equalizing opportunity for American students,” writes Jochim.

- In **Local Governance for an Innovating System**, Paul Hill asks what forms of community oversight are feasible for a nimble system that features collaboration among K-12, higher education, and business? What minimum measurements of student progress, program outcomes, and equity are necessary? Is it possible to prevent measurement from becoming de facto regulation? Will information and alert advocacy be enough to protect students, or will “hard” forms of accountability (e.g., closure or delicensing of schools and instruction providers) still be necessary? Hill develops the idea of integrated “light governance” of local schools, colleges, learning pathways, and special courses, based primarily on providing information, but with some power to remedy abuses.

“A nimble system must be open to experimentation and tolerate some failure, but it ultimately can’t leave results, on which the welfare of children and communities depend, to chance,” writes Hill.

- In **Funding a Nimble System**, Travis Pillow and Paul Hill explore what it would take to ensure that personalized and weighted “backpack funding” follows students across multiple learning experiences, and could meet the needs of all students. Information through online portals and navigators who help families select the best options for their children are critical, the authors argue, as are addressing oversight and helping manage the transition from traditional funding models, a particularly daunting obstacle to making new approaches a reality.

“Low-income students or students with special needs who receive larger funding allotments under the weighted student funding system would be more likely to have money left over after covering the cost of school enrollment. . . . Parents would have a more versatile mechanism to respond to needs that arise during the course of their children’s education,” write Pillow and Hill.

The Road Ahead

For much of the past quarter-century, CRPE has focused on the portfolio strategy, which it originated as a solution to many of the challenges facing public education. The key pillars of that strategy—a diverse set of learning opportunities for students, choice and agency for parents, autonomy for educators, a commitment to equity, accountability, and continuous improvement, and attention to systemic functions like information and transportation—remain more important than ever. But the lens must shift from schools to students. Policymakers and educators must now focus on developing and sustaining a portfolio of broader student experiences, to create an agile education system designed to innovate, bend, and stretch to meet the needs of every student, including the most complex learners.

Rather than prescribe a specific outline for the public education system of the future, these essays collectively focus on key strategic elements, including out-of-school learning opportunities, the teacher pipeline, governance, and funding models.

The concluding essay in this collection offers meaningful yet manageable steps that communities can take now to move in this direction, including:

- **Examining data** to identify which students aren’t getting what they need.
- **Inventorying community-based learning opportunities and resources**, as well as the extent to which they are accessible to all students and families.

- **Identifying gaps**, including needed learning opportunities and supports, as well as early identification and intervention strategies.
- **Examining the infrastructure** required for families and students to make informed decisions about learning pathways and access them.
- **Considering funding streams and models** that better support each student’s individual needs, including noneducation funding that could help support their learning objectives.
- **Seeking and investing in innovative proposals**, particularly those that address complex learning needs with new school designs and teacher training.
- **Breaking through boundaries** with cross-sector initiatives such as industry apprenticeships, new pathways, microschoools and credentials, and individualized supports.
- **Identifying meaningful metrics**, including less extensive “gateway” assessments, more helpful parent information systems, and more intensive supports for schools that need them the most.

Many questions—and potential risks—exist in even a gradual transition to more agile, student-centered learning systems. Yet, as CRPE looks ahead to the next 25 years of public education, it is our belief that fundamentally rigid and inequitable structures prevent the current system from doing what is necessary to prepare every child for the future. The work required is daunting, especially given the ideological divides in education today. But the stagnant debates over issues that have long been the focus of education reformers—funding, parental choice, school accountability—demand an injection of fresh thinking that can awaken new political coalitions and bridge long-standing divides.

These essays are intended to provoke discussion and debate, not provide all the answers. These are difficult, debatable challenges and will require all of us to untether ourselves from past orthodoxies and push each other’s thinking. In the end, however, there is real urgency for beginning to try new approaches, test their efficacy, and build coalitions to create widespread change. Our hope is that these essays help launch the work ahead.

We at CRPE are fully optimistic about the future. Our students are up for the challenges ahead. We are committed to ensuring our learning systems are, too.

Endnotes

1. Jason Gaulten and Alan Gottlieb, *The Age of Agility: Education Pathways for the Future of Work* (Denver, CO: America Succeeds, 2017).
2. Jacques Bughin et al., *Skill Shift: Automation and the Future of the Workforce* (McKinsey Global Institute, 2018).
3. James Manyika et al., *Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation* (McKinsey Global Institute, 2017).

Learning in the Age of Agility: How U.S. Education Can Prepare Students to Solve the Problems of the Future

At [Amazon Go](#), a grocery store in Seattle, a combination of artificial intelligence, motion cameras, and other technologies has eliminated the need for clerks and lines. Customers scan their phones on entry, grab items off the shelf, and walk out the door. An itemized receipt, fully accurate down to the type of panini sandwich chosen, arrives by phone and is charged to the customer's Amazon Prime account. Automation is not the future; it is now. New technologies are already replacing lower-wage jobs in apple orchards and factories, and may soon make redundant what have been bedrock middle-class jobs as well. But new technologies can also create possibilities in the form of new jobs and new ways of solving problems. America's future depends heavily on whether education, from preschool through adult professional training, can adapt to a rapidly changing world. Our young people are demonstrating that they are willing and able to solve the most complex social, technological, and economic challenges and ready themselves for the future if we give them the chance. This introduction sketches the opportunities and challenges to come and introduces a set of essays about how public education can rise to the occasion and prepare the next generations to lead us forward.

America Faces Unprecedented Change and Uncertainty

What will be the impact of fast-emerging technological advancements such as artificial intelligence and automation on the future global economy, and on political and social stability? The most dire predictions read like a dystopian novel, with rampant unemployment leading to violent civic uprisings. As Nick Hanauer, a billionaire venture capitalist and leading advocate for universal basic income and other economic redistribution policies, has warned fellow elites, "The pitchforks are coming."

Some predict a perfect storm: increasing global competitiveness will make it more difficult for the American economy to thrive, an aging population will put more pressure on health care and social service systems, and the strong likelihood of more climate change will threaten the existence of some communities. These dramatic shifts come at a time when America, it can be argued, is already in a period of economic decline and political instability.

Many, however, have questioned these extreme predictions, pointing out that technological change and productivity gains have always produced both economic disruption and opportunity. In some surveys, younger workers have offered relatively sanguine assessments of the Fourth Industrial Revolution. But they also report

that they are not fully prepared for the changes to come.¹ More optimistic futurists acknowledge that while new opportunities for employment and innovation will certainly be part of the rapid pace of change, there will almost certainly be significant shifts in the types of jobs available, the skills needed for existing jobs, and the wages paid. Despite different prognostications, all agree that the shape of the future depends on the response from policymakers, businesses, labor organizations, and—importantly—education.

In a recent series of reports, McKinsey analysts summarized the findings from their models and industry surveys:

The stakes are high. . . . Failure to address the demands of shifting skills could exacerbate social tensions and lead to rising skill and wage bifurcation—creating a society split between those gainfully employed in rewarding work and those stuck in traditional jobs with diminishing wage prospects. . . . The new imperative of our automation age is the shift to a “learning economy,” in which human capital is paramount. The future prosperity of our societies, and the well being of our workforce, depends on whether we are able to attain that goal.²

Chaos or opportunity? The outcome depends on American education and ingenuity

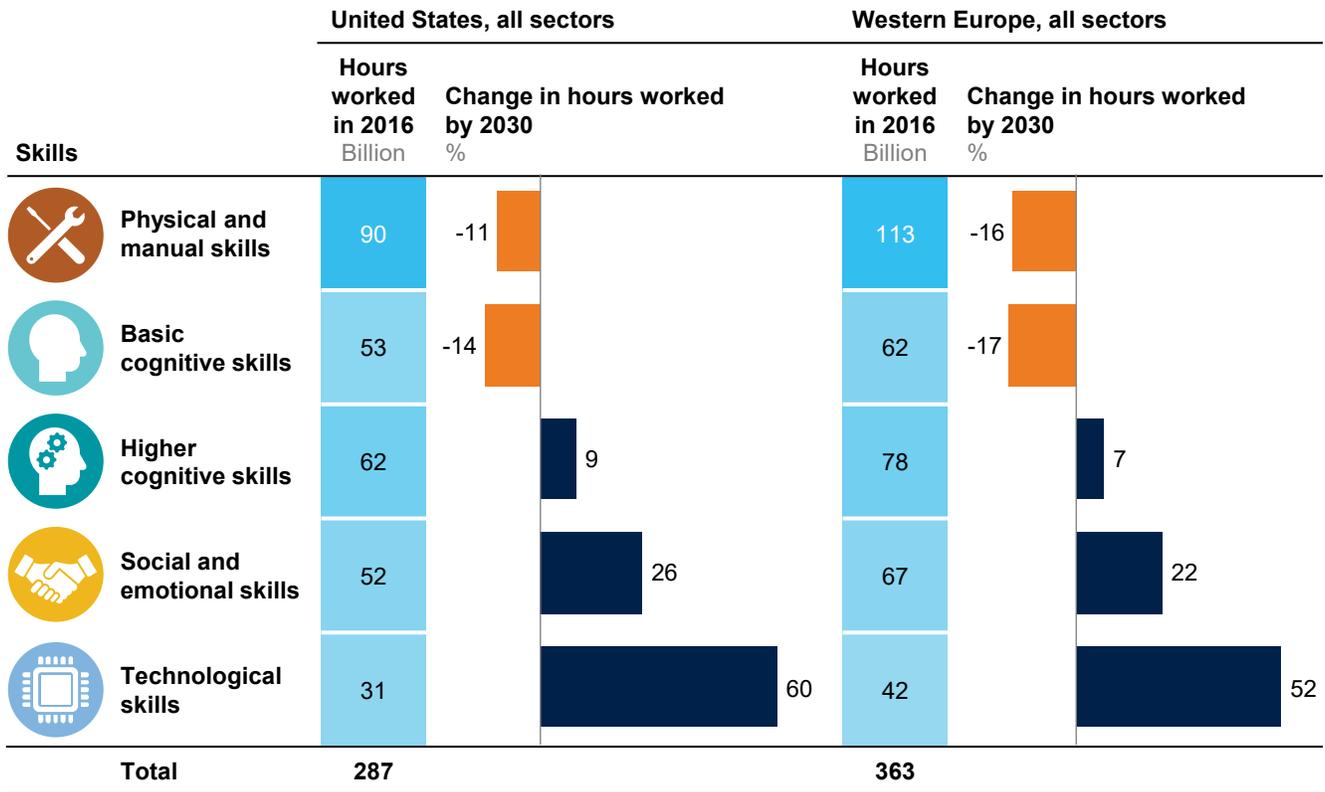
The critical question during this period of what can surely be considered massive uncertainty is: Can America rise to the occasion? A sober assessment of the research to date makes some things clear about which skills and competencies will be most needed in the coming decades, and has important implications for how education will need to change:

1. There will be more of a premium on skills only the human mind possesses. Models predicting what types of jobs will be created and which will disappear are all imperfect, but most suggest that easily automated jobs, including mechanics, machine operators, finance and accounting, and production workers, will likely decline globally. Replacing them will be managerial and professional positions (engineers, scientists, analysts), care workers (elder care, child care, social services), and “creatives” (artists, performers, entertainers). Even jobs that are not wholly replaced will shift in emphasis to tasks oriented toward critical judgement, care, creativity, and communication.

FIGURE 1. Automation and AI Will Accelerate the Shift in Skills That the Workforce Needs

Based on McKinsey Global Institute workforce skills model

0  100



NOTE: Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom. Numbers may not sum due to rounding.

SOURCE: McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis

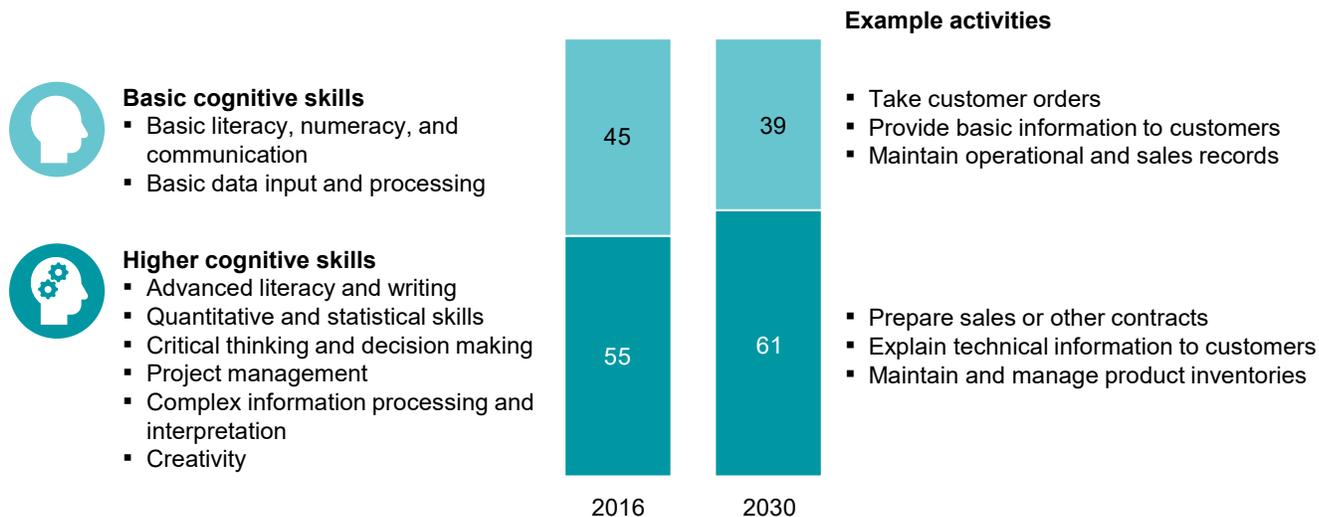
No matter what kinds of jobs and problems must be solved in the future, basic academic competencies will always be needed—language skills, computation, analysis, and civic education. The U.S. education system is not reliably providing these skills, even for today’s jobs and society. In the future, there will be even more urgency to find ways to guarantee every student a strong foundation in basic computational and literacy skills, and a foundational core of content knowledge.

However, “soft skills”—such as creative and collaborative problem solving, social skills, mature judgement, skepticism, and adaptability—will be more important than ever. This means that our schools must find ways to ensure that students are mastering both “hard” and “soft” skills, a daunting challenge given that too many students are still not mastering those basics.

FIGURE 2. Higher Cognitive Skills Are Increasingly Displacing Basic Cognitive Skills Across Occupations

Based on McKinsey Global Institute workforce skills model

United States and Western Europe
% of time spent on cognitive skills



NOTE: Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom. Numbers may not sum due to rounding.

SOURCE: McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis

2. Automation will affect everyone, but will create more problems for different groups. While developing countries are likely to see a growing middle class, the opposite is true for advanced countries where wage polarization is likely to grow. Young people, those less educated, and groups already receiving less training and less education are most at risk to be affected by disruptions in the labor market. A [comment from MIT's Andrew McAfee](#), coauthor of *The Second Machine Age*, reminds us that this trend is already underway: "I'll start to calm down when old-fashioned middle-class jobs come back. I'm just not seeing that."

Again, no one can know how things will play out, but the history of rising inequality does not bode well for social and political stability and may already be testing the strength of well-established democracies. It may be that opportunities for social mobility—preschool preparation, K-12 quality, access to advanced education and jobs—will be not just a moral and civil rights issue, but also take on new practical urgency.

Civic education will be more important than ever. Democracy cannot function in a world where health, environmental, and population issues are increasingly complex, but adults are so unable or unwilling to engage in the debate and are easily drawn to simplistic solutions. Democracy also cannot thrive when people don't accept that debate, disagreement, and respect for unpopular views benefit everyone and are essential to a free society.

3. We will need many more "creatives," innovators, and effective leaders. The scenarios ahead may not result in doom and gloom. New innovations and technologies create new jobs. Policies and programs can help people adapt to new circumstances, find new opportunities, and address inequalities. But the realities and challenges ahead are complicated and will depend on leaders and innovators. We will need as many of those as possible, from all walks of life.

Traditional ways of identifying and cultivating talent and leadership (e.g., "gifted" programs) will not be enough. We must find new, radically personalized ways to help every student realize their untapped potential, ideas, and problem-solving capacities. We must cultivate individual passions, talents, and potential in ways that go beyond the opportunities only available now to students who end up in elite programs, who have extensive social networks, whose families have the time to piece together customized tutoring, enrichment, and social opportunities. We must challenge ourselves to look at children who might seem rebellious, disabled, or unmotivated as potential leaders and innovators, not troublemakers. We must reorient our school systems to stop using labels and boxes and instead create pathways and possibilities that recognize and build on what scientists know are essential to unlocking potential.

We must find new, radically personalized ways to help every student realize their untapped potential, ideas, and problem-solving capacities.

4. Change will be the new normal. Employment losses and new opportunities will arise very quickly. According to a McKinsey Global Institute report, by 2030 between 400 million and 800 million individuals could be displaced by automation and need to find new jobs. If anything is certain about the future of work, it is that it will be

disrupted for many people. Those at the beginning or early stages of their professional careers are likely to face employment instability and volatility. Older adults and educators will need continual retraining to update their understanding and skill sets.

These shifts could also produce a dynamic economic environment in which people are increasingly liberated from menial tasks and move into new jobs that focus more on creative and uniquely human pursuits. But that can happen only if workers start out with the knowledge and skills to capitalize on these shifts and have access to opportunities to gain new knowledge and skills continuously throughout their careers.

Predicting individual jobs and skills and aligned training will require constant rethinking, evidence building, and adjustment. Partnerships with industry will be essential so that education can stay connected to emerging skills and employment opportunities. As Darrell West of the Brookings Institution and author of the book *Future of Work: Robots, AI, and Automation* wrote, “The traditional model, in which people focus their learning on the years before age 25, then get a job and devote little attention to education thereafter, is rapidly becoming obsolete. In the contemporary world, people can expect to switch jobs, see whole sectors disrupted, and need to develop additional skills as a result of economic shifts. The type of work they do at age 30 likely will be substantially different from what they do at ages 40, 50, or 60.”³

There can no longer be “one best way” for everyone. State and local education systems must adapt to rapidly shifting workforce needs. Partnerships with industry will be essential to anticipate and address students’ need for comprehension and skills. Young adults will also need flexible opportunities for retraining well beyond high school. “Lifelong learning” will take on new urgency and meaning. The traditional lines between high school, college, and career must shift. Students and their families will need the power and resources to craft individualized plans for education and re-education to access career training in a way that saves the most time and money possible. Public funding must flex to support this. Educators and schools must be adept at shifting course, partnering, and adapting based on individual needs, economic opportunity, and core purposes.

Education can be a key element of a successful response—or the reason we fail

Other countries facing these challenges might simply decide to create a national program to ensure their schools focus more on soft skills, or create a national system of apprenticeships. In the U.S. our federal system of education, pluralist traditions, and deference to elected school boards and local control in most states mean that shifting quickly does not come easy. We must therefore find ways to adapt and compete within a highly decentralized system. This is a challenge but, as we will show, can also be an advantage.

America’s edge has always been ingenuity, grit, independent thinking, and innovation. These are the attributes—in both schooling and human development—that are born from bottom-up solutions, not centrally planned solutions. American ingenuity is our best hope. Innovative educators, the business community, and community partners are

ready and willing to come together to design new approaches to workforce training, talent identification and development, social and emotional development, and social mobility.

Innovative educators across the country are already demonstrating what is possible. At [Workspace Education](#) in Bethel, Connecticut, students and their families have access to a curated set of learning opportunities ranging from homeschooling curriculum and exchange programs to locally developed dual-credit college courses and “micro-schools” focused on core STEM or humanities skills. At [ReSchool](#) in Colorado, families are provided resources and advocate networks to identify student social, mental health, and learning needs, as well as goals and opportunities for each student. In Florida, education savings accounts allow students with special needs to choose therapists, tutors, and instructional settings that fit their unique needs.

Instead of traditional classes, students at [Purdue Polytechnic Institute](#) in Indianapolis work on a series of community-based projects throughout the year that aim to incorporate the skills Indiana high schoolers are supposed to learn. As they pursue projects, students interview community members, work with peers to hone their ideas, and eventually pitch their plans to business leaders. Students still have assignments and tests to show they have mastered concepts such as conservation of energy or linear equations, but they also have a lot of freedom. Each week they set their own schedules, and in addition to some regular classes, they spend hours working independently.

At Seattle’s [Downtown School](#), a spinoff of the city’s premier college prep program where Bill Gates and Paul Allen went to high school, there are no electives or other expensive extras. Students attend core classes from 9:00 a.m. to 2:00 p.m. The shorter day allows students to access a strong core curriculum and build social connections. After school, students, along with their parents and advisors, design their own customized internships, service learning, and extracurriculars to fit their career and personal development interests.

It’s too early to know which of these and other emerging innovations will be most effective, but they have important common threads:

- They treat every student as an asset to be maximized.
- They view “coproduction” with students and families as the primary theory of action.
- They customize solutions for each student based on their unique talents and capacities.
- They see learning as a permeable endeavor, necessarily pulling from community, global, and technology-based resources.
- They assume that students need to learn to debate, think deeply, and take ideas from concept to fruition to be leaders and problem solvers.
- They focus more on curation and management of a wide array of learning opportunities than a set delivery model.

And critically, *all of these examples operate outside the traditional public education system*. Most are privately operated or operate with special charter school-like flexibilities. A good portion of them serve already advantaged student populations. There have been efforts to create similar models within school districts and traditional higher education settings, but those efforts have struggled

As has always been our core concern at CRPE, the challenge ahead is how to create opportunities for these kinds of customized and focused solutions at scale and for every student. Without systemic solutions, we will fail to meet the challenges ahead. We will simply not prepare enough leaders, employees, and problem solvers in a system where talent is evenly distributed but opportunity is not.

Without systemic solutions, we will fail to meet the challenges ahead. We will simply not prepare enough leaders, employees, and problem solvers in a system where talent is evenly distributed but opportunity is not.

Our educators are ready to innovate, but our systems are not

Designed more than 100 years ago, America's public education system is not preparing students for today's realities of civic and global competitiveness, much less tomorrow's. A few facts:

- U.S. students score poorly in math and science compared to other industrialized countries. Out of 71 countries the U.S. ranked 39th in math and 25th in science.⁴
- Students are not graduating high school with the necessary skills and knowledge to succeed in college. According to the Center for American Progress, remedial college courses cost families across the country about \$1.3 billion every year.⁵
- Thirty-one percent of 12th grade students report never participating in debates or panel discussions about current events. Another 70 percent report never having written a letter to give an opinion or help solve a problem.⁶
- Higher education is prohibitively expensive for too many students. Students who do attend college can encounter crushing debt. In 2014, U.S. student loan debt exceeded \$1.2 trillion, with over 7 million debtors in default.⁷

Pathways to excellent higher education and social mobility still exist, but access remains largely determined by one's race, disability, or economic status. The result is that while talent is evenly distributed among students, outcomes are not:

- Children from high-income (top 1 percent) families are ten times more likely to become inventors as those from below-median-income families.⁸

- Children from racial and ethnic minority groups, children living in poverty, and children who are English language learners are 2.5 times less likely to be identified for gifted programs, despite achieving at the same levels as their peers in gifted programs.⁹
- NAEP fourth grade achievements (1998 to 2013) show that 8.6 percent of students with disabilities scored proficient in reading, versus 26 percent of nondisabled peers.¹⁰
- Rural students have less access to high-speed internet, AP coursework, and extracurricular opportunities. They tend to feel self-conscious about their academic abilities and are more likely to “undermatch” themselves when applying to colleges.¹¹

There is no single solution, but for every solution tried there is one common theme: educators, students, and families who want something better are thwarted by an outdated delivery model. A recent CRPE study of schools trying to personalize learning illustrates the problem.¹² Despite strong support from teachers and students, central office policies and supports stifled innovation in schools, instructional rigor remained stagnant, and students on the margin typically stayed there.

For every solution tried there is one common theme: educators, students, and families who want something better are thwarted by an outdated delivery model.

Education reforms to date are necessary, but not sufficient

Despite these daunting challenges, the education reform initiatives of the last two decades have shown that progress is possible: creating new, innovative schools, giving schools flexibility to innovate, allowing families and educators to find the right “fit,” ensuring that public goals are accomplished via public oversight, and providing equitable funding and opportunity.

The myth that poverty is inextricably linked to outcomes has been shattered by innovative charter schools and autonomous district-run schools. New ideas are taking hold around the country: that students should be able to move at their own pace, that brain science has critical implications for educational learning environments, and that families from all backgrounds can become active participants in choosing schools and improving their school systems.

But recent strategies don’t go far enough. A significant “college for all” push provided impressive numbers of students from low-income backgrounds with new opportunities to attend college, yet career readiness indicators have hardly budged.

American charter schools have largely improved outcomes for disadvantaged students, but many early successes are plateauing.¹³ Accountability systems based on standardized end-of-year exams and measuring memorized knowledge are clearly outdated. Efforts to “personalize” education have taken off in many school districts but have too often failed to produce rigorous instruction in a truly customized manner.¹⁴

Overwhelming evidence now supports what every parent knows by experience: that each child is a complex package of talents, experiences, quirks, and interests—what Todd Rose has termed in *The End of Average* as a “jagged profile.” If America is to be successful, our education system must be reimagined away from mass delivery of content knowledge and toward developing individual talents and capabilities.

The past two or three decades have been focused on the *all*. What do *all* students need to know and be able to do before graduation? What do *all* schools need to be accountable for? How can we assure *all* students have equal access to high-quality instruction? These were important goals, and reformers made progress in these areas. But our focus now must seriously and urgently turn from *all* to *each*. Does *each* child have what they need? If not, what will it take?

It is time to fundamentally rethink our assumptions about educational delivery. We cannot successfully face an age of agility and customization if our education system remains moribund through rigidity and sameness. The need to reinvent public education is more urgent than ever—and yet the roadmap is unclear.

What Should An Agile Public Education System Look Like?

To some degree, all students need the same thing from an education: to be able to read, write, and compute. To be prepared to solve the problems of the future, they will need to think critically, originate ideas, participate in American civic society, and work in teams to create solutions. But ultimately, the job of public education must be to customize and individualize, to embrace and cultivate complexity, and to create schools that are the right fit—rather than ask kids to fit in. Public education must enable every child to reach their full potential.

The work ahead will require educators, policymakers, researchers, philanthropists, and others to set aside all current assumptions and consider how our education system, designed for the challenges of 100 years ago, can become a learning system built to prepare every student for the certainties and uncertainties of the coming decades.

Ultimately, the job of public education must be to customize and individualize, to embrace and cultivate complexity, and to create schools that are the right fit—rather than ask kids to fit in.

The goal of achieving customized pathways for every student has profound implications for the way we think about service delivery, governance, and policy. Much has been written (see for example the excellent treatise *The Futures of School Reform*) about “unbundling” education to better suit individual student needs and preferences.¹⁵ But if we are serious about change, we also must tackle

the “rebundling” questions—the system questions that will determine how quickly education can change and who will benefit from those changes.

Can America’s public schools and higher education systems respond effectively to these challenges, or will they drag students and communities down? We think education can adapt, but it will not be easy. This collection of essays suggests how we can approach the unknowns and draws implications, both immediate and long-term, for research and development, investment, and policy. The seven essays we present here point toward new principles and priorities:

1. Schools should teach to the extremes, not the mean, so they capture talents that are now being lost, and motivate many kids who are now settling for mediocrity. From the earliest ages, student learning opportunities should be customized to build on individual talents and potential. This implies that schools may not always be the best positioned to deliver all of those opportunities, and thus must be reoriented to curate portfolios of learning, growth, and career preparation opportunities—rather than deliver all instruction and supports.
2. The traditional lines between high school, college, and career must be completely reimagined to allow students a more affordable and direct pathway to high-paying jobs.
3. Schools cannot be the sole learning space. Students and their families should be able to access learning experiences now locked up in community resources, such as businesses, hospitals and clinics, social service organizations, cultural institutions, colleges, and churches.

This concept of a more agile, permeable system carries much opportunity for students who, because of poverty, disability, language barriers, exposures to trauma, or other life experiences, now face grim statistical probabilities. It also opens up new pathways for students from more advantaged backgrounds. Yet it also carries risk. In the name of customization, critical common experiences and skills could be missed. Teachers and schools would need very different capacities. If students increasingly have learning experiences outside of school and money follows them, who should be accountable for learning outcomes and responsible use of government funds? Our essays point to ideas, nongovernmental and governmental, that could minimize those risks:

4. Families must have the power to opt out of rigid systems that refuse to change. Those without the time and agency to package together customized solutions will need help from “navigators”—community-based groups that advocate and inform. Nonprofit, community-based organizations and school providers, working with or without government, would have to step in to ensure that unmet family and school needs are addressed.

5. Schools teaching younger students would have outcome requirements focused only on a limited set of core gateway skills. Older students should be able to select or build personalized learning pathways toward careers.
6. Teachers must be of two kinds—those who build deep relationships with students and curate personalization, and specialists who are experts at teaching specific bodies of knowledge. The former group should be in schools, while the latter should serve in (or as) independent providers.
7. Funding must increase, be more flexible, and follow students longer. This is especially true for students with more significant learning and developmental needs. New sources of total funding must be developed, including health and welfare funding and leveraging creative partnerships with industry.

In the abstract, these ideas may seem radical, but they are the logical extension of the most innovative schooling available today outside of public education and for more advantaged students. Giving every student access to advanced learning, internships and professional networks, and social development opportunities will require a radical reimagining of education and shifts in the flow of funding and power. That will not be without pain and controversy, but the alternative is bleak.

More than ever, America needs creative, talented teachers, school leaders, entrepreneurs, and thought leaders who can solve complex problems. Every school and classroom has students with the potential to become these leaders, but we are losing too many of them. We will pay a very high price tomorrow for failing to attend to social mobility, customized opportunity, and systems change today.

If the challenges before the education system seem daunting, the students themselves offer hope. Recent surveys of teenagers have found they are inclined toward lifelong learning and eager to have an impact on the world through their work. The question is whether the institutions charged with educating them can harness those inclinations in ways that allow them to thrive in our new economic and social realities. CRPE is committed to putting our best imagination and analyses forward to reimagine the systems and structures that can ensure that the next generations of American students are prepared to solve the complex problems of the future. This is the beginning.

As CRPE looks ahead to its next quarter century, these essays and the questions they explore represent a beginning to identifying new ways to help our nation's public education system prepare for an age of agility. It is our hope that these ideas will help inform conversations among educators, policymakers, funders, and community leaders—conversations that CRPE will continue to inform and drive in service to our nation's students.

Endnotes

1. Deloitte 2018 Deloitte Millennial Survey: *Millennials disappointed in business, unprepared for Industry 4.0* (Washington, D.C.: Deloitte, 2018).
2. Jacques Bughin et al., *Skill Shift: Automation and the Future of the Workforce* (McKinsey Global Institute, 2018).
3. Darrell M. West, “The need for lifetime learning during an era of economic disruption,” Brown Center Chalkboard (blog), The Brookings Institution, May 21, 2018.
4. “PISA Worldwide Ranking – average score of math, science and reading,” FactsMaps, accessed October 18, 2018.
5. Laura Jimenez et al., *The Cost of Catching Up* (Washington, D.C.: Center for American Progress, 2016).
6. Michael Hansen et al., *The 2018 Brown Center Report on American Education: How Well are American Students Learning?* (Washington, D.C.: The Brookings Institution, 2018).
7. “More is less,” The Economist, August 13, 2015.
8. Alex Bell et al., *Who Becomes an Inventor in America? The Importance of Exposure to Innovation* (Cambridge, MA: Equality of Opportunity Project, 2018).
9. M. René Islas, “Equity in Education: Children Who Are Overlooked for Gifted & Talented Education,” EDU (blog), Scholastic, March 7, 2017.
10. “Interpreting NAEP Reading Results,” National Center for Education Statistics, last modified April 3, 2018.
11. Andrew Crain, *Serving Rural Students* (Bethlehem, PA: National Association of Colleges and Employers, 2018).
12. Betheny Gross and Michael DeArmond, *Personalized Learning at a Crossroads* (Seattle, WA: Center on Reinventing Public Education, 2018).
13. Julian Betts and Y. Emily Tang, *A Meta-Analysis of the Literature on the Effect of Charter Schools on Student Achievement* (Seattle, WA: Center on Reinventing Public Education, 2014); Center for Research on Education Outcomes, *Urban Charter School Study Report on 41 Regions* (Palo Alto, CA: Stanford University, 2015).
14. Gross and DeArmond, *Personalized Learning at a Crossroads*; “Notes from the Field” blog series, The Lens, Center on Reinventing Public Education, especially Betheny Gross, “Beware the Iconography Trap of Personalized Learning: Rigor Matters,” August 2016.
15. Jal Mehta, Robert B. Schwartz, and Frederick M. Hess, *The Futures of School Reform* (Cambridge, MA: Harvard Education Press, 2012).

To Serve Every Student Well, Design for the Tails, Not the Mean

Robin Lake and Travis Pillow

The public education system must prepare all students to solve the problems of the future. But for many students, the system is not rising to the challenge.

While high school graduation rates are at an all-time high, completion and dropout statistics for students with disabilities remain dismal. The latest federal education statistics show fewer than two-thirds finished high school with a standard diploma.¹ A fifth either dropped out of school or aged out without receiving a credential. This educational shortfall manifests in the workforce. Less than a third of working-age people with disabilities are employed, compared to 74 percent of people without disabilities.² More than 10 million working-age Americans with disabilities are outside the workforce. A growing number of companies are looking for ways to draw on these Americans' talents.

Chetan Bakhru, a senior accessibility specialist for JPMorgan Chase, [recently put it this way](#): “People with disabilities can represent some of your best talent pool because they have skills that they’ve had to develop throughout their lives, like problem solving and leadership and time management. . . . There is a very high percentage of people with disabilities who are capable of working but are unemployed simply because of misperceptions or biases.”

Beyond students with disabilities, other student populations have unique needs that existing public school systems remain ill-equipped to meet:

- High-achieving, low-income students often fall behind their peers who have similar abilities but greater economic means.³ They are less likely to be identified for gifted programs or have access to challenging coursework.⁴
- Students who are not native English speakers often struggle to find high-quality academic programs tailored to their needs.⁵
- The number of American public school students who were homeless rose by more than 38 percent between 2009 and 2014.
- Researchers have estimated that 50 percent of children in foster care drop out of school.⁶ College attendance and completion rates for foster children substantially lag behind those of their peers.

- Few jurisdictions have coherent policies designed to meet the unique academic needs of “twice exceptional” learners who may have extraordinary gifts in some areas and require support in others.⁷

The struggles of these students, along with those of countless other “square pegs”—independent thinkers, nonconformists, students who are exceptionally creative—cry out for approaches that can better match talent with opportunity. It’s hard to forecast all the demands the [age of agility](#) will place on the next generation, but it’s a safe bet that creative problem-solving, bilingual communication skills, and unconventional thinking will all be in high demand; we cannot afford to throw away these talents. Further, solving for the needs of these complex learners may help the public education system get it right for everyone.

Who Are the Students on the Tails and Why Do They Matter?

At [New York City’s Autism Charter School](#), students with profound communication and academic challenges benefit from a radically personalized education. Each receives personalized job training, individualized academic goals, supports, and motivators tailored to their interests—all aligned with community partnerships and intensive communication and coordination with family members.

Imagine if every student had a similarly tailored experience

Most public school districts and schools will readily admit that they don’t know what to do with the most complex students. Special education works in some cases, but too often does not. Teachers are trained to address generic categorical needs such as “ADHD” or “gifted,” but not to look for individualized solutions. The participation of low-income students and students of color in gifted programs is disproportionately low. While intelligence is randomly distributed, opportunity is not.

A growing effort to personalize learning moves in the right direction, but is not enough. These efforts are largely focused on a broad attempt to better differentiate instruction in a classroom or to allow students to express more personal agency over their learning. Students at the extreme are generally still forced to try to fit in a classroom or schools that can’t accommodate their differences. These kids need more than just to move ahead in an online math program or participate in project-based learning. These students need flexibility and options. They need interactions with adults and peers who “get” them. They need a responsive and sophisticated set of supports that can be customized to who they are at any given developmental stage. They need an education system that recognizes these needs and is determined to help them realize their individual potential.

Students at the extreme are generally still forced to try to fit in a classroom or schools that can’t accommodate their differences. These students need flexibility and options. They need an education system that recognizes these needs and is determined to help them realize their individual potential.

What if we turned things upside down and designed the system for them?

New programs and new supports within the current system will not accomplish what we're talking about. School district bureaucracies are designed for sameness, not individualized approaches, and can rarely adapt to meet the needs of every student. The NYC Autism Charter School tried to get the division of the New York City Department of Education that provides special education to adopt its approach, but its efforts fell apart because of teacher certification and training requirements, lack of common planning time, and other factors that, as a public charter school, the NYC Autism Charter School had greater flexibility over.

Staffing constraints and rules limit the accommodations schools are able to offer students who don't fit neatly into a diagnosis or other service category. It often isn't feasible to keep a full complement of social workers, school psychologists, speech and occupational therapists, or behavior specialists on staff to accommodate the full range of conceivable needs complex learners may have.

At the same time, therapies and social services within schools are often narrowly focused on students' educational needs. That means they operate in separate silos from the medical and social services employees who work with children outside school, even though their work may naturally overlap. The same occupational therapist who helps a child with impaired motor skills learn to hold a toothbrush could also help them learn to hold a pencil. The same mental health counselor who helps a child cope with out-of-school trauma could also help them deal with stresses that arise in school.

Schools like the NYC Autism Charter School are cropping up around the country. But because the current education system is so rigid, they often operate as new charter or private schools with the freedom to design educational programs from scratch. Learning from their approaches, and applying their principles more broadly, would lead schools to develop:

- Real choices and multiple pathways for students to find a good fit.
- A focus on student competencies with a commitment to rigor and equity.
- A commitment to addressing social and emotional learning needs in innovative ways.
- A focus on student assets, not deficits.
- New ways of leveraging community assets, including industry, universities, arts, and social services.

School systems may need to rethink everything. Training. Staffing models. Schedules. Student progression. The artificial boundaries that separate schools from community institutions like employers, arts institutions, universities, and social-service providers.

Sometimes, effective learning experiences lie outside the school walls. The North Florida School of Special Education is one of many Florida schools that offers a transition-to-work program for older students. They often spend part of the day working for employers like Publix, a local grocery chain. This on-the-job experience helps students hone their soft skills while also helping them earn incomes and prepare for future employment.

The program offers a natural partnership between schools and companies, many of which already participate in supported-employment programs for adults with disabilities. Schools should work to systematically track the skills students acquire from these experiences—and the challenges they encounter—so they can identify gaps in on-the-job learning and interventions designed to address them.

School systems may need to rethink everything. Training. Staffing models. Schedules. Student progression. The artificial boundaries that separate schools from community institutions like employers, arts institutions, universities, and social-service providers.

Systemic Innovations

Serving every student's needs, no matter how complex, at scale will require system-level changes, both within school districts and outside them.

Districts could build intentional spaces for experimentation and improvement by giving schools the opportunity to propose innovative new programs for students with complex needs who are not currently being well served. In exchange for more charter-like flexibility over staffing and funds, the schools would have to show results using agreed-upon metrics. Districts and states could support these schools by curating community partnerships, resource banks, talent recruitment efforts, and information to help families with unique needs find a good fit.

The question is why districts have not already done these things, and what might cause that to change.

Bottom-up pressure. Parents and students should have a greater say in shaping learning conditions. They should be made aware of their rights and their options for exercising them. Giving parents and students the authority to petition for more rigorous courses, more inclusive learning environments, or additional accommodations without turning to the courts may help force school systems to find creative ways to serve them better.

Top-down pressure. The gradual relaxation of the federal No Child Left Behind Act's requirement that schools ensure students from key subgroups—including those with disabilities—make adequate yearly academic progress has reduced incentives for schools to ensure they serve complex learners well. In many cases, accountability systems reward schools that lift students above minimum proficiency thresholds. This drives focus and attention toward the median, rather than toward students on the tails. With new flexibility to design their own accountability systems, the time is ripe for states to experiment with new ways to push schools to improve outcomes for overlooked student groups—while learning from past excesses by, for example, allowing enough time for school systems to try new approaches and giving those approaches a chance to work.

Support for breakthrough initiatives. Districts and charter school authorizers, faced with real pressure from parents and accountability systems, would have to foster new solutions for students whose needs are not currently being met. National and local philanthropies could support the design and startup costs for specialized technology-based tools and curricula for complex learners, as well as for more radically personalized school designs. The next generation of charter management organizations (CMOs) could propose, for example, to run a set of schools that primarily manages student learning portfolios. Rather than providing all of the educational services, the CMO might instead help a student who is both gifted and dyslexic bundle a high-level math class, specialized tutoring, and perhaps a social skills friends group. The CMOs would help provide transportation or bring services to a central location, vet the learning services, and monitor—and be accountable for—the student’s progress. Put simply, the CMO would be designed to “get” every student and follow them throughout their educational progression to create coherence as needs evolve.

Given the opportunity, entrepreneurial educators, parents desperate for new solutions, and students who are complex thinkers surely could come up with many more possible school designs and systemwide solutions. Much like wheelchair ramps, video closed-captioning, and accessible web design were accommodations for special populations that wound up having much more broadly shared benefits, the goal should be an education system that adheres to the principle that a focus on serving exceptional students can ultimately serve all students better.

Given the opportunity, entrepreneurial educators, parents desperate for new solutions, and students who are complex thinkers surely could come up with many more possible school designs and systemwide solutions.

This Work Requires Changes to Policy, Many of Which Will Disrupt the Status Quo

Transforming the system to serve complex learners better may ultimately result in changes that benefit everyone—but also threaten to disrupt entrenched interests. A public education system designed to serve these students well would include:

- **Weighted backpack funding.** Parents often struggle to obtain appropriate services for their children during the traditional process of developing an Individualized Education Program, or IEP, and the commitments they do get are only as good as a school’s ability to provide them. At the same time, their children’s evaluations also help their schools draw additional funding, both under federal IDEA funding and through state formulas. Families should have the option of using a portion of that money themselves to pay for supplemental therapy or out-of-school or at-home learning experiences, or to supplement medical and social service programs that may affect their child’s ability to perform at school.
- **Early identification and intervention.** Children of color are often misidentified when it comes to special education. And while [Child Find systems](#) remain imperfect at identifying children’s

special education needs, they are even less well-equipped to identify other issues—gifted eligibility, dual exceptionality, mental health needs—that may affect a student’s success at school. School districts should pilot new methods of assessing students’ needs and developing custom educational pathways and support services.

- **Navigators.** Parents of children with special needs often spend years learning how to advocate for their children, what services are available, and what recourse they have if they don’t get services they feel are necessary. Wealthy parents often hire lawyers or consultants to help them answer these questions, or, if necessary, take their schools to court. If every child had a professional advocate to advise parents of their rights and available options, it might help children find better services and reduce costly litigation. Through their work with parents, navigators could also help school system officials identify unmet community needs.
- **A stronger, provider-agnostic conception of student rights with real potential remedies.** Right now, IDEA places an obligation on schools to provide the accommodations called for in an IEP. Parents often must waive those rights if they opt for private alternatives. As more students with special needs participate in workforce training programs, dual-enroll at colleges, or take advantage of education services from a range of providers outside their schools, their right to a free, appropriate public education should not be a take-it-or-leave-it proposition.
- **Coproduction with parents.** Parent involvement is key at schools like the NYC Autism Charter School that cater to the unique needs of complex learners. Studies have found parent literacy programs help improve outcomes for English language learners, even if parents read to their children in their native language.
- **Revamped accountability designed around learner profiles.** Today’s typical state and district school accountability systems are largely incompatible with a system designed to serve every student’s unique needs. Instead, they are designed to measure average student performance at the school or district level, masking individual performance and growth. They also are oriented around grade-level academic expectations that may not be appropriate to a particular student’s capacity and developmental needs. State and local school accountability policies must shift away from tracking average scores and move to tracking individual progress toward mastery. Paul Hill’s [essay on local governance](#) explores this idea deeply.
- **Adequate and flexible funding.** Some students are simply more expensive to serve than others. And no matter the amount, if funding is tied up in set programs and central offices, and even in schools, it cannot be used flexibly for individualized courses, community-based programming, and other customized options. Student-based funding, course-based funding, and other flexible ways for funds to follow students all must be on the table.

Together, these changes would put significant pressure on the status quo and may even challenge long-held tenets of some education reformers, such as the idea that the school should be the fundamental unit of change.

It is true that education systems are unlikely to change meaningfully unless students and their families are empowered to craft solutions that best fit their needs. However, schools, government agencies, and nonprofits must also be incentivized—and given the freedom, capacity, and resources—to meet those needs. They must develop new school designs and learning spaces that are unbound from the governance and practices of the past. They must create avenues for families to partner in new ways with educators, industry, higher education, and service providers in their communities. The question is how to achieve those ends without upending the elements of the current system that do work well.

Designing for the most complex and extreme needs ultimately benefits every student.

A system that reinvents itself to meet the needs of complex learners would leverage more community assets, give parents more information and control over resources, ensure funding and accountability follow students, and increase parents' involvement in the development of educational pathways designed to best support their children's talents and interests. In short, the system would do whatever it takes to maximize a given student's potential. And it would follow the principle that designing for the most complex and extreme needs ultimately benefits every student.

Endnotes

1. Thomas D. Snyder, Cristobal de Brey, and Sally A. Dillow, *Digest of Education Statistics 2016, 52nd Edition* (Washington, D.C.: National Center for Education Statistics, 2018).
2. "Table A-6. Employment status of the civilian population by sex, age, and disability status, not seasonally adjusted," Economic News Release, Bureau of Labor Statistics website, U.S. Department of Labor, last modified October 5, 2018.
3. Joshua S. Wyner, John M. Bridgeland, and John J. Diulio, Jr., *Achievement Trap: How America is Failing Millions of High-Achieving Students from Lower-Income Families* (Lansdowne, VA: Jack Kent Cooke Foundation and Civic Enterprises, 2009).
4. David Card and Laura Giuliano, *Can Universal Screening Increase the Representation of Low Income and Minority Students in Gifted Education?* NBER Working Paper 21519 (Cambridge, MA: National Bureau of Economic Research, 2015).
5. Claudio Sanchez, "English Language Learners: How Your State Is Doing," *National Public Radio*, February 23, 2017.
6. Andrea Zetlin, Lois Weinberg, and Christina Kimm, "Improving Education Outcomes for Children in Foster Care: Intervention by an Education Liaison," *Journal of Education for Students Placed at Risk* 9, no. 4 (October 2004), 421-429.
7. Nielsen Pereira, J. Dusteen Knotts, and Julia Link Roberts, "Current Status of Twice-Exceptional Students: A Look at Legislation and Policy in the United States," *Gifted and Talented International* 30, nos. 1-2 (2015), 122-134.

Rethinking the Traditional High School-College-Career Continuum

Robin Lake, Georgia Heyward, and Tom Coyne

In Switzerland, at age 16 students earn the equivalent of a high school diploma. After that, they move into intensive career and college preparation, working toward a baccalaureate degree. Unlike the German school system, students are not sorted or tracked during this interim period. The time between what is the 10th and 12th grades in the United States is instead considered a period for exploration and guided preparation via hands-on apprenticeships or intensive pre-college theoretical work, aligned with each student's interests and talents. There are multiple pathways toward college and career, and those pathways are viewed as complementary: students entering college should have a good idea of their interests so they can use their time well, and those interested in certain careers should know whether and how college can help them be successful in those careers.

In contrast, American public education assumes one common pathway for all: four years of high school and—for the lucky—continuation into higher education, the required credential for the vast majority of middle- and high-paying jobs. Students put in their time and hope that they are prepared and competitive for the jobs they think they want.

When economists describe the future of work, they use words like *technology-driven*, *changing*, and *uncertain*. Words like *adaptive*, *agile*, and *responsive* are used to describe workers who will thrive in this economy. A growing [consensus](#) is that work in the future, fueled by rapid technology developments, will shift and change constantly. Workers will need to be prepared to shift along with it, committing to what the authors describe as continuous waves of learning.

Work in the future, fueled by rapid technology developments, will shift and change constantly. Workers will need to be prepared to shift along with it.

A clear and concerning “skill gap” exists today, and it will only get worse with continued improvement in labor-substituting technologies like automation, robotics, and artificial intelligence. Yet as careers grow ever more diverse, in 2018 we remain almost singularly devoted to the “4+4” preparation model (four-year high school, four-year college) as the pathway to an attractive career.

While our workforce requirements change, the need for a well-informed citizenry has not waned. Since the inception of the U.S. education system, there has been a tension surrounding its ultimate goal: whether it is to prepare citizens for democratic engagement or for gainful employment. As it stands today, our education system is doing neither particularly well.

We propose a better use of the billions of dollars we spend each year on education to improve results by breaking down the traditional barriers between high school, college, and career. Our goal is to replace the current two-tiered system, where those who can afford higher education and get in are deemed ready to participate in society, while those who cannot (largely predictable along racial and class lines) are denied access to the economic and political systems necessary to participate in and contribute to all aspects of society. These barriers to social mobility run counter to the deeply ingrained ethos of equal opportunity in America and prevent this country from developing the talented workforce and democratic citizenry needed for our nation to thrive in the 21st century.

It is clearly time to reimagine the 9–16 continuum of learning and to take up the important governance and system questions we outline here: a set of specific program and policy ideas intended to move the discussion forward.

The Traditional System Does Not Meet the Needs of Today’s Students

Despite wanting to be all things to all students, today’s K–12 school system is not. It was designed to identify and prepare students for either an elite college preparatory trajectory or an inferior vocational track that ends at the secondary level.

“Gifted” programs and schools, tracked math coursework, and other formal and informal systems identify and train students for four-year college. But in reality, preparation for a four-year college often has more to do with access than skill. Students who have limited access to quality teachers and schools are rarely considered college-bound.

Even when students do arrive at a four-year college, they are all too often unprepared and unable to succeed without costly remediation. For too many, this challenge proves insurmountable, and they find themselves deep in debt and without a college degree. It can be argued this is largely the consequence of both the breadth and depth of what was taught before they arrived on campus. The K–12 system simply takes on too much content and does not infuse what is offered with appropriate rigor. As a result, high schools struggle to prepare students well for either a college pathway or a non-college pathway ending with high school.

Our devotion to the “4+4” high school to college continuum seems all the more puzzling given its financial burdens and outcomes. Between 2005 and 2012 student debt increased by 35 percent,¹ while the earnings of college graduates barely budged.² On top of the college debt crisis, researchers have raised doubt that students are getting the essential analytic skills needed for today’s careers. An analysis of the College Learning Assessment for a cohort of college students found that after four years of higher education, 36 percent of students failed to show significant improvement in higher-order reasoning skills—what professionals need to succeed in today’s complex jobs.³

Along with these broader skills, there is also demand for specific career pathways that are not being met by our educational system, meaning that we need to be more strategic about the type of education and training students receive. For example, while there may be enough engineers and scientists, there is a lack of STEM applicants for government and private sectors.⁴

Over the past 10 years, traditional career and technical education (CTE) programs across the country have been evolving to reduce tracking and modernize program offerings toward higher-wage opportunities. Such programs often lack systemic supports and rigor, however, and are still regarded as second class.⁵ Successful CTE, work-based learning, and alternative pathway programs demand investments in curriculum and teacher training, as well as coordination with businesses and/or higher education—without these investments, the programs will not be rigorous or effective.⁶ Research also suggests that successful programs for underserved youth include strong community partnerships, dual enrollment opportunities, and paid internships.⁷

At the same time, new education programs must take into account changing educational requirements. Following the 2008 recession, most of the jobs that have been added back into the economy require a four-year bachelor's degree.⁸ There are various reasons for our nation's degree inflation, including employers' declining confidence in our nation's high schools. However, students who are adequately prepared for careers through means other than a four-year degree still should be able to gain entry into middle-class jobs as they did before, as long as they are adequately prepared.

In short, students who graduate from a four-year college are too often saddled with debt and not adequately prepared for a career. Students who are not able to access four-year colleges are relegated to technical preparation programs that often fail to provide strong systemic supports and curricular rigor, and thus fail to adequately prepare students for anything but low-skill careers.

Rethinking the Traditional Boundaries

While pressure to tighten preparation pathways has been felt most acutely at the postsecondary level, there is a clear argument for addressing career preparation at the secondary level as well. Not only is it more expedient and less expensive for the student, it is also easier to establish policy at the secondary level. Most students in our nation are educated within the public education system, and private schools that receive federal funding must comply with accompanying regulations. Put differently, a significant amount of the groundwork to support substantial secondary reform is already in place.

Over the past 10 years there has been a resurgence of interest in career preparation at the secondary level, including improved CTE programs, new graduation pathways, and apprenticeship systems based on European models. There has also been a move toward tighter coordination and permeability between secondary and postsecondary preparation and credits, via dual-credit programs and stackable credentials.

There has been a resurgence of interest in career preparation at the secondary level, including improved CTE programs, new graduation pathways, and apprenticeship systems based on European models.

These initiatives all assume some degree of blurring between the traditional boundaries of high school, college, and career. Below we present some promising examples at the national, state, and local levels. Each embraces greater permeability of the P-16 continuum and presents a model for a different kind of education system.

The Swiss model provides specific training but does not lock students into a career

In the Swiss system referenced in the introduction, the national government and provinces work with industry to create a coherent set of competencies and aligned apprenticeship opportunities. This is facilitated, in part, by a Swiss form of government that is closely connected with the business community, sometimes referred to as a “corporatist” state. A far cry from the low-wage job focused “voc-tech” programs still found in some U.S. high schools, the Swiss place students in [apprenticeships](#) in high-tech, health care, engineering, and other advanced industries.

After completing compulsory lower secondary school (akin to middle school in the U.S.), 15- or 16-year-old Swiss students choose from a “practical” choice of more than 300 industry-sponsored apprenticeships or a theoretical path geared to students who know they want to pursue academic professions such as philosophy, psychology, or sociology. Students in the practical track continue to take academic coursework 2-3 days a week while working toward a vocational certification or baccalaureate degree. More than 70 percent of all Swiss students choose the practical path, and many go on to higher education following their apprenticeships.

The Swiss system combines concrete career training with opportunities to change course, making it more nimble than most European career preparation programs. The key features of the Swiss system include:

- **“No dead ends.”** Students who pursue the practical track can opt for college without being penalized.
- **Permeability.** Student academic and applied learning opportunities are mutually reinforced. Secondary and postsecondary systems are tightly coordinated to allow credit transfers and credentialing.
- **Systemic.** The Swiss model is not a set of independent programs that coexist. A national investment of time and funding ensures there is a wide range of opportunities to meet student and industry needs. There are also support structures for students and their families to navigate opportunities, find the right fit, and have successful experiences.
- **Industry-led.** Switzerland’s government does not try to predict what skills industry needs and it does not try to provide all of the training associated with those skills. Industry partners, which have much to gain from a ready pipeline of talent, are full partners in setting competency targets and providing training to meet them.
- **Investment in research and development.** There is major investment in evidence building in the Swiss system. A partnership with [CEMETS \(Center on the Economics and Management of Education and Training Systems\)](#), run by Dr. Ursula Renold, trains scholars and education reform practitioners and supports ongoing research and learning to inform the Swiss career readiness system.

States coordinate requirements at the secondary and postsecondary level

The state of Colorado has recently attempted to adopt and adapt the Swiss model by creating a statewide set of industry partnerships and apprenticeships. Many other states are considering components of Colorado’s model. However, at this early stage, there are several differences between Colorado and the Swiss model. Most notably,

the apprentice programs in Colorado are layered on top of the current four-year high school and higher education model. Early participants report difficulty managing multiple requirements: high school coursework, sports and extracurriculars, and employer apprenticeships.

In the long run, it is likely that states like Colorado will have to consider a **coordinated set of credentials and credits** that start in 9th grade. By shifting to a system of skill-based competencies and “stackable” credentials, students can earn industry-aligned credits in secondary education that can be applied toward higher education degrees. ExcelinEd offers an excellent playbook for policymakers, including prioritizing policies to promote quality CTE coursework.⁹ The authors caution, however, that while a few states, like Florida, have been able to create agreements across K-12 and higher education, these agreements took years to negotiate.

The blurring of secondary and postsecondary education has already begun through **dual enrollment programs**, which give students access to college-level coursework and credit before they graduate from high school. However, while dual enrollment succeeds in providing students with exposure to higher education, which has a positive impact on student motivation, these programs typically focus on helping students fulfill basic requirements, like entry-level English or math. The potential of extending dual enrollment into other types of courses and curriculum, however, would require funds to follow the student, which existing school districts and schools would likely resist, as has been seen in Florida.¹⁰

Systemic solutions, not add-on programs, are necessary

Any career pathway has to begin in school. Hanushek and Woessmann recently wrote that we should not delude ourselves into thinking that we can introduce work-based learning models, like apprenticeships, to substitute for failing K-12 systems.¹¹ If we become enamored with add-on programs that fail to address the underlying weaknesses and inequalities in K-12 education, students will not have better opportunities than they already have.

Add-on programs that fail to address the underlying weaknesses and inequalities in K-12 education will not give students better opportunities.

The need for systemic reform in K-12 education is more urgent than ever, but it remains a very large ocean to boil. How might we create more effective pathways for students? Three examples offer a look at how we might begin to answer that question.

- The Cleveland Metropolitan School District (CMSD) helps community teams, made up of local families and businesses, design new K-8 and high school models that align with emerging career opportunities and neighborhood assets. Thus far, the district has redesigned four high schools, two that are tech-focused to align with nearby manufacturing and tech companies—one with an **aerospace and maritime focus**, and one focused on **life sciences** in partnership with the Cleveland Metroparks Zoo. These models are intended to prepare students for high-growth, high-wage careers in the region by aligning their concentrations with regional economic trends.

- San Antonio is developing a slate of open-enrollment magnet schools with specific career and technical foci. [Fox Tech High School](#) offers law and health profession tracks, with curricula that suitably prepares students for either admission to a four-year college or for a career directly out of high school. [CAST Tech](#) is a new school that engages with local companies to help develop IT and digital media curricula. Industry partners teach classes, providing real-life problems for students to solve. The school has a flexible schedule to allow students time to pursue internships and job shadowing. Students at both schools can take courses to graduate from high school with an associate’s degree or industry certification.
- States, districts, and individual schools—district and charter—also are starting to develop schools that are based on student interests and skills and paced according to student mastery.¹² One such school is [Boston Day and Evening Academy](#), a charter school that offers 11-week curriculum modules rather than yearlong courses, combined with individualized student planning and extensive social-emotional supports. The school is aimed at disengaged students who have dropped out of school or are at risk of dropping out. According to the school’s own analysis, about 95 percent of the school’s 400 students graduate with post-high school plans.

Guidelines for Reinventing the P–16 Continuum

All of the examples above seek to alter the current 4+4 continuum in a significant way. Moreover, beyond innovative new CTE models, other experiments and initiatives under way also are challenging the traditional 4+4 model, including early college high schools, secondary apprenticeship programs, and competency-based school and district models. What has been lacking thus far, however, is any attempt to integrate initiatives into a comprehensive policy framework that can drive the evolution of a more integrated P–16 model. We also lack a set of guiding criteria to assess the potential benefits of the experiments that are now underway. Without that, there is real danger of faddism, unintended consequences, and unfulfilled promises.

We propose three guidelines that could help policymakers, districts, and charter leaders move toward an integrated system and evaluate changes to the P–16 continuum: embrace decentralization, look to new instructional models, and pursue alternative funding schemes.

Look to new instructional models

New instructional models offer one potential way of overcoming resistance to change and improving cooperation between the K–12 and postsecondary education communities. These might be school, district, charter network, private school, or homeschool cooperatives that merge high school, college, and even online curricula into an integrated and rigorous career *and* college prep program, with customized dual enrollment and apprenticeship opportunities and appropriate social-emotional supports for students. In such a system, funding would have to follow the students, accountability systems would have to be redesigned, and schools would have to curate a rich set of opportunities for students. Given the complexity of this endeavor, not every school would want to take on this challenge, but many eventually would if startup funds, supports, and early success stories were available.

Another alternative could be European-style high schools that only focus on core academic and social-emotional learning. The time and money saved from not offering extracurricular activities and electives could be used to fund customized internships, service learning, and other life and career readiness skills. Some private and charter microschoools are already experimenting with this model. Not every school need follow it (some students will always prefer a comprehensive high school). But stronger supports for new models like these can only speed the pace of learning, evolution, and performance improvement.

Even within the comprehensive high school model, what if senior year were focused on career and personal exploration? Students from wealthy families sometimes take a gap year to work, travel, or volunteer between high school and college. What if seniors of all income levels who demonstrate proficiency in college and career-readiness skills could use 12th grade to start college early or do a full-time apprenticeship or career exploration project.

Embrace decentralization and networks to promote innovation

It is difficult to accurately predict the future needs of a system as complex as our society. A safe bet is that we must prepare students for rapid and continuous change—but determining which types of jobs will or won't exist in the rapidly evolving future is much more difficult. New approaches must embrace rather than avoid uncertainty by developing students' adaptability and lifetime learning skills. It would be a mistake to create a new system as rigid as the 4+4 model we need to replace.

This guiding premise should have a great impact on determining which models to invest in and how to pursue investments. Take K-12 apprenticeships as an example. Hanushek and colleagues have smartly raised the question of whether the push to replicate European apprenticeship programs risks investing too much in an outdated model of intense preparation for a single lifelong career.¹³ The authors find that while short-term payoffs from apprentice models are high in Europe, the long-term payoffs are low in today's rapidly changing economy because there is no lifetime learning component. We also have to recognize that the realities of U.S. public education are different from most other countries: we have no national education system, and our highly decentralized system is generally resistant to change. Dramatic structural shifts that threaten long-standing educational institutions and interests will be far harder to implement here than in more centralized systems. It therefore seems likely that change will happen only if and when the U.S. business community becomes strongly engaged in these changes, via organizations like [CareerWise Colorado](#), and we use and expand the existing flexibilities in education, such as public charter schools, to promote more innovations in how schools promote career readiness.

Pursue alternative funding schemes

Changes in current funding models will likely be a key component of substantial changes to the 4+4 model. For example, former Senator Mike Johnston, a candidate for governor of Colorado, has proposed a lifetime learning credit to facilitate the ongoing upgrade of skills and competencies needed over the course of a career.

Another example of a new funding approach is mandating that school districts pay for their students to take dual enrollment courses at local colleges (and in some cases high-quality online courses such as those offered by Arizona State University). Education savings accounts could also be used to give parents more choice over

participation in dual enrollment and accredited employer apprenticeships. This would enable students to opt out of some high school courses and use the funds to obtain certified competencies geared toward their desired career pathway. (See [Travis Pillow and Paul Hill's essay on funding](#) for more on how this could be done well.)

Charter school laws and startup funding could be adjusted to incentivize more new schools to provide innovative career readiness and higher education opportunities. But laws would have to be adjusted to allow funding now tied up in higher education to be used for these purposes.

In sum, there are many creative ways that resources could be reallocated if high school as we know it ended after the 9th or 10th grade so that students can pursue more individualized pathways. A critical question, embedded throughout this essay, is whether all students will have the same opportunity to access new high-paying career pathways and whether we can ensure that less advantaged students are not relegated to low-level pathways, as the current CTE system has done in the past. We believe there are many ways to ensure that every student has the opportunity to develop individual interests, talents, networks, and skills in a pathway-oriented system.

Information systems and supports must be provided to help under-resourced families and students navigate their options. Strong accountability systems must be designed to ensure that every student has foundational or gateway skills by age 16, and that career pathways are effective at creating new possibilities for upward mobility. There are risks, but holding to the current system is inherently unequal and unworkable.

There are many ways to ensure that every student has the opportunity to develop individual interests, talents, networks, and skills in a pathway-oriented system. There are risks, but holding to the current system is inherently unequal and unworkable.

Conclusion: Leadership Required

Well-established American institutions and traditions, like comprehensive four-year high schools, are not easily reimaged, but they must be. Can traditional high school schedules flex to free up student time for applied learning? Can a more efficient funding model allow money to follow students to a range of activities and providers? Can higher education adapt entrance requirements to allow for skill-based training in K-12? What are effective ways to engage the business community, and how much ownership do they need for these efforts to be successful? What new information systems and parent support mechanisms are needed, and who will provide these functions?

These are just a few examples of the seismic shifts that will be needed. Realistically, any of these approaches will likely result in tensions that cannot be overcome without strong leadership and political savvy from governors, state education chiefs, and the federal government.

Despite these challenges, states, districts, and schools are already headed in this direction. There is momentum toward rethinking CTE and providing work-based and dual enrollment opportunities for students. There surely isn't one best option among the ones described in this essay, but failing to fundamentally restructure a system that was built for a different set of priorities is a recipe for failure. And failure has significant implications for America's future.

Endnotes

1. Meta Brown et. al., *Measuring Student Debt and Its Performance, Staff Report No. 668* (New York City, NY: Federal Reserve Bank of New York, 2014).
2. Drew DeSilver, “For most U.S. workers, real wages have barely budged in decades,” Fact Tank, The Pew Research Center, August 7, 2018.
3. Richard Arum and Josipa Roksa, *Academically Adrift: Limited Learning on College Campuses* (Chicago, IL: University of Chicago Press, 2011).
4. Yi Xue and Richard C. Larson, “STEM crisis or STEM surplus? Yes and yes,” Monthly Labor Review, U.S. Bureau of Labor Statistics, May 2015.
5. See ConnectEd, The California Center for College and Career et al., *Career Practicum: A Work-Based Learning Strategy* (Berkeley, CA: ConnectEd, The California Center for College and Career, 2011); Sarah Ayres Steinberg and Ethan Gurwitz, *Innovations in Apprenticeship 5 Case Studies That Illustrate the Promise of Apprenticeship in the United States* (Washington, D.C.: Center for American Progress, 2014); American Youth Policy Forum, *Building Postsecondary Pathways for Opportunity Youth* (Washington, D.C.: American Policy Youth Forum, 2015); Sandra Staklis and Steven Klein (MPR Associates, Inc.), *Technical Skill Attainment and Post-Program Outcomes: An Analysis of Pennsylvania Secondary Career and Technical Education Graduates* (Atlanta, GA: National Research Center for Career and Technical Education, 2010); Shaun M. Dougherty, *Career and Technical Education in High School: Does It Improve Student Outcomes?* (Washington, D.C.: Thomas B. Fordham Institute, 2016).
6. Mary Visher and David Stern, *New Pathways to Careers and College: Examples, Evidence, and Prospects* (New York, NY: MDRC, April 2015).
7. Louisa Treskon, *What Works for Disconnected Young People: A Scan of the Evidence* (New York, NY: MDRC, February 2016).
8. Anthony P. Carnevale, Tamara Jayasundera, and Artem Gulish, *America’s Divided Recovery: College Haves and Have-Nots* (Washington, D.C.: Georgetown University Center on Education and the Workforce, 2016).
9. Quentin Suffren and Danielle Mezera, *Putting Career and Technical Education to Work for Students* (Tallahassee, FL: ExcelinEd, 2017).
10. Jeffrey S. Solocheck, “School districts, PHCC at odds over dual enrollment funding,” *Tampa Bay Times*, October 13, 2018; Leslie Postal, “Private high schools will get free dual enrollment classes, and state colleges worry about the costs,” *Orlando Sentinel*, April 6, 2018.
11. Eric A. Hanushek and Ludger Woessmann, “Apprenticeship programs in a changing economic world,” *Brown Center Chalkboard* (blog), Brookings Institution, June 28, 2018.
12. Mary Ryerse, Janice Walton, and Tom Vander Ark, “Model Schools, Districts, Networks and States for Competency-Based Education,” *Getting Smart*, December 29, 2017.
13. Eric A. Hanushek et al., “General Education, Vocational Education, and Labor-Market Outcomes over the Life-Cycle,” *Journal of Human Resources* 52, no. 1 (Winter 2017), 49-88.

Beyond the Bell: Leveraging Community Assets for an Expanded Learning System

Betheny Gross

Schools can't do it all. We have known this for a long time, yet we often seem to deny this reality in policy and action. For decades we have piled expectations onto our schools, asking them to develop scholars, citizens, and workers and to provide for the academic, nutritional, social, and developmental needs of children. Schools, as critics are quick to point out, invariably fall short of these expectations.

But that hasn't stopped us from adding still more. Today we look to the future of work and see an urgent need to better develop children's complex reasoning, creativity, and mental agility. We look ahead to a time when our society will be forced to address the causes and consequences of climate change, rising income inequality, and aging populations and are pressed to provide children with the intellectual and emotional capacity to take on those issues. We look at our children today and see so many of them dealing with the mental and physical effects of trauma brought on by the stress of poverty, addiction in families, and exposure to violence and racism. And we look to our schools to take on all of these issues.

Schools have been working hard to deliver on these needs in important ways. Educators are beginning to engage in discussions about the principles of trauma-informed care and what they mean for the work of schools. Schools have been providing both extracurricular and academic opportunities that engage students in the world outside school in meaningful ways.¹ Schools have also taken up the call to develop students' capacity beyond their academic skills to include pillars of social and emotional learning.

At the end of the day, though, schools must have partners to meet these needs. Medical institutions must lead the way in providing care to students suffering from trauma. No one is better equipped to connect children with their community than community members themselves. Individuals who work in and interact daily with a range of industries and fields are much better positioned to provide students with exposure and mentorship in those areas than teachers, whose experience might be secondhand. Participating in a sports team, band, drill team, theatrical production, or community project offers students more realistic, complex, and rich opportunities to build cooperation, problem solving, perseverance, and a sense of shared goals and accomplishment than any artificial class project can do.

Access to these opportunities is far from straightforward and universal (see [Ashley Jochim's essay on educational equity](#)). Resources and opportunities for support and learning are not evenly spread across cities. Information on these opportunities are rarely coordinated, leaving significant disparity in parents' knowledge of what is available. Programmatic and transportation costs, as well as the logistics of juggling work and shuttling children to activities, force families into difficult tradeoffs or prohibit their children from participating. While the current system of fragmented independent providers seems to work for middle-class children—whose families have the resources, time to search, and many social and professional contacts to build opportunities—the challenge is to broaden access to these networks.

If children's growth, opportunity, and fulfillment depend on the experiences they have outside the bell schedule, we must do two things: find ways to meaningfully integrate out-of-school learning into our vision for education, and remediate the inequality that persists in access to out-of-school learning.

We must do two things: find ways to meaningfully integrate out-of-school learning into our vision for education, and remediate the inequality that persists in access to out-of-school learning.

To date, the field has paid considerable attention to community impact models that provide an intensive wraparound approach. These systems are highly coordinated networks that bring together providers from the education, health, and community spaces to offer integrated support. They seek to overcome interagency conflict and competition by heavily investing in establishing agreements about goals, approaches, and memoranda of understanding about respective contributions and coordination of support. The result is a sturdy partnership agreement, but one that requires tremendous coordination and investment by all participating parties, making them difficult to sustain and replicate. They also ultimately provide limited choice in the approach and combinations of care and opportunity families can access.

What might a more organic—and potentially more agile—structure to coordinate community assets look like? This essay profiles three such initiatives—Remake Learning, CommunityShare, and ReSchool Colorado—and describes how these networks allow communities and families to leverage regional assets through dynamic and agile systems, what they have learned about building such systems, and what questions these relatively young and evolving initiatives are still wrestling with.

Building Networks for Support and Opportunity

In Pittsburgh, the Grable Foundation set its sights on making the city “the best place to be a kid and to raise a kid,” according to the foundation's executive director. With that mission, the foundation helped to launch and continues to invest in [Remake Learning](#), a regionwide network of learning providers, including schools, YMCAs, independent makerspaces (open workshops where children have access to a range of design-and-build tools, such as 3D printers, screen printing machines, and computer-aided drafting software), libraries, museums, and many more. The lean staff at Remake Learning provides a gentle center of gravity for the network, asking members only to commit to a [set of values](#), share information about their organization, and be an open and sharing

partner to other network members when called on. For this modest commitment, organizations can engage in and receive support through coordinated shared learning at whatever level they want, and they are part of an annual showcase of local talent and energy during Remake Learning Days.

In Tucson, educator and photographer Josh Schachter discovered the need for and power of networks while working with English language learners in a local high school. When Schachter and his colleague, Julie Kasper, asked their students to provide a representation of “home,” the students responded with images showing isolation, disconnection, and boredom. In response, Josh and Julie spent the next eight years connecting their students’ passions, goals, and projects with nearly 100 community partners who served as mentors and project collaborators, while building bridges between the students and the broader Tucson community. The social and political capital resulting from these partnerships led to transformational real-world learning opportunities, ranging from the creation of a citywide youth refugee coalition to a student-led Congressional briefing in the U.S. Congress. But this capital, as Schachter came to realize, would evaporate when he left, so he turned his attention to finding a way to reveal, connect, and share the social, intellectual, creative, and cultural capital in a community that was not dependent on a single coordinator.

A survey of teachers revealed that the vast majority want more community connections in their classrooms but need help finding and connecting to community resources. In response, Schachter launched [CommunityShare](#), an initiative through which local citizens offer their talents to teachers for class projects or other learning experiences. The organization aggregates the offers into a searchable online platform that Schachter refers to as a “human library.” CommunityShare applies the principles of crowdsourcing evident in today’s sharing economy—a central platform for connecting and an open invitation to participate.

A survey of teachers revealed that the vast majority want more community connections in their classrooms but need help finding and connecting to community resources.

Today over 600 Tucson community members have profiles on the platform and are committed to providing a minimum of four hours annually to engage with teachers and their students. The teachers, 750 of whom have profiles on the site, can search for partners based on their curricular plans and student interests. Through meaningful engagements with community partners, students experience the real-world application of what they are learning in school, connect with caring adults and resources in their community, explore new passions and career paths, and imagine a future they perhaps never knew existed. Since launching CommunityShare in 2015, community partners have connected with nearly 7,000 students in the Tucson region.

CommunityShare aims to do more than connect students to their community. The organization also hopes to reweave the social fabric and capital of the city by providing network connections among students, educators, and community members across socioeconomic, institutional, racial, and ethnic lines. CommunityShare’s goal is that the personal connections between community members, students, and educators will transform the community members into informed and inspired advocates for a more equitable education system.

In Colorado, leaders at the Donnell-Kay Foundation, frustrated with the pace of improvement for low-income students and students of color in Denver’s schools, turned their attention outside the schools. Here they found what so many other cities have found—opportunities for rich experiences exist, but they tend to be unevenly distributed and difficult to access. Colorado is an outdoor playground, but low-income children are less likely than their affluent peers to stomp around the state’s mountains and trails. The city is rich with museums, libraries, recreational centers, and more, but despite efforts to create affordable access to these resources, many low-income parents don’t know about them or don’t know they can get affordable access.

Donnell-Kay launched [ReSchool](#) to build the structures and systems that will allow parents in Denver and surrounding areas to maximize the community’s assets. Still early in its initiative, ReSchool launched the [Blueprint4SummerCO](#) in 2018, a searchable online guide that aggregates summer activities. Blueprint4Summer was first created for the St. Louis, Missouri, community in 2015 by the Clark-Fox Family Foundation. When Colorado joined the platform, they offered more than 3,300 summer camp opportunities, ranging from half-day to multiweek experiences. Over half of the listed programs were free of charge to participants. ReSchool raised money (including matching funds from summer program providers) to provide scholarships for summer learning; in 2018, almost 200 children received summer learning support.

ReSchool has also launched a Learner Advocate Network (LAN), which provides direct and, for some, longitudinal support to families as they seek out-of-school learning experiences to complement their children’s in-school experiences. ReSchool is currently partnering with two local hospitals, which employ many low-wage workers, to provide LAN support to hospital employees.

Though different from one another, these three initiatives illustrate key principles of the agile learning system surfaced in this collection of essays. The initiatives also reflect some big unanswered questions that must be wrestled with in order to better leverage community assets in these kinds of agile systems.

Creating an Agile System of Community Assets

These three initiatives shine a light on what resources can be offered to children outside of schools. They also show the power of an open invitation, platforms to present opportunities, a responsive touch, and a facilitating hub to bring these resources to families.

An open invitation surfaces dormant energy

Rather than beating the bushes, each of the initiatives started with an open invitation and a low bar for entry to be part of the learning system. It takes less than ten minutes to join Remake Learning’s network, and the requirement is as simple as agreeing to a set of core values to support and engage children equitably in learning and to submit information on your organization. In similar fashion, nearly all talents are valued and accepted into CommunityShare—reaching teachers is as simple as creating a Facebook profile. Partners, as they are called on the platform, include artists, STEM experts, parents, nonprofits, local businesses, government employees,

academics, graduate students, retirees, philanthropists, and others, all of whom offer a spectrum of experiences. ReSchool's Blueprint4SummerCO is open to any organization offering summer learning opportunities and only requires that the organization submit descriptive information on the offered activities. In short, anyone willing to engage can, and at very little cost.

A platform makes the implicit explicit and helps families connect the dots

Each of the programs offers a platform that makes community assets visible to each other and to the community. These platforms provide a venue for individuals and organizations in a community to present themselves, and for others to find them. While these platforms are often online where they can be self-populating and instantly updated, they don't need to be. Well-tended listservs, catalogs, and directories all can serve as platforms.

Tucson's CommunityShare platform, for example, connects individuals—who want to participate in schools but don't know where their unique talents and real-world experiences are most needed—to the teachers, who want community members to engage with students but don't know how to find good sources. Few of the organizations listed on ReSchool's Blueprint4SummerCO platform are new to the Denver area, but for some families, their introduction to the website was the first time they learned of these programs. In Pittsburgh, where the Remake Learning network is designed to serve both the organizations and the community, one member of the network noted that it offers a kind of “proprioception,” or sixth sense, meaning that the presence of the network and knowing it can be accessed at any time means he doesn't have to constantly connect with other organizations separately to know that good work is happening across the city.

A responsive and flexible touch gets everyone what they need

Along with ease of entry, these initiatives offer a wide range of engagement. As Director Sunanna Chand of Remake Learning explains, the network's participation level ranges from 1 to 100. Many members do little more than list their organization in the directory and receive the newsletter. Others seek out support from the Remake Learning team and other network members. Still others eagerly engage in and attend network learning sessions, at times agreeing to host network events and meetings themselves.

Similarly, CommunityShare makes very few demands on its community members who offer their help or the teachers seeking help. In fact, it offers partners eight different ways to support educators, ranging from simply sitting down with a teacher to help them plan out content and curriculum related to their field of expertise, to building a longer-term project with a teacher and helping to implement it. As a result, partners with CommunityShare have a wide range of engagement that matches both teachers' needs and partners' comfort levels.

ReSchool knows that some parents will conduct a few searches on the website and move on, while other parents will seek out deeper, ongoing support—the kind of support their Learner Advocate Network is prepared to provide. Like other organizations profiled in this essay, ReSchool is building a support model with capacity for a range of engagement.

A role for an active hub (or portfolio manager)

Though each of these organizations is built around organic principles, they all recognize the important role they play as hubs for their networks, including identifying gaps and areas of need in the community by determining who is served and what is available, then using their network to fill those gaps. They also see a role in building the constituency for the opportunities available through the network.

Remake Learning launched its initiative with a gap analysis and is using that information to inform the community about pockets of need. Before building the network, it mapped out the Pittsburgh region's makerspaces—facilities equipped with technologies that allow children to create and make projects. This exercise revealed where these spaces were and weren't in the city, giving the organization direction for future investment. Though Remake Learning relies on organic engagement with the network, they have also taken on the issue of equitable access and distribution of opportunity throughout the region, helping to build awareness for community learning where gaps appear in the network.

Likewise, ReSchool knew that the cost of activities can be a tremendous barrier to participating in summer learning. Before launching Blueprint4SummerCO, ReSchool explicitly targeted and engaged local organizations that provided free and low-cost summer programs to make sure they knew about and submitted information to the website. ReSchool continues to keep tabs on the network's coverage and the extent to which it is meeting families' needs by analyzing search data from the Blueprint4Summer platform. Last year, for example, this analysis revealed that while parents search most actively for enrichment activities in sports, outdoor adventures, and the arts, the available activities lean toward the academic.

CommunityShare also tracks which teachers are tapping the network as a way to understand which students in Tucson are getting rich community-connected experiences and where CommunityShare may need to reach out for more educator engagement.

The hubs also build constituents for their networks and community assets. ReSchool actively recruits community learning programs for its platform and has established formal relationships with local employers as a way to reach parents. It also markets Blueprint4SummerCO at numerous events and in schools across the city and offers scholarships to help families pay for summer programs.

Remake Learning and CommunityShare not only actively recruit members to their networks, they also provide professional development to their members, which builds demand for the learning opportunities available through the network. CommunityShare also offers seed grants and artist-in-residence grants to help facilitate the demand for partnerships. As CommunityShare expands to new regions and allows for broad adaptation of the model, its leadership sees staff and strategic regional partners committed to educator outreach as essential components of the model.

Though each of these organizations is built around organic principles, they all recognize the important role they play as hubs for their networks, including identifying gaps and areas of need in the community by determining who is served and what is available, then using their network to fill those gaps.

The Challenges of an Organic Approach

For all their successes, each of these initiatives is still young, and community assets remain relatively fringe elements of formal education systems. Several challenging questions remain, and the answers likely will shape the extent to which these community assets continue to exist on the fringe or become an ongoing and integral part of children's learning.

What is the outcome, and how do we measure it?

The initiatives profiled here aggregate and connect families, learners, and learning opportunities. They do not directly provide learning opportunities and as such face challenges measuring learning outcomes across all these experiences. As CommunityShare's Schachter notes:

Being an open network where you are not the direct service provider but instead weave connections and host a cloud of social capital raises some interesting questions about how you measure impact. When I am teaching a photography workshop I find it much easier to assess students before and after to see if they've learned the language of photography and technical skills. At CommunityShare we are creating a public space for people to connect online and then learn from each other in person, making it much harder to track the learning outcomes directly. Some of the most profound learning experiences have occurred when a community partner works with a classroom and then engages their broader social network on a project, which expands the impact, but it is challenging to track these social capital ripples.

Remake Learning's Chand echoes these sentiments: "It is really hard as a network to have a single learning goal." Every organization in her network has its own approach and goals. Chand's objective as a network leader is to support organizations as they do their work while helping them understand that they are part of a larger community of providers. As she says, "Row your own boat, but let's try to row in the same direction."

If, as these leaders note, the goal is to connect children to a wide range of experiences by interacting with any number of providers who individually identify the learning goals, how do you assign and attribute learning to these initiatives? If the initiative is targeting an entire region of children, how do you collect not only academic progress but also information about social and emotional development for children who may touch down in any number of public and private school systems?

If the initiative is meant to engage the community constructively, are there social and community goals to consider? What are they? How do we observe and measure community-level change? How do we position these community-level goals vis-à-vis the student-level goals? Is it enough to see communities change if we don't measure changes in children's learning?

Remake Learning, CommunityShare, and ReSchool all have a clear theory of action that centers on setting up the conditions for learning, improving availability and access to learning opportunities, and empowering individuals—parents, children, educators, and community members—to access those opportunities. Their current measures of impact relate to the conditions for learning. CommunityShare, for example, measures its impact based on teacher, student, and partner surveys via indicators such as teachers’ and students’ perceptions of student engagement and knowledge of real-world careers; teachers’ shift in pedagogy and willingness to tap a community partner again in the future; and partners’ willingness to continue to work with educators, and how their understanding and perception of schools and education changes. Eventually, CommunityShare would like to measure its impact on social capital across regional geographic and socioeconomic lines as well as measure changes in community partner agency to become advocates for schools and education. ReSchool, at least for now, is identifying its impact through Blueprint4SummerCO website activity and the engagement of parents participating in the Learner Advocate Network. Remake Learning gauges its impact based on the number of participants in the network.

None of these initiatives have identified specific measurable learning goals for children, and it isn’t clear that such goals are even reasonable measures of their impact.

Will a tighter connection to formal learning systems undermine the organic and “big tent” ethic?

Each of these initiatives grew because they put out an open invitation and asked anyone to engage at any level. As such, the big tent includes members of varying capacity and quality. Though these initiatives clearly interact with the formal K–12 systems, to date they remain distinct from them and the demands—and especially the performance demands—that come with being part of a state-funded system.

This distinction offers out-of-school spaces room to innovate. Chand is wary of compromising that distinction. She notes:

I’m not thinking about a future where schools don’t exist. We’re going to have regulatory systems that put pressure on schools and teachers. But in the museum space, for example, they can do anything they want. There is no pressure being placed on what they can do.

Instead of pushing out-of-school learning to be more regulated, Remake Learning is fostering informal connections between school-based educators and out-of-school-based educators to, as Chand explains, “bring structure to the informal and un-structure to the formal.”

Amy Anderson, ReSchool’s executive director, also sees potential in less formal quality assurance strategies. She sees learner advocates who work closely with families and are familiar with learning opportunities outside schools as an important quality filter. Anderson explains:

Parents partner with the Learner Advocate Network to help them figure out the best way to access resources and build their agency to navigate the system, but also as a check and balance. The advocate network can hold some level of quality assurance that the resources that are being spent [on behalf of the child] are going to credible opportunities—though the families are still the ultimate decisionmakers.

In this vision, quality assurance is less formal than the accountability systems we know today, but more focused on individual families and built and supported by the trusting relationship between families and their Learner Advocate Network.

If the goal is to go beyond informal cross-fertilization toward things like stackable credentials that allow students some sort of credit for out-of-school learning that they can use in the formal system, the calls for quality assurance will be inevitable. The question is, can (and how can) these initiatives maintain the organic and open nature of engagement while paying attention to quality?

Ensuring equal access in systems founded on opt-in supply and demand

In each of these initiatives, those supplying learning opportunities and those demanding learning opportunities (families) opt in to experiences. But if the community assets are to chip away at the inequality of opportunity rampant in our system today, we must find ways to ensure equal access to these out-of-school opportunities, possibly holding systems to account for equal access outcomes.

Each of these initiatives has found value in taking on the role of an “active hub,” scanning their networks for gaps and reaching out to fill those gaps. In some cases this has meant seeking out new members to provide a richer diversity in the network. In other cases it has meant finding providers in underserved areas. These supply-side efforts have made important strides in improving access. For example, knowing that many families would require low-cost summer options, ReSchool’s Blueprint4SummerCO team actively sought and recruited free and low-cost providers to list in its platform. More than half of the summer learning opportunities listed on the website are free to participants.

These organizations have also invested in the demand side of the equation. Remake Learning Days is an annual citywide event where network participants showcase their programs, generating enthusiasm for children and families currently involved with the organizations and inviting new families to see and sample the learning opportunities. ReSchool sends representatives to any event that involves parents to engage them in conversations about summer learning and to market the Blueprint4SummerCO tool. ReSchool also has raised funding to provide scholarship resources for families seeking summer learning opportunities and negotiated the entry of the child-focused transportation provider [HopSkipDrive](#) into the Denver market in an effort to reduce two key barriers to access for low-income families—money and transportation. ReSchool also targets local hospitals, which employ a large number of low-wage service sector workers, for its early pilots of the Learner Advocate Network. Its short-term goal is to build the agency of families who work with the advocate network. In the long term, ReSchool

hopes that parents who have worked with advocates can provide that same kind of support to their family and friends, exponentially expanding the capacity of families to build their children's learning experiences.

These efforts all try to increase the supply and demand of learning opportunities, but in what remains a fundamentally opt-in arrangement for both supply and demand, these organizations acknowledge that their efforts still fall short of addressing the access challenges of their cities' most isolated families. If these out-of-school learning opportunities become more essential rather than extra, but remain opt-in experiences (as is likely necessary to allow for personalization), the field will need to wrestle with these questions: Can there be accountability for equal access in an opt-in system? If so, who should be held accountable and how?

Can there be accountability for equal access in an opt-in system? If so, who should be held accountable and how?

Creating coherence in the unbundled experience

One advantage of the highly coordinated and structured wraparound community model is that great care is taken to ensure that there is a comprehensive and coherent bundle of resources likely to be needed in a community. Though parents may have limited choice in the approaches offered in the wraparound network, tapping a range of academic, health, and social services requires far less individual navigation than in more open and loosely coordinated networks.

Currently, the three initiatives discussed in this essay focus on learning opportunities. Though their models could—and may in time—incorporate more types of resources, including those from the healthcare sector, for now parents must access that support from other networks. The three initiatives profiled here also rely on individual navigation and bundling. Families still must seek out and pull together the learning opportunities that make sense for them. Teachers still must develop a curriculum and reach out to community partners to find a match for their plans.

In different ways, however, these organizations are taking on the navigation challenge. ReSchool's Learner Advocate Network provides parents with one-on-one support for building an out-of-school learning plan for their children. Its goal is to not only build the capacity of individuals who participate in the network, but also to have this individual capacity become a community resource through parents' social networks.

CommunityShare is improving the functionality of its online platform to enable teachers and partners to post proposed projects and then automatically recommend partners whose profiles seem like a good match for the project. This feature would relieve teachers of some of the search and navigation burden. CommunityShare is also developing a resource guide of strategies and tools to support schools and regions in building a culture of community-engaged learning.

How to sustain: What is the business model?

Each of these organizations is lean but not without cost. To date, philanthropy has provided the resources needed to launch, pilot, and grow these initiatives. Indeed, networking community assets may need to become a coordinated and central initiative for local philanthropy and business youth initiatives. But at some point, these initiatives must

find a sustainable model. Shifting the costs to the users (families, teachers, schools, community providers) could compromise the initiatives' underlying goals. ReSchool is currently taking steps toward sustainability. The two employers partnering with ReSchool to give their employees access to Learner Advocate Network advocates are paying for this support. CommunityShare is exploring license fees for regional adoption of its platform, as well as technical support around implementation. But is there an argument for public funding? If so, what would the mechanism be?

Conclusion

To understand why it is worth taking up these challenging questions, look no further than the ongoing recovery of education in New Orleans, which shows how limiting a schools-only focus can be. Since the city's devastating floods following Hurricane Katrina in 2005, New Orleans has invested a tremendous amount of money and innovative capital remaking the city's public schools. Today, students are achieving academic proficiency, graduating, and going to college at rates well above pre-Katrina rates.² But progress is slowing and it is increasingly clear that meeting the developmental needs of New Orleans children—40 percent of whom live in poverty³ and show signs of post-traumatic stress disorder at three times the national rate due to a variety of social conditions⁴—will require the system to look beyond schools for solutions. Children dealing with the most serious effects of trauma require clinical intervention and support from mental health and social services. These engagements are coming online in New Orleans. All children in the city, however, would benefit from exposure to a broader range of experiences and engagement with and support from individuals across their communities.

The gains that New Orleans made were, in part, the result of a radical restructuring of the entire school system. Doing better in New Orleans and elsewhere will likely require equally radical rethinking of how to connect students and schools to supports and learning experiences in their communities and beyond. As Lauren Fine, ReSchool's first Learner Advocate, notes:

“We seem to want schools to solve all of the problems for kids, but there are these other organizations that can be part of the solution. We'd be better off if we thought about a network of support.”

Remake Learning, CommunityShare, and ReSchool are providing an agile infrastructure for just such a network. Along the way, they are finding that some simple principles of open platforms, flexible engagement, and some judicious coordination can amplify the assets and talent already in communities. To meet more intense needs of children will likely require more formal networks between schools, families, and providers than these organizations can provide. But these organizations' pioneering efforts (and those working in similar veins around the country) have meant that more children and families are finding their way to the experiences they need and want.

Endnotes

1. Betheny Gross et al., *Are City Schools Becoming Monolithic? Analyzing the Diversity of Options in Denver, New Orleans, and Washington, D.C.* (Seattle, WA: Center on Reinventing Public Education, 2017).
2. Douglas N. Harris and Matthew F. Larsen, *The Effects of the New Orleans Post-Katrina Market-Based School Reforms on Student Achievement, High School Graduation, and College Outcomes* (New Orleans, LA: Education Research Alliance for New Orleans, 2018).
3. Vicki Mack, *New Orleans Kids, Working Parents, and Poverty* (New Orleans, LA: The Data Center, 2015). Poverty statistics are for 2013 and based on an analysis of the 2013 Community Survey 1 Year Estimates from the U.S. Census Bureau.
4. Institute of Women and Ethnic Studies, *Emotional Wellness and Exposure to Violence: Data from New Orleans Youth Age 11-15* (New Orleans, LA: Institute of Women and Ethnic Studies, 2015).

The Uncertain Future of Teaching

Michael DeArmond, Christine Campbell, and Paul Hill

Platitudes about lifelong learning are hardly new in education, but they seem especially urgent today. As [Thomas Friedman writes](#), “When the pace of change gets this fast, the only way to retain a lifelong working capacity is to engage in lifelong learning.” A rapidly changing future has implications not just for learners. What might it mean for who teaches what and how?

We won’t fully know the answer to this question until schools, districts, professional networks, colleges of education, and other institutions develop and test new approaches to training, instruction, and employment. But in the meantime, emerging ideas and clues from today’s innovators suggest that major changes are in the offing for teachers—particularly when it comes to what teachers need to know, and how they work together.

New Areas of Teacher Expertise: Soft Skills and Personalization

The authors of CRPE’s 25th anniversary collection of essays and other futurists argue that teachers must do more than prepare students academically in the coming decades. This essay highlights two additional areas of teacher expertise (beyond academics) that may become increasingly important. First, insights into the future suggest that teachers will need to understand how to build “soft skills” that prepare students to continually learn and collaborate with others (as suggested by Friedman). Second, our essays suggest teachers will need to understand how to provide students with more personalized instruction, a direction that reflects both broader social trends toward customization and developments in the science of learning.¹

Like “lifelong learning,” soft skills, and personalization are not new ideas in education, but anticipated changes in the future put a finer point on their importance. Soft skills associated with independent, self-directed learning now seem particularly relevant for students to drive their own learning both in and out of school.² Accordingly, teachers will need to know more about helping students learn to track and manage their own thinking (metacognition) and more about helping students develop, as Linda Nilson writes, an “awareness of and control over one’s emotions, motivations, behavior, and environment as related to learning.” In other words, a future that values lifelong learning demands that teachers know more about helping students think about their thinking but also develop better self-discipline, time management skills, and the like.³ Of course, many teachers already do both of these things; but it is also the case that teaching self-directed learners is not central to the training many teachers currently receive.

Besides self-directed learning, our essays highlight personalization as an important characteristic of learning in the future. As we have [argued elsewhere](#), personalized learning is still a vaguely defined concept in education, an umbrella term that means different things to different people. But regardless of the details, the big ideas associated with personalization—the push to give students more freedom and control over their learning, to allow them to move at their own pace, and to let their interests and talents drive what they learn—will clearly multiply and amplify the most complex parts of a

The big ideas associated with personalization will clearly multiply and amplify the most complex parts of a teacher’s job: diagnosing student needs and interests, curating coherent learning activities, and assessing student learning.

teacher’s job: diagnosing student needs and interests, curating coherent learning activities, and assessing student learning. Many teachers may do these things well today, but injecting them with personalization is rare.

Soft skills and personalization are just a sampling of the types of skills teachers may need in the future. Teachers and school leaders must also let go of the mindset that “good teaching” means being in control and commanding students’ attention for an entire class period.⁴ But even if we just focus on learning how to support self-directed learning (how students learn, socio-emotional development, etc.) and personalization, the new demands on teachers are daunting. Few people would have enough capacity to do it all. And so, to make the job more feasible, the teaching profession must find new ways of working as well.

New Ways of Working: Specialization, Teams, and New Sources of Talent

Above all, emerging ideas from the field about how to make teaching more doable challenge the one-teacher, one-classroom model that dominates most schools today.

KnowledgeWorks, a nonprofit organization that advocates for personalized learning, has suggested making personalization more doable by creating a new role called a “learning pathway designer.”⁵ Rather than provide any instruction themselves, the pathway designer would act as a curator, dedicated to planning and designing individual student learning experiences. Examples of teachers-as-instructional-curators are also cropping up in schools. Public Impact and the Christensen Institute recently profiled real-world staffing innovations to support personalization.⁶ The profiles include coordinators who work with teams of teachers to develop learning goals with students, assess student learning, ensure coherence across learning activities, and manage other adults—without providing any instruction themselves.

The key point of these examples is that making teaching more doable may require creating new roles with specialized skills, rather than layering new responsibilities on top of regular teaching positions.

Beyond new roles, the career path for teachers might also need to change. Today, only people willing to attend traditional training programs, teach full time, and enter a relatively flat career stay in teaching. Expanding who works with students and in what ways might make the teaching profession more inviting. Of course, alternative routes to teaching have, with mixed results, existed for a long time. But beyond those alternative routes, schools might do more to enlist people in communities and small business to support student learning in nontraditional ways. Through mentorships, internships, and other out-of-school activities, community members could contribute not only expertise but also diverse experiences that resonate with students in ways that the experiences of the traditional teacher workforce do not.

To take another example, teachers might work part time in many schools or offer virtual courses in technical subjects, like physics or genetics. Other possibilities include enlisting community college faculty to provide up-to-date training in career pathways, or teachers joining together in a collaborative to design and provide a range of courses to students.⁷

New arrangements would not, of course, simply be a matter of making teaching easier in a complex world. These changes would also be a response to the inevitable new learning experiences that go beyond conventional schools: for example, schools that provide some instruction directly but curate other learning experiences, and organizations or individuals who provide supplementary experiences (such as a moot court or musical events) or specialized instruction (such as a graduate student who offers physics classes or paid tutoring).

Viewed either way—making the job more doable or embracing new learning experiences—more adults who do not have a conventional teaching career may be involved in teaching in the future. Regardless of the details, the institutions surrounding teaching and teacher training must change to keep up.

Encouraging Experimentation

What types of training will help teachers develop new areas of expertise? What job arrangements will support new roles or tap new sources of talent? What kinds of support will non-teachers need to provide beneficial educational experiences? Finding answers to these questions will require thoughtful experimentation. Existing practices, however, suggest some possible paths forward as well as the challenges they may present.

For example, advocates of teacher preparation reform have long called for new teachers to get more clinical practice and “learn by doing.” Building from that spirit, training institutions might develop new expertise and roles by partnering with innovative schools on residency-based training experiences. Focused on experimentation and adult learning, these innovation residencies could, like current residency models, expose new teachers to practice, mentorship, and theory by combining a year-long “residency” in an

Expanding who works with students and in what ways might make the teaching profession more inviting. Through mentorships, internships, and other out-of-school activities, community members could contribute not only expertise but also diverse experiences that resonate with students in ways that the experiences of the traditional teacher workforce do not.

innovative school with university-based training. Infusing residency models with practical approaches to experimentation and learning (for example, Plan-Do-Study-Act cycles and other inquiry ideas championed by the [Carnegie Foundation for the Advancement of Teaching](#) and others) could help schools and their partners identify and develop promising new teaching approaches.

A residency model would not, however, work for people providing an educational experience outside of school based on some other profession or skill (e.g., a repair shop for self-driving cars). At this point, it is not clear what kinds of supports these types of people will need, suggesting the need for a robust research and development agenda on how to develop complementary teaching skills for providers of real-world learning experiences.

Rethinking training or developing a research and development agenda would create complex change and coordination challenges. Residency models challenge traditional financial arrangements and introduce cross-organizational coordination problems. Improvement-focused processes, at their most ambitious, require re-missioning district central offices or partnering with external organizations. The R&D function in public education almost needs to be built from scratch. Each change would require collaborative mindsets that are far from traditional practice and call for a host of complementary cultural and organizational changes.

Rethinking teacher roles also challenges status quo employment arrangements, which often constrain flexibility and role differentiation.⁸ The idea of creating a “learning pathway designer” or some other case management function (or a specialist who can work across schools), for example, would require new job descriptions, shifts in credentialing requirements, and more resources. Connecting outside expertise to schools raises similar, but more complicated, issues. It’s unclear what types of incentives would bring outside experts into schools (or encourage them to welcome students in external organizations), let alone what type of training outside experts might need (How much is too little? Too much?), or how to manage quality control. In addition to navigating these challenges, the profession may face a more fundamental problem of how to simultaneously honor lifetime commitments to teaching (whether as a classroom teacher or “learning pathway designer”) while not excluding the nurse, machinist, lawyer, or scientist who wants to teach via mentoring and reflection.

Rethinking the Profession

Many of these ideas sound a long way off from the profession’s current agenda. In the winter and spring of 2018, teachers in five states made headlines by walking off their jobs to protest low salaries and school budget cuts.⁹ In response, Oklahoma passed the state’s first [tax increase since 1992](#) to increase teacher salaries, and Arizona and West Virginia announced plans to boost teacher salaries.¹⁰

Getting more funding should be an encouraging sign for teachers. But funding alone won’t change the characteristics that make the job so difficult. Given the caution and general uncertainty surrounding the future, the most pressing imperative for the teaching profession might be the question of who sets its direction and how change

The future of teaching may be less about knowing the answer and more about rethinking who asks the questions and works to solve emerging problems.

happens. The future of teaching may be less about knowing the answer and more about rethinking who asks the questions and works to solve emerging problems.

Teachers must be engaged not only in advocating for more resources and better working conditions—they also must be engaged in defining the substance of their work. What are the right training experiences? On-the-job learning experiences? Accountability systems? As Jal Mehta argues, bureaucratic approaches to these questions won't produce the results we need.¹¹ In an era of uncertainty, a top-down policy solution will not work everywhere for everyone. For teachers, the most promising future might be one where they have a renewed professional voice, stake, and influence over what happens.

Endnotes

1. See for example Pamela Cantor et al. (2018), "Malleability, plasticity, and individuality: How children learn and develop in context," *Applied Developmental Science* DOI: [10.1080/10888691.2017.1398649](https://doi.org/10.1080/10888691.2017.1398649).
2. For more on self-regulated learning, see Linda Nilson, *Creating Self-Regulated Learners: Strategies to Strengthen Students' Self-Awareness and Learning Skills* (Sterling, VA: Stylus Publishing, 2013). While Nilson writes primarily about higher education, her arguments seem equally applicable to secondary education.
3. Although important for all ages, self-regulatory learning skills might be especially important for elementary students so they are prepared for self-directed and customized learning experiences in secondary school: remediating self-regulation at this level seems like a challenging prospect, one that introduces not just instructional challenges but serious concerns about which students have access to self-directed, deeper learning experiences.
4. Thomas Arnett of the Clayton Christensen Institute suggested this important point during his helpful review of this essay.
5. See Katherine Prince, Andrea Saveri, and Jason Swanson, *Exploring the Future Education Workforce: New Roles for an Expanding Learning Ecosystem* (Cincinnati, OH: KnowledgeWorks, 2015).
6. See Sharon Kebschull Barrett and Thomas Arnett, *Innovative staffing to personalize learning: How new teaching roles and blended learning help students succeed* (Boston, MA: Clayton Christensen Institute, Chapel Hill, NC: Public Impact, 2018).
7. For a recent vision of what non-school-based teacher roles might look like, see Alan Gottlieb et al., *School's Out* (Washington, D.C.: Pioneer Lab at Education Reimagined, 2018).
8. If schools explore more specialized teacher roles, they must pay close attention to unintended consequences. A [recent study](#), for example, associated elementary school departmentalization (a form of specialization) with decreases in student learning. Although rational on its face, specialization could create transaction costs or hinder healthy adult-child relationships in ways that outweigh its benefits. See Roland G. Fryer Jr., "The 'Pupil' Factory: Specialization and the Production of Human Capital in Schools," *American Economic Review* 108, no. 3 (March 2018), 616-656.
9. Besides demanding more funding, the teachers were, according to some commentators, also asking for more [respect](#) after more than a decade of test-based accountability, teacher quality debates, and criticism of the profession.
10. For example, see "[Behind the teacher strikes that have roiled five states](#)," *Economist*, May 5, 2018; Frederick Hess, "[5 Thoughts on the Teacher Strikes](#)," *Education Next*, April 11, 2018.
11. Jal Mehta, "From Bureaucracy to Profession: Remaking the Educational Sector for the Twenty-First Century," *Harvard Educational Review* 83, no. 3 (2013), 463-488.

Educational Equality in the Future: Risks and Opportunity

Ashley Jochim

Ally and Stacy are typical American high school seniors. Ally leaves her Advanced Placement American government class feeling excited after a stimulating debate over the merits of free speech. After school, she attends her student government club and then meets with her tutor, who is helping her prepare for the SAT. That evening, after completing the work associated with an online college course that she enrolled in, Ally and her parents discuss plans for summer, which include an internship with a local business and a two-week camp for aspiring leaders. She's looking forward to graduation and feels good about where she's headed after consulting with her private college advisor, who helped the family wade through the many options.

Stacy is not so lucky. She leaves her remedial math class feeling bored and defeated—hardly surprising after spending the last 30 minutes working through an online module meant to catch her up. She doesn't have anywhere to go after school, so she heads to the local park with friends. Summer's just around the corner, but she's not looking forward to it. If she doesn't pass her math class, she'll have to go to summer school, otherwise known as “purgatory” to the students who attend. She's worried about what she's going to do after graduation, but the school's guidance counselor is only available once a week and it's impossible to get an appointment.

Ally's and Stacy's stories are typical. They play out all over the United States every day, sometimes even in the same school, and reveal a lot about the growth in educational inequality over the last half century. One student enjoys challenging coursework in school, a wealth of enrichment opportunities outside of school, and a support system, including college-educated parents, that helps her prepare for post-secondary opportunities. The other languishes with disengaging coursework designed to fill academic gaps that emerged years earlier, a dearth of enrichment opportunities, and limited access to guidance or other resources that might allow her to improve her situation—much less pursue a post-secondary education that would allow her to maximize her potential.

For much of American history, public education has been cherished as the engine of upward mobility even as it struggled to deliver on the promise of equal opportunity. While progress has been made, opportunities for public education to bridge the gaps between students and families of different circumstances remain severely compromised and may be getting worse.

Addressing all of the sources of educational inequality illustrated by students like Ally and Stacy will require a broader perspective, widening the lens beyond an exclusive focus on the historical issues of funding, segregation, and the achievement gap. This essay considers the changes in American education that are upending traditional notions of equity in education and offers ideas on how policymakers could act to address this issue in the future.

New Challenges to Equity in Education

Expanding access to educational opportunity has defined debates over school reform for nearly a century, including desegregation efforts, finance equalization cases, and proposals to expand school choice. Despite notable progress in some areas, opportunity is more stratified than ever along the lines of race and class.

While the issues of racial and income-based segregation, inadequate spending, and gaps in achievement continue to define educational inequality, they fail to capture broader societal shifts that are changing the ways we think about youth development. These include increased household spending on out-of-school learning experiences, particularly among wealthy families; the growing complexity of post-secondary educational opportunities; and the importance of nonachievement-based educational outcomes. These shifts highlight sources of educational inequality that, to date, policy has largely failed to address—and at times actively undermined—and suggest new ways for improving opportunity for America’s most vulnerable children.

The growth in out-of-school learning experiences

Two decades of school reform have sought to address educational inequality by “fixing” schools. And yet, students increasingly don’t rely on traditional K–12 schools to prepare them for success in life. Wealthy families are investing growing amounts of time and money into the education of their children, a phenomenon Garey and Valerie Ramey deem “the rug rat race.”¹ While all families spend more time with their children than in decades past, college-educated parents have made pronounced investments in providing enriching out-of-school experiences for their children. According to a 2015 survey conducted by the Pew Research Center, children of wealthy parents are substantially more likely to have participated in sports, done volunteer work, taken music, dance, or art lessons, and participated in religious instruction or youth groups.² Just 7 percent of low-income children attend summer camp, compared to nearly 40 percent of high-income children. The gap between wealthy and poor families’ expenditures on enrichment activities more than doubled between the 1970s and the mid-2000s.³

Two decades of school reform have sought to address educational inequality by “fixing” schools. And yet, students increasingly don’t rely on traditional K–12 schools to prepare them for success in life.

These challenges don’t just mean fewer “fun” experiences for low-income children. Out-of-school experiences offer important ways for students to develop academic skills like critical thinking and problem solving, as well as social-emotional skills such as persistence and teamwork. These experiences may be especially important for low-income students and students of color, who are less likely to have access to teachers and curricula that develop these skills in school.

The lack of enrichment compounds the disadvantages these students face as it relates to access to other resources that support readiness to learn. Too many students enter the classroom with challenges that cannot be resolved by schools alone, including exposure to trauma and unaddressed basic health care needs. To date, policymakers and educators have sought to address these challenges by investing in wraparound services, which offer a continuum of care within the walls of the school. But such models have proven expensive to deliver and difficult to coordinate, and leave little room for families to customize supports to address their unique needs.

While most considerations of inequality in education focus on low-income students and students of color, students with disabilities also have been profoundly affected by the growth of out-of-school learning experiences. Consider, for example, the search for afterschool programs and summer camps for a student with autism. The private organizations that offer such programs are even less equipped than public schools to make accommodations for students with a disability. The most advantaged parents can rely on their social networks and wallets to secure a meaningful set of experiences for their children. But low-income students and students of color are disproportionately represented among students with disabilities, and are less likely to have access to the resources that would enable them to tap into those experiences.

The Growing Complexity of Postsecondary Educational Opportunities

For decades, success for students exiting high school was clearly defined—admittance to a four-year college. Charter management organizations like KIPP were founded on the premise that K-12 schools can and should be preparing disadvantaged students for a traditional four-year degree. Yet today, in the face of a growing skills gap, weaknesses in the American high school experience, and escalating higher education costs, policymakers are increasingly turning toward a broader array of postsecondary pathways. Such reforms come in various flavors—career and technical education, vocational education, apprenticeships and internships, and dual enrollment programs—but share the goal of enabling more students to find success after high school and become prepared to join the workforce. But if these ideas are to benefit students historically disadvantaged by circumstance, policymakers must provide students with the guidance and support required to navigate their many options and position all students to access the highest-reward pathways.

Career and technical education (CTE) has a troubled history in the United States. As Jim Stone, director of the National Research Center for Career and Technical Education, reports, “The early vocational education was driven by a philosophy of fitting people to their probable destinies. Kids from poor families were tracked off into becoming worker bees. Others were tracked off to go to universities and be the intelligentsia. We would today call that tracking.”⁴

Today’s postsecondary pathways are more likely to be driven by student demand and increasingly involve training in higher-reward career paths like medicine and advanced manufacturing, rather than low-reward career paths like auto mechanics and food service. But we know from families’ experiences choosing schools in “high choice” cities that informational barriers to access and success loom large, especially for the most disadvantaged families.⁵

Evidence suggests that the field is poorly positioned to support students to make the most of expanded postsecondary pathways. Students from disadvantaged backgrounds already struggle to navigate a complex college admissions process with little support. The American School Counselor Association suggests high school counselors should have a caseload of no more than 250 students—a stunningly high number considering the types of support many disadvantaged students require to successfully navigate postsecondary options.⁶ (At KIPP’s Newark Collegiate Academy, one counselor serves just 75 students.) Yet, in many states, the actual ratio of counselors to students is two or three times as large as the recommended caseload. Students from affluent families can of course address these gaps by paying for private services—at a cost of \$12,000 or more for the “base package,” as a recent Atlantic writer noted.⁷ This is to say nothing of the myriad advice, contacts, and experience many affluent, college-educated parents already bring to the table and the financial support they can offer in the form of private tutoring and SAT preparation courses to bolster their children’s success in the admission process.

We know from families’ experiences choosing schools in “high choice” cities that informational barriers to access and success loom large, especially for the most disadvantaged families.

The shifts in the postsecondary education landscape arrive at a time when the high school-to-career continuum faces major equity challenges. We already know that low-income students, students of color, and students with special education needs often enter high school lacking the academic and social-emotional skills to succeed in an educational environment that offers heightened autonomy and expectations. Then there’s the fact that these same students are less likely to attend schools that will prepare them for college and careers. Together, these forces may conspire to steer disadvantaged students into academic pathways that limit their postsecondary education opportunities.

While much of the attention to inequity in postsecondary education has focused on college preparation and access, less advantaged students are also less prepared to join the workforce. Paradoxically, students aged 13 to 17 from low-income families are half as likely to hold a part-time job as their higher-income peers. While many observers agree that expanded access to apprenticeship and internship programs can provide disadvantaged students valuable work and educational experiences, increasing such offerings has been stymied by the expense and lack of funding to support apprenticeship programs. This is particularly the case with programs that allow disadvantaged students to balance the demands of work, school, and life, and to overcome logistical barriers—such as transportation—that may limit their ability to take advantage of on-the-job learning opportunities.

The growing importance of nonachievement-based educational outcomes

There is broad recognition that in an economy driven by technological innovation and a complex social landscape, schools can no longer count on traditional academic preparation to set students up for success later in life. The types of skills that will enable students to succeed in the 21st century are distinct from those routinely emphasized in K–12 education. The federal Every Student Succeeds Act (ESSA) implicitly recognizes this shift with its requirement that assessment of a nonacademic measure of student success be part of state accountability systems.

Although definitions can be difficult to nail down, observers increasingly recognize that education must strive to develop student skill sets that extend beyond traditional academic expectations. For example, in the modern economy students must be able to apply their knowledge through critical thinking, problem solving, creativity, and effective written and verbal communication. Additionally, to succeed in a changing world, students must possess the “soft skills” that enable them to persist, engage in challenging problems, and collaborate with their peers. A substantial and growing body of literature links such outcomes with healthy child development.⁸

The shift away from “achievement only” assessments could be especially beneficial to historically disadvantaged students, who have often borne the brunt of policymakers’ and bureaucrats’ relentless focus on test scores. Low-income students and students of color are more likely to attend schools defined as low-performing under conventional achievement tests and, as a result, more likely to face the unintended consequences of these assessments, such as a narrowing of the curriculum and an increased focus on test preparation. A shift toward broader assessments could counteract these trends and support more enriched learning environments for historically disadvantaged students.

The shift away from “achievement only” assessments could be especially beneficial to historically disadvantaged students, who have often borne the brunt of policymakers’ and bureaucrats’ relentless focus on test scores.

However, a shift away from achievement-based assessments could also muddy the waters by allowing more students to fall through the cracks. Key challenges include the lack of evidence around how best to support the development of soft skills or reliable and valid ways of measuring them. As a result, school- and nonschool-based providers that seek to develop these skills lack methods for assessing their results or addressing gaps in student learning.

In schools that have sought to embrace broader notions of student success, teachers have struggled to establish high academic expectations while also offering authentic learning environments that support the development of nontraditional educational outcomes. While no student is well-served by learning experiences that fail to support the development of skills that extend beyond traditional academic expectations, the implications loom largest for students who have historically struggled in traditional K–12 environments. As Jal Mehta observes, 21st century learning environments offer these students new ways to make school engaging and relevant. Moreover and as described above, these students are also less likely to have access to the out-of-school learning experiences that support the development of nontraditional academic and nonacademic competencies and more likely to enter school with skills gaps that make navigating these learning experiences challenging. Yet few schools have a record of success in supporting students to develop 21st century learning competencies.

Addressing These Challenges Will Require a New Approach

To date, policymakers, researchers, and advocates concerned with educational inequality have focused their reform efforts on two equally intractable sets of reform ideas. One set of ideas has focused on addressing students' access to high-quality schools as defined by traditional achievement tests. This includes efforts to improve teacher quality, increase K-12 education spending, expand parent choice, raise standards, and hold adults accountable for student outcomes. Rejecting the premise that schools can be expected to address the challenges that come with poverty and other forms of disadvantage, a second set of ideas has advocated for fundamental changes to social safety net programs with the aim of increasing family well-being through improved access to housing, health care, and income. While both of these approaches probably have a role to play in improving outcomes for children and leveling the playing field between families of different circumstances, both have proven difficult to operationalize, given the existing policy and political constraints.

Furthermore, changes to the economy and labor markets are likely to disrupt the conventional wisdom about educational equity. Policymakers need more nimble solutions that address the full scope of existing inequality and accommodate the changes that are likely to unfold in the future. These may include:

- Auditing access to out-of-school learning experiences.
- Financially supporting access to nonschool-based educational services.
- Investing in guidance and support to help families navigate their options.
- Tracking access to and success in postsecondary education pathways.
- Developing evidence-based approaches to supporting student success.
- Addressing preparation gaps that challenge student success in high school and beyond.

Audit access to out-of-school learning experiences

A first step to addressing the growth in educational inequality is to ensure our assessments of equity incorporate the full spectrum of learning experiences that students today can benefit from. While cities and towns around the country routinely collect and report data on enrollments in K-12 public schools to support planning around education, very few have sought to understand access to out-of-school learning experiences, including enrichment activities like summer camps, apprenticeships and other opportunities for work, and nonschool-based academic supports. As is true with high-choice cities where charter schools enroll a growing share of students, collecting data on out-of-school learning experiences is impeded by the fact that the field is dominated by a wide range of public, nonprofit, and for-profit organizations, including public recreation centers, community service groups like the YMCA and the United Way, and businesses specializing in recreation, STEM, and the arts. The lack of regulation and oversight has probably helped to support the wide range of options that are available, but it has also meant that data is difficult to collect or act upon.

An audit of out-of-school learning experiences could be broad or narrow in scope. It could start with tracking school-based enrichment programs, grow to assess summer learning opportunities, and eventually incorporate other types of learning experiences like tutoring, SAT preparation, apprenticeships, and college/career counseling. City leaders could track access along dimensions such as cost, location, and accommodations for students with special needs as a starting point for identifying ways to improve access for historically disadvantaged students. As part of a University of Washington “Data Science for Social Good” project, data scientists [mapped access](#) to summer learning opportunities in Denver, Colorado, providing one model for policymakers to consider as they look to assess access to out-of-school learning experiences.

Financially support students’ access to nonschool-based educational services

While additional research is needed to understand the source of inequities in out-of-school learning, cost is likely to be a significant factor. To date, efforts to address cost barriers to out-of-school learning and valuable unpaid work experiences have been limited. For nonprofit providers like the YMCA, scholarships can enable some families to take advantage of out-of-school learning. But because of the diffuse and fragmented nature of these programs, families must submit multiple applications to access learning experiences with different providers. Cities have sought to expand access by directly offering services through community-based service centers (e.g., city recreation centers). While these offer a more inclusive option than privately managed providers, they also have the effect of artificially limiting the options available to families.

For students to have access to a diverse array of out-of-school learning experiences and valuable but unpaid work experience, any financial support offered should be portable. States and cities could create education accounts that families can use to access opportunities outside of traditional K-12 schools. These could function like an education savings account (ESA) but rather than being broadly applicable to any educational experience (including, for example, a private school education), they could be limited to supporting out-of-school learning and other student development services. This also would make such accounts more politically palatable in blue states and cities, since they wouldn’t pose a direct threat to traditional public schools.

For students to have access to a diverse array of out-of-school learning experiences and valuable but unpaid work experience, any financial support offered should be portable.

Invest in guidance and support to help families navigate their options

Any parent who has enrolled their child in summer camp or sought admission to college knows how fraught the process can be. As cities have opened up opportunities for parent choice in traditional and charter K-12 public schools, funders and policymakers have made a concerted effort to invest in supports to help families navigate their options. If our vantage point grows to include out-of-school learning and an expanded array of postsecondary offerings, the landscape becomes even more fragmented, with families struggling to get even basic information on program offerings.

Cities could invest in informational resources that catalogue different types of learning resources (enrichment, summer camps, apprenticeships, etc.) and postsecondary pathways as a starting point to shore up support for families (see [Betheny Gross's essay](#) for examples of informational resources). These resources would enable families to directly compare and contrast different program offerings on the basis of costs, services provided, and other features. But information guides are unlikely to address all the gaps observed in access to these experiences, given that different programs serve different functions, and a set of programs can add up to either a coherent learning agenda or a random collection of activities.

Cities could also consider leveraging some of the resources set aside for funding out-of-school learning to support mentors, counselors, or navigators trained to help families pull different resources together. Models of such services already exist. The nonprofit [EdNavigator](#) provides one-on-one support to families around education. This includes work to help families identify schools that will meet their needs, but also advice about out-of-school learning resources and college admissions. [Treehouse](#) is a nonprofit focused on helping foster children develop an education plan for their future. Specialists work one-on-one with students to create a plan for high school graduation and beyond, connect to resources like tutoring, and address barriers to learning.

These programs are valuable precisely because they are personalized. Each family comes to the table with unique needs and challenges, and support providers can tailor the advice and assistance they offer to each family's circumstances and long-term goals for their child's education.

Support providers can tailor the advice and assistance they offer to each family's circumstances and long-term goals for their child's education.

Complex learners face particular challenges when identifying resources that will support their unique learning needs. Many providers are not required to offer accommodations for students with disabilities, and while specialized programs exist, these provide a limited set of options. Cities could invest in curated information resources and programs for students with special education needs.

Track access to and success in postsecondary education pathways

The expanding array of postsecondary education pathways creates new options for students to engage in higher education and join the workforce. But to ensure that new pathways do not replicate existing inequalities, policymakers must carefully track student access to and success across postsecondary offerings.

Not all postsecondary education pathways are created equal—they vary in the quality of their programming, the types of jobs they prepare students for, and the extent to which students exiting such programs are prepared for rewarding careers. Policymakers should support the collection of data on student access as well as longer-term data on employment and earnings. Not only will such information empower families to evaluate whether a given postsecondary program is preparing students for the workforce, it could position policymakers to identify problems and improve the quality of existing offerings.

Develop evidence-based approaches to supporting student success

There is little question that today's achievement tests provide at best a poor proxy to the types of skills and knowledge that students will need to succeed in life. And yet we lack reliable methods for tracking nonachievement-based student outcomes or evidence-based strategies for supporting the development of a broader array of student outcomes. A starting point to address these challenges lies in building the evidence base around both assessments and interventions.

While growing frustration with “achievement only” accountability systems has led many states to incorporate new measures, such efforts are probably premature, given the current evidence base. Instead, states and localities should encourage smaller-scale efforts to test, measure, and improve nonachievement-based academic and nonacademic outcomes. Tacoma Public Schools in Washington state, for example, launched the Whole Child Initiative in an effort to build students' social-emotional skills and develop learner communities. Participating schools have worked to develop, define, and teach social-emotional skills through implementation of evidence-based interventions like Second Step, Positive Behavioral Interventions and Supports, and Zones of Regulation. Tacoma is one of six urban districts working to develop students' social-emotional skills through investments by the Wallace Foundation.

Address preparation gaps that challenge student success in high school and beyond

To ensure that historically disadvantaged students can fully tap into the expanded array of learning experiences and postsecondary education pathways, it is essential to address the preparation gaps that leave too many of these students ill prepared. Addressing preparation gaps will require a multipronged approach that could include:

- Expanding investments in early childhood, especially birth through age three, when rapid brain development means that interventions can pay considerable dividends.
- Establishing school feeder patterns that develop students' academic and social-emotional skills earlier so they are prepared for the heightened levels of autonomy offered in out-of-school, work-based, and postsecondary opportunities.
- Supporting the adoption of evidence-based approaches to developing students' social-emotional skills.

Unlock a continuum of child development services

Today, most states, cities, and towns around the country host a range of public and nonprofit organizations that offer services related to child development. The problem is that these services are too often uncoordinated, resulting in duplication of effort, administrative waste, and less targeted and effective programming. Imagine if the patchwork of city and nonprofit programs that exist today worked together to align services and create a continuum of supports for healthy child development.

Imagine if the patchwork of city and nonprofit programs that exist today worked together to align services and create a continuum of supports for healthy child development.

Addressing the fragmentation that exists in the field will not be easy. Turf wars and competition for philanthropic support and enrollment are likely to undermine the field's incentive to work together toward common ends. To build goodwill, local leaders might convene key actors and build a shared vision for out-of-school learning and child development services. This would include public, nonprofit, and for-profit organizations with missions related to education, including enrichment providers, after-school programs, organizations offering camps, and college and career counselors. It might also include members of the business community, who could offer aligned internship and apprenticeship opportunities. In the longer term, local communities might work to align the governance and financing of services related to child development. This might include a city commission responsible for making investments in new services, auditing existing services for gaps, and convening actors to support continued alignment.

Conclusion

To be sure, none of these investments are a substitute for strong classroom-based instruction. There is much to be gained from continued work to improve public schools as they currently exist, while they continue to face challenges related to underinvestment, shortages of teacher talent, and weaknesses in curriculum and instructional support.

But a vision for educational equality must address all of the factors that shape students' educational experiences—including access to out-of-school enrichment, preparation for postsecondary education, and domains of learning that are not captured by traditional achievement measures but may be crucial to allowing students to succeed in 21st century learning environments. Wealthy families increasingly use the resources at their disposal to provide these experiences for their children. A truly equitable public education system would ensure these experiences are equally available to everyone, and allow disadvantaged families to exercise the same levels of choice and agency as their more advantaged counterparts.

If people who care about public education do not open themselves up to new ways to address inequality, not only will they give up the chance to break through the political deadlock that has characterized school reform fights, but they also are unlikely to make headway in equalizing opportunity for American students.

Endnotes

1. Garey Ramey and Valerie A. Ramey, *The Rug Rat Race* (Washington, D.C.: The Brookings Institution, 2010).
2. Pew Research Center, *Parenting in America: Outlook, worries, aspirations are strongly linked to financial situation* (Washington, D.C.: Pew Research Center, 2015), 65-73.
3. “Introduction: The American Dream, Then and Now,” in *Whither Opportunity? Rising Inequality, Schools, and Children’s Life Chances*, eds. Greg J. Duncan and Richard J. Murnane (New York, NY: Russell Sage Foundation, 2011) 3-23.
4. Emily Hanford, “[The troubled history of vocational education](#),” *American RadioWorks*, September 9, 2014.
5. Michael DeArmond, Ashley Jochim, and Robin Lake, *Making School Choice Work* (Seattle, WA: Center on Reinventing Public Education, 2014).
6. *State-By-State Student-to-Counselor Ratio Report: 10-Year Trends* (Arlington, VA: National Association for College Admission Counseling; Alexandria, VA: American School Counselor Association, 2018).
7. Matthew Stewart, “[The 9.9 Percent Is the New American Aristocracy](#),” *The Atlantic*, June 2018.
8. K. Brooke Stafford-Brizard, *Building Blocks for Learning: A Framework for Comprehensive Student Development* (New York, NY: Turnaround for Children, 2016).
9. Jal Mehta and Sarah Fine, *In Search of Deeper Learning: The Quest to Remake the American High School* (Cambridge, MA: Harvard University Press, forthcoming).
10. Tricia Maas, Ashley Jochim, and Betheny Gross, *Mind the Gap: Will All Students Benefit from 21st Century Learning?* (Seattle, WA: Center on Reinventing Public Education, 2018).

Local Governance for an Innovating System

Paul Hill

A local public education system built for personalization and rapid adjustment to workforce demands must be open to innovation and make full use of learning opportunities outside of conventional schools. But it can't be so atomized, chaotic, or dominated by irresponsible providers that families are unable to make informed choices for their children. Families need a comprehensible set of options and information about likely results for students, and communities need options that prepare young people for jobs that are likely to exist.

However, the need for some order must not drive out innovation and responsiveness to change. Students must be free to pursue—and providers free to offer—learning experiences that community leaders might not understand or prefer.

How to balance these conflicting needs? This essay sketches an approach to local governance that is consistent with openness to innovation and responsiveness to the demand for knowledge and skills, yet works to preserve informed choice and equity. Not all localities that aspire to nimbleness will adopt the principles described here, but they will likely find that current governance arrangements neither promote nimbleness nor truly protect the interests of children, families, or the community.

Adopting Light-Touch Governance

A nimble system of public education in any locality will need some governance. Mechanisms for matching students with schools and protecting them against negligent providers will depend primarily on information and choice—schools choosing vendors and curating pathways, students choosing among instructional experiences and joining pathways, pathway organizers demanding quality experiences from providers of instruction and hands-on learning, and colleges and universities valuing or disregarding what students learn on some pathways.

Local leadership, whether in the public sector or (most likely) in private-public collaboration, must be able to set priorities, attract the most effective schools and learning providers to operate locally, protect students from fraud and discrimination, and make sure learning providers don't provide false information about the effectiveness of their programs or collude to keep out providers with new ideas.

We have written elsewhere about a “constitutional” system of local public governance, in which entities with oversight responsibility are not empowered to operate any schools or employ any teachers.¹ By not operating schools or employing teachers, local governing bodies (which we call Community Education Councils, or CECs)

would not encounter conflicts of interest. Their sole job would be to ensure that students can choose from a broad enough range of quality learning options to leave school with multiple postsecondary education and career opportunities, and that the community's labor force is widely capable.

In the version we initially formulated, local CECs would not have overseen postsecondary education, career pathways, and adult re-skilling. However, local governance for the adaptive, personalized system described in the other essays in this collection must extend beyond schools that provide all instructional experiences. Local governance must also ensure that students have quality choices among specialized learning experiences, as well as career pathways sponsored by combinations of schools, businesses, higher education institutions, and vendors that operate in many localities. To tap the expertise of employers and entrepreneurs, CECs would include individuals from established businesses, innovative and high-tech companies, higher education, and minority enterprises. These individuals, though appointed, would serve as equals alongside a number of elected public representatives. Our [essay on funding](#) suggests ways the state could create incentives for these previously separate institutions to trade their independence in favor of a more nimble and effective system.

Local governance must ensure that students have quality choices among specialized learning experiences, as well as career pathways sponsored by combinations of schools, businesses, higher education institutions, and vendors that operate in many localities.

A local CEC would have three essential functions: (1) assembling and disbursing funds for each student's personal education fund; (2) monitoring the quality, innovativeness, and responsiveness to economic change of the learning options available to students; and (3) protecting students by ensuring valid information for choices among diverse learning experiences, monitoring equity of student placements, and identifying fraudulent or ineffective schools or learning providers.

The essay on funding also discusses students' personalized education funds, including so-called "back pack funding" that follows students through different learning experiences, and how they can be assembled and managed. The remainder of this essay focuses on the promotive and protective functions of light local governance.

Promoting Options, Innovation, and Responsiveness

Unlike a traditional school board, a CEC would try to represent the community's future needs rather than its current set of learning providers. A CEC would have a budget amounting to a fixed percentage of the annual amount added to students' backpacks, with which it would:

- Assess the overall performance of the local education system.
- Ask whether the current mix of options is preparing individual students and the community as a whole for a demanding future (and whether some students are suffering discrimination or some economic needs are being neglected despite good performance on average).
- Determine whether innovations available elsewhere should be imported or copied.

In any city or metro area, the CEC would develop information on the overall health of K–12 education in the locality—rates of student growth relative to similar localities, overall improvements in student graduation and persistence in school, and health of the overall education labor force (e.g., the numbers of teacher applicants per vacancy, net gains or losses of staff to other localities). To do these things a CEC would either form data-sharing agreements with other localities or cooperate with state-level data collection.

CECs will inevitably be pressured to measure and inspect schools in detail as problems and disputes arise. These pressures also threaten to expand the CEC’s costs and thrust it into the roles of regulator and compliance overseer. As CECs gain experience, some might seek greater insight into local instruction providers through surveys and sampling-based studies. Minimizing such intrusions on school autonomy will depend on providers: Will they voluntarily provide valid information about instructional programs, student experiences, and results? Can providers’ honesty be ensured by occasional audits? For advanced thinking on measurement issues in a nimble education system, see iNACOL’s recent report, *Fit for Purpose: Taking the Long View on Systems Change and Policy to Support Competency Education*.

A CEC would also reach out to local businesses and research institutions to identify missed opportunities or emerging needs. CEC members or staff could also meet with representatives of groups and neighborhoods who think the options available do not meet their children’s needs.

The CEC could then seek to recruit schools or learning providers from elsewhere, or gain access to promising online and experiential learning programs. In this respect, the CEC would encourage innovation and assess new possibilities, but it would not own any learning providers and could not mandate their use. Its role would be to call attention to opportunities and create plausible visions of the future, but it could not force anyone to use an idea. A CEC would identify opportunities for students and alert local schools or nonprofit entities to needs and opportunities.

This aspect of the CEC’s role would be highly consequential for its community’s future. If a CEC were too loyal to existing schools or could not attract quality providers and enlist the participation of quality local businesses and cultural institutions, the local economy would likely suffer. As we suggest in *A Democratic Constitution for Public Education*, local government leaders or state officials could require reconstitution of an ineffective CEC.

Protecting Students' Opportunities and the Public Interest

An education system designed to meet the needs of students and entire communities must address a number of tough questions: What person or institution will be responsible for an individual student's learning? How will results be measured and interpreted? How can measurement be done in ways that inform choices but do not encourage sameness and compliance? What can be done when students don't learn what they were supposed to learn from a particular source or pathway? These are familiar questions that fit under the label of "accountability" in a conventional, centrally managed school system. We avoid that term here, because in this model schools will be independent of, not subordinate to, government. A governance entity like a CEC could provide information and critique, and in some extreme cases disqualify egregious providers, but it could not perform traditional supervisory functions.

In a nimble, personalized education system, local CECs would have important but limited roles in protecting children's opportunities and the public interest. Local governance could ensure conditions that allow learning providers to succeed, help families make informed choices, and make life tough for fraudulent providers. But it could not totally eliminate risk for families, students, and quality providers.

In a nimble, personalized education system, local CECs would have important but limited roles in protecting children's opportunities and the public interest.

Even in the existing public education system, with school boards at least nominally in control and able to issue mandates, questions about student protection and accountability are sharply contested to the point that most states and the federal government have opted to live with risk and ambiguity. Today's schools and teachers can't be held fully responsible for all aspects of student learning, but no other entity is responsible at all. Student achievement testing is under attack, but there is no other method for promptly identifying a student who is not learning so problems can be remedied quickly. Schools are encouraged to pay attention to individual needs, but it is not clear what should be done for students who do not learn how to read, analyze, and compute.

Under these circumstances, the adage "we are all accountable" amounts to saying that students will find out when they enter jobs or higher education whether they learned what they needed. Will that also be the case in a more nimble, personalized system? Our answer is, not necessarily. But improving on a situation where students and their families are essentially on their own will require degrees of clarity and candor (that public education has to this point avoided) while addressing four vital areas:

- Making sure all students, including the disadvantaged, attain core gateway knowledge and skills early so they can then pursue more specialized pathways.
- Making sure career pathways are valid (i.e., lead to the kinds of opportunities promised).
- Making sure students develop civic understanding and soft skills.
- Making accountability the subject of learning and continuous improvement.

CECs would play limited but vital roles in each of these activities.

Making Sure Students Gain Core Knowledge and Skills

The goals of a nimble system of public education are very ambitious, especially when compared to the current system, where the goals are essentially to minimize the number of students who give up before they are awarded a high school diploma. In a nimble, personalized system, every child must learn the basic skills, understandings, and analytical capacities that are gateways to success in any educational or economic endeavor. They should then have opportunities to develop some select skills and understandings to a high degree so they can make a living in a complex modern economy, and they should be able to upgrade their capacities as needed throughout life.

By gateway skills and understandings we mean those that are indispensable for any course of advanced or specialized learning. These gateway skills and performance minima would need to be found empirically: What do individuals who succeed in school and work know and master that individuals who fail to graduate and find rewarding employment don't? Examples could include reading for understanding and inference (versus simple decoding), often introduced around age nine; writing and speaking for clear storytelling and persuasion; mastery of fractions, decimals, and rates and the conversions among them; basic algebra; a basic understanding of the meaning of science and verification; and some understanding of core democratic principles. These must be clearly established through research, working backward from results rather than through negotiation among interest groups.

Students must master these skills as early as possible so they have time to develop more specialized employment and citizenship skills and knowledge. That does not mean that instruction must be narrow or standardized. Some families might choose highly structured schools that focus on core skills and prepare all students on an ambitious timeline; others might choose schools that offer many routes to the same goal or mix and match learning opportunities from diverse sources.³

Because these choices are so consequential, it is essential that parents have a great deal of information about the performance of different approaches to core gateway skills. This would almost certainly require using tests of specific skills and subject matters. These could be designed to assess only an individual student's mastery of a particular gateway skill (e.g., the ability to transform fractions to decimals). Tests could be supplemented by evidence of a student's readiness for more advanced and specialized education and training, and by measuring the number of years it takes a student to master all core skills.

Existing tests for accountability take too much time, happen too often, and cover too many topics too shallowly to assess students' readiness to enter career pathways. Tests required by state government or CECs should be as demanding as necessary to be predictive of students' later ability to use the skills, but no more. State governments would have significant data and analytical capacity advantages in identifying the few core gateway skills required to design brief and focused tests for mastery, and CECs might be required to use assessments provided by their states for this purpose.

CECs could oversee testing, analysis, and security of results to prevent tampering by schools and learning providers. CECs could allow students to take core and gateway tests any time they are ready, but would not require any other form of testing that could be linked to a particular student.

Thus, schools educating younger students would not be consumed by annual test prep and could instead offer diverse enrichment programs and experience-based learning programs. CECs could, however, administer school climate and student safety surveys, and assess the veracity of claims made by learning providers on the basis of tests and other measurements.

Beyond assessment of core gateway skills and some measurements of school climates and safety, could CECs leave everything else to parents and learning providers? This possibility raises a very hard question indeed: What would happen if, despite the parent choosing and the provider delivering as promised, a student did not learn core gateway skills before reaching age 14, or for that matter, 18? Would the student and family just be out of luck? Would public funds be available until the student learned the core gateway skills? If that took several more years, would the student then lose out on opportunities for more advanced and specialized learning premised on those skills?

The most important protective action CECs could take would be to help parents avoid ineffective or fraudulent providers. The box below suggests some ways this could be done and assesses each in terms of whether it would put a community on a slippery slope toward allowing only conventional and “proven” providers that prepare students to succeed in the current, not the future, marketplace for skills. Given this risk, if CECs retain the power to disqualify a given provider, they might subject any such actions to review in court or by a panel of university-based researchers.

Ways Community Education Councils Could Prevent Ineffective Providers

- **Allow only prequalified providers.** Engages government in making judgments and creates opportunities for well-organized vendors to resist new competitors. This remedy would discourage innovation by protecting well-organized vendors from desirable competition.
- **Maintain a list of ineligible providers.** Makes room for innovation of all sorts by sanctioning frauds and bad performers, but only after some students had been demonstrably hurt by them.
- **Pay only for performance.** Creates a harsh environment for all learning providers, who would spend money on a student’s instruction for a whole course or semester yet possibly receive nothing in return. This approach would favor providers with deep pockets (e.g., district-run schools and online vendors supported by large foundations).
- **Limit parents’ choices to schools and thus to options curated by schools.** Schools’ relationships with government would resemble today’s charter schooling, except that each school would be responsible for providing tutoring or catch-up courses for students who did not learn as expected. Schools could be closed or penalized if students failed to learn core gateway skills.

Different localities might experiment with all of these options. Some will likely follow the more conventional approach of disqualifying ineffective providers. However, some localities might experiment with more information-based approaches. These localities should make arrangements to closely monitor results to guarantee that no student wastes many years with little learning to show for it.

Curating Standard and Unique Pathways

Once students have mastered core gateway skills, a nimble system must support the many different ways students can prepare for higher education, careers, and professions. Without any structure around a particular course, students will not know what sequence of learning experiences is most likely to prepare them for any particular future. The range of options available at any one time can't be infinite or chaotic, so CECs might have the authority to limit the number of new learning providers who enter the locality in any year, and to disqualify or at least negatively review ineffective ones.

Once students have mastered core gateway skills, a nimble system must support the many different ways students can prepare for higher education, careers, and professions.

Pathways could be organized by schools, higher education institutions, regional governments and compacts, industries, professions, or combinations thereof. Some might have little difference from current academic pathways into liberal arts, law, and business. But others might be much more explicitly organized around preparation for computer science, health professions, social service delivery, advanced manufacturing, or food growing and production, as well as for careers or industries especially relevant to particular localities.

Students would probably enter into pathways between ages 12 and 14—as soon as they master core gateway skills. Though a small proportion of students might want to concentrate on a very narrow skill set, most should be urged to keep their options open and pursue several skill sets.⁴

The specialized pathways would all have consequences for admission to continuing education and training programs. Universities, colleges, and vocational schools can specify what exams students must pass and at what level of proficiency. Students aspiring to universities and professions could not pad their resumes by taking exams in less demanding subjects.

Metropolitan areas, states, or interstate compacts could construct comprehensive systems of pathways, related exams, and methods for tracking graduates. As in England, many U.S. students might choose to attend traditional schools and follow pathways curated or managed by those schools. Familiar accountability arrangements would apply: student results affect the future choices parents make, and if student results are consistently bad, government can also intervene (e.g., closure, required improvements).

CECs would provide information on the pathways available, as well as students' completion rates and employment experiences. But student protection will be much more complex and indefinite when no single entity can be held responsible for pathways that include multiple independent learning experiences and diverse providers. Moreover, when some providers donate services (e.g., mentorship or job shadowing in business; internships with cultural institutions, legislatures, or nonprofits), informed parent choice will be the most important accountability mechanism.

Other essays in this series call for “navigators”—personal advisors who help students sort among possible options and choose pathways and learning experiences that advance their goals and have good track records of performance. Without such arrangements, student protection would depend heavily on provider goodwill and commitment to students.

Key officials, such as mayors and heads of chambers of commerce or regional economic development coalitions, might also influence the actions of entities whose promised contributions to key pathways are not working well for students.

Figure 1 organizes the ways in which, under the concept presented here, the interests of students and the public can be protected. In a future where government is not the dominant provider of instruction and diversity of experience and student growth rates are expected, accountability can't be a simple principal-agent relationship between government and schools. Schools, pathways, providers of specific instructional experiences—and even CECs—will be accountable in multiple ways and to multiple parties. But, except in a few situations where states or CECs can deny a negligent or low-performing entity access to public funds, most actors in the system are held accountable via a web of information, reputation, and family or student choice.

FIGURE 1. Accountability Relationships in a Nimble System

Who is accountable and how?	
Entity	Accountable to
Community Education Councils (CEC)	State via eligibility Voters via choice
Schools	CEC via eligibility and information Families via choice
Non-school providers	Schools via expert advice and choice Families via choice CEC via eligibility and information
Pathway networks	Schools via choice and expert advice Navigators via expert advice Families via choice Students via choice CEC via eligibility and information
Navigators	Families via choice Students via choice
Adult re-skilling providers	Students via choice CEC via information

Improving Students' Understanding of Economic, Social, and Civic Relationships

Students must learn how to understand the importance of steady effort, work productively with others, own responsibility for results, respect differences, know how to persuade—rather than insult—those who disagree with them, and know when to stick up for themselves and seek help when abused.⁵ These understandings in turn depend on what Linda Nilson has called “[self-regulated learning](#),” awareness of one’s own thinking processes, biases, and strengths and weaknesses.

Nilson and others have shown how teachers can help students become self-aware. However, with respect to tolerance, effectiveness in group settings, respect for people of color and other ethnicities, and belief in the democratic process, links to instruction are elusive. It is far easier to identify groups that are high or low in these attributes than to link results to school coursework.⁶ Studies that do link educational experience, civic skills, and tolerance typically point to global attributes of schools (e.g., shared values, commitment to exploration of multiple sides of an issue) rather than to specific coursework.⁷

Today, Americans put high priority on outcomes that no one knows for sure how to produce at scale. It is not clear how much education for adult skills can remain the responsibility of schools, or how much choice parents should have in these matters. Civics and transactional skills are subjects of a great deal of thinking and innovation, with new experience-based school curricula (e.g., [Knowledge in Action AP courses in government and politics](#)) and many options for well-designed direct experiences of debate, negotiation, and facing consequences (e.g., debate teams, mock courts, model UN, city simulations), most of which are available from organizations other than the public school system.⁸

At this point it is not clear which course or experience has the greatest short- and long-term effects on civics or related skills, or how best to match students with learning experiences. Nor is it obvious that anything can replace a real educational home base in a particular school or advisory group. This is clearly an area in need of disciplined research, development, demonstration, and testing, which could be possible in a nimble system that requires education about problem-solving, collaboration, and civic values but encourages personalization. Without greater clarity about what works, it is likely that this vital objective of public education will remain an aspiration, not something for which schools or vendors can be held accountable.

CECs should encourage experimentation and track results, both in terms of students’ attitudes and their civic participation. In the long run, it might be possible for CECs to help families choose among schools and learning providers on the basis of adult skills outcomes. However, despite the importance of these skills, any premature mandates about method or student testing would be counterproductive.

We Need Experiments and Learning About the Protective Function

Until now, what's called accountability in public education has focused primarily on government: the tests it will mandate and other information on teachers and students it will keep, how it will determine whether a given school is dangerously ineffective, and what it will do for students who do not learn in the schools provided.

Government has not found a valid or politically sustainable approach to accountability. Instead, the tests by which government assesses schools have come under attack, as have potential remedies linked to student scores (e.g., consequences for individual teachers and school reconstitution, closure, replacement with charter schools). As a result, government hesitates to act even when it has clear evidence that particular schools are not serving students well, and many schools of choice continue operating even when the most knowledgeable parents avoid them.

Can the new approach to governance sketched here ensure that parents always know what they are choosing, and that communities know whether they are developing the workforce needed for the future? To what extent can government protect children from bad choices made by their parents without chilling innovation? Who is responsible to find corrective action if students, whether in small or large numbers, don't learn the core gateway skills and are therefore unprepared for any pathway? How do pathway organizers ensure discipline in the work of paid and unpaid providers? What happens if some pathways prove to be dead ends for students and others become oversubscribed so that opportunities must be rationed?

These questions can't be answered a priori. They must be answered in real time as states and localities press for greater personalization and responsiveness to economic change. A nimble system must be open to experimentation and tolerate some failure, but it ultimately can't leave results, on which the welfare of children and communities depend, to chance.

Endnotes

1. Paul Hill and Ashley Jochim, *A Democratic Constitution for Public Education* (Chicago, IL: University of Chicago Press, 2015).
2. These requirements are daunting in light of America's two recent standard-setting cycles in the late 1980s until about 1996, and around the Common Core from 2009 to about 2015. Standard-setting processes lost sight of the distinction between the absolutely necessary and the nice to have for three reasons: *logrolling* (every academic discipline taught in conventional K-12 could set its own minimum requirements); *aspirational thinking* (standard setters were free to imagine schools could cover and effectively teach more than they realistically can); and *denial* (students could still pursue electives and develop specialized mastery in chosen areas despite many detailed requirements).
3. Because some individuals will master core gateway skills only after they need to use them in a consequential situation, high school students should not be prevented from pursuing career pathways, even if they are weak on some core skills. However, students should know exactly what they must work on, and they should receive frequent updates about the probability of successfully completing a pathway given their current performance level.
4. In England, secondary school students follow a total of five pathways toward mandatory exams in English, mathematics, core science, and a choice of at least two additional options. These are as diverse as Arabic, biology, chemistry, Chinese, design and technology, drama and theatre, economics, French, advanced mathematics, health and social care, geography, German, history, physics, psychology, physical education, and about 75 others. The national Ministry of Education adds or eliminates pathways and exams annually as students' results in universities or career lines become evident and the demands of the economy and student interests change.
5. These goals, or different formulations of them, have been prominent in the literature about "21st century skills" since the 1990s. Current events in America have also highlighted the need for attributes of democratic citizenship, including respect for civil liberties, fair elections, respect for judicial and legislative process, and resistance to propaganda. As a group they have been given different names at different times (e.g., higher-order skills, deeper learning, democratic citizenship) as these outcomes of education gained high priority.
6. It is clear that level of education, income, and residency in urban areas, attending church or synagogue are positive factors, and that low-income and disadvantaged children depend more on schools for basic facts about government than do middle-class students.
7. Civics scholar David Campbell highlights the importance of open curriculum—reliance on learning by exploring unfamiliar ideas—plus discussion and faculty-led fair argument as attributes of schools that make a difference for their students. He and others also consistently show positive effects for independent and parochial schools, and negative effects for schools associated with the Christian right. It is, however, not at all clear how public schools with diverse student populations can support the kind of principled, challenging discussion that can happen within a community of shared values, as in a Jewish day school or one affiliated with a Catholic parish.
8. See, for example, the many independent resources identified by the [Washington State Superintendent of Public Instruction](#).

Funding a Nimble System

Travis Pillow and Paul Hill

In a more nimble public education system, all students would have equitable access to learning opportunities during the summer, outside the normal school day, and beyond the school walls. Students would also have access to these learning opportunities, supplemental support, and postsecondary education opportunities later in life. And students from special populations—those who are gifted and low-income, those with disabilities, those who are not native English speakers or who lack stable home environments—would have access to educational programs tailored to their circumstances.

Those ideas are covered in greater depth by other essays in this collection. One policy could help enable all of them: personalized education funding.

Rather than states and local governments allocating funding to specific public schools, students themselves would receive funding based on their needs and circumstances. Students and their parents could direct this money toward their educational needs: basic school attendance, tutoring, therapy, or supplemental learning experiences.

Former Florida Governor Jeb Bush outlined one vision for such a system earlier this year at an event hosted by the American Enterprise Institute. A high school student could pay for a half-day's attendance at a conventional school, come home and take an Advanced Placement class online, and round out the educational experience with an online music course offered by the Juilliard School.

Governor Bush was describing the potential for an “unbundled” education system, a concept theorized by John E. Coons and Stephen D. Sugarman 40 years ago, and which has become much more feasible with the advent of online learning.¹ Technology opens up the possibility of students learning in a one-to-one relationship through a computer-based system, linking to a set of lectures and other presentation materials along with literally thousands of other students, receiving instruction through a mix of technology- and teacher-delivered approaches, or learning through internships, expeditions, and cohort-based discussions.

Private schools, largely free from current regulations restricting teacher certification, class sizes, and mandatory attendance hours, have begun to offer these kinds of experiences to families who can afford to pay for them. Regina Caeli, an online Catholic school, operates “hybrid homeschools” in 12 American cities. These schools provide classes two days a week, and students spend the remaining three days learning at home.² In Fort Pierce, Florida, [St. Andrew's Episcopal Academy](#) curates a mix of in-person learning experiences at surrounding art galleries and research labs, combined with online classes, in-person instruction, and—for some high schoolers—dual enrollment at a nearby community college.

To be available to all students, these kinds of learning experiences should be eligible to receive support from public funds. However, rather than replacing existing school districts, personalized funding can support a public education system capable of delivering a much more diverse array of learning opportunities and responding to the evolving needs of all students, including those with complex learning needs. At the same time, this goal must be reconciled with public accountability and the proposition that there are some things all students should learn over the course of their educational progression.

Personalized funding can support a public education system capable of delivering a much more diverse array of learning opportunities and responding to the evolving needs of all students.

How It Might Work

A personalized funding system for public education might operate something like this. When children become old enough to qualify for a publicly funded education, they would receive evaluations similar to those that school districts are required to perform if they suspect a child may have a disability.³ The evaluation would allow the school system to assess a range of factors that might affect the level of support the child would need to succeed in school, including:

- Disability
- Household income
- Living situation (e.g., is the child in foster care?)
- Language status (does the child speak a language other than English at home?)

Based on those factors and others that a weighted student funding formula might take into account (for example, geographic variances in cost of living), each child would receive a funding allotment. As described in [Paul Hill's essay on governance](#), that funding allotment would be in an account controlled by the local Community Education Council, or CEC. At the parent's or guardian's direction, money could be released from that account to pay for education-related services, such as preschool fees.

Student allocations would include funds currently set aside for specific, noninstructional purposes like facilities construction and maintenance. The same would be true of other capital costs. There should be no special set-aside for schools that lease a great deal of computing equipment, for example. Any school or provider of learning experiences would pay whatever capital costs it encountered using revenue it receives from students who pay for its services.

Even so, it is not obvious that online schools, or other providers without facilities costs, would come to dominate the market. They would likely incur other back-office, technology, or research and development costs. And in an unbundled education system, some families may still simply prefer the bundle. They might be drawn to

conventional or hybrid schools that offer socialization opportunities, a rich mix of courses and extracurricular activities, and a strong identity.

To help guide the use of their funding allotment, parents would select a navigator—an expert or school that would help them identify needs and assemble coherent educational programs (as described in more detail in a later section). The navigator would receive a set percentage of each student’s funding allocation to cover the costs of its own advisory services. The local education agency could similarly deduct an administrative fee to pay for systemwide costs such as transportation and oversight.

Each year they remain eligible for publicly funded education, students would receive funding based on the amount their state would spend to educate them in public schools. Students could receive follow-up evaluations as circumstances, such as household income or the student’s need for disability accommodations, change. After they receive a high school diploma, students could continue using any funds left over in their accounts to pay for college, job training, or other lifelong learning expenses until they reach a prescribed age, perhaps 30.

When it comes time to enroll their children in school, parents could consult friends, consultants, and online information portals about their education options, similar to the enrollment systems that exist in school districts such as New Orleans and Washington, D.C., which allow parents to browse different schools and access information about them.⁴ Such portals would offer information on the wider range of educational providers that parents could pay for with their accounts, such as:

- Services offered
- Pricing
- Academic performance data, where applicable (e.g., student proficiency rates and academic growth measures, high school graduation rates, preschool readiness rates for kindergarten)
- Parent and/or student provider reviews

In Florida, the nonprofit Step Up for Students is piloting [MyScholarShop](#), an online marketplace where parents using the state’s Gardiner Scholarship program can purchase items for their children such as curriculum, technology, and assistive devices. The Florida Department of Education has created a separate [online catalog](#) where students can browse the state’s plethora of online course options, which they can take alongside their courses in brick-and-mortar schools. Systems like these could be combined with district unified enrollment systems to give students a user-friendly way to explore the full range of available providers.

Students would receive funding based on the amount their state would spend to educate them in public schools. After they receive a high school diploma, students could continue using any funds left over in their accounts to pay for college, job training, or other lifelong learning expenses.

Parents could still choose to enroll their children in public schools using their entire annual funding allotment to pay for the full complement of services individual schools offer—from a full day of instruction to extracurricular activities to supplemental tutoring.

Low-income students or students with special needs who receive larger funding allotments under the weighted student funding system would be more likely to have money left over after covering the cost of school enrollment. They could use this funding to pay for supplemental services, such as tutoring or social and emotional support. A student with a physical impairment could spend some of these funds on an aide to help them transition between classes. A student with a language disorder could spend the extra money on speech therapy.

Parents would have a more versatile mechanism to respond to needs that arise during the course of their children's education. For a student who can't see the chalkboard, the most urgent and effective educational intervention might be an [eye exam](#). For a student suffering from trauma, the most effective educational intervention might be access to a mental health counselor. For a young child with cerebral palsy, the most profitable use of educational time and resources may be helping them to walk and develop basic motor skills, but as they grow, their academic abilities are likely to warrant their placement in mainstream classrooms. However, they still might require mobility assistance to navigate the lunch line. For some students, especially those with disabilities, it might make sense to merge their education accounts with other pools of money, such as [iBudget Florida](#), which allows families to purchase a range of services authorized under the state's Home and Community-Based Services Medicaid waiver, giving families more flexibility to integrate educational supports with other medical and social services.

The unbundling of education would give rise to new challenges. What would school accountability look like in a system where a single school may no longer be responsible for a student's entire educational experience, or even for all the instruction a student received in a particular subject during the course of a school year? Who would ensure students attain foundational skills in reading, writing, and math? Who would ensure students learn the basics of history, civics, or science? More broadly, would parents be responsible for assembling a coherent educational program out of a hodgepodge of learning experiences and support services?

Helping Families: A Critical Role for Navigators

A growing array of organizations is springing up to help families find suitable schools for their children or choose learning opportunities that already exist in their communities and supplement what schools provide. For example, ReSchool Colorado is developing [a network of learner advocates](#) who advise parents on enrichment opportunities that are available during breaks and after school. The program is helping students gain equal access to the “shadow education system”: the out-of-school experiences—from camps to work internships to trips to the theater to private preparation for college entrance exams—that can play an important role in every child's learning, and to which the wealthy enjoy disproportionate access.⁵

It's possible to imagine a more comprehensive learner-advocate program that helps parents plot a holistic set of learning goals for their children. These goals can include conventional learning benchmarks, like state academic

standards, as well as goals harder to capture in state accountability systems, like social-emotional objectives, job skills, or proficiency in art, music, or foreign languages. Learner advocates can help parents to identify learning opportunities that will help their children meet these goals and track progress toward achieving them.

Organizations like [EdNavigator](#), or the school choice consultants some wealthy families already employ to help them make choices and understand their rights in decentralized public school systems, may be suited to similar roles.⁶ Parents, with the help of trained learner advocates, could then select the schools and providers that are best-suited to help students achieve their learning goals. There is some evidence that having a dedicated advocate can improve outcomes for students who have fallen off track academically.⁷

This new role of learner advocate may hold the key to accountability in an unbundled education system. Advocates could serve as “mediating organizations,” providing the connective tissue between students and education providers. They would be tasked with ensuring coherence throughout a student’s educational progression, and making sure prescribed student learning benchmarks are achieved.

This new role of learner advocate may hold the key to accountability in an unbundled education system.

School districts, states, or other authorizers could hold mediating organizations accountable for the aggregate performance of students who employ them and codify their right to perform this role in contracts, similar to the arrangements that govern charter schools. The public could have access to information about the aggregate outcomes of students who select different mediating organizations, allowing parents to choose an organization they feel is well-suited to meeting their child’s needs.

Boutique educational consultants and individual learner advocates could serve in this mediating role, but other organizations also may be well-suited to it. In Florida, private scholarship funding organizations that help administer the [Gardiner Scholarship Program](#), a major experiment in personalized funding and the largest education savings account program in the country, also could serve as navigators. Some organizations may choose to specialize by designing tailor-made educational programs for children with autism, for example. Others may choose to serve a broad array of students.

Another set of institutions that could ultimately serve as navigators are schools themselves. Some schools committed to the concept of personalized learning have already stepped into this role. St. Andrew’s Episcopal Academy has learned that the Indian River Lagoon can be an effective biology classroom, and local galleries can serve as art classrooms. The school, in other words, connects students with learning opportunities outside its walls.

This approach has the potential to place schools in a dual role in which they serve as both education providers and as navigators tasked with curating a customized mix of education providers for students. A relevant analogy arises from the world of finance. Regardless of what range of services they provide, a mediating organization—whether a school or a third-party navigator—must be willing to accept an obligation as a fiduciary, contractually bound to act in the best interest of the students they serve in this capacity.

Infrastructure and Oversight

In addition to providing parents information on available providers and their performance, state and local education agencies should develop new forms of oversight, both for mediating organizations and for individual providers. This would include financial, health, and safety audits.

In a system that allows families to spend money on a wide range of therapy, tutoring, technology devices, and curricula, states should set policies defining which of these purchases constitutes a bona fide educational expense. In Florida, scholarship funding organizations vet individual parent expenditures to determine whether they meet parameters outlined in the state's law. For example, a student may need to purchase one iPad to access online curricula, but the purchase of a second device may get flagged. Providers with poor outcomes, negative user reviews, or a history of purchases flagged by auditors could draw greater scrutiny, or ultimately be barred from accepting public funds, as described in this collection's essay on governance and accountability.

School districts could continue functioning as providers, operating schools and offering other a la carte services such as tutoring, therapy, or extracurricular activities while serving as mediating agencies. Or communities could develop CECs, which would simply serve as authorizers of both providers and mediating organizations. Regardless of approach, oversight entities should attend to certain systemic issues: conducting the evaluations that qualify students for specific funding amounts, communicating with mediating organizations to identify gaps in locally available services and developing strategies to make those services available in their community, and assuring that local infrastructure, such as transportation services, are capable of meeting students' diverse needs.

If they identify gaps in the services available in a community, state or local governments or private philanthropists might choose to financially support providers that excel at specific job training or special education functions or that focus on priority areas like elementary reading instruction or advanced math. But these subsidies would have to be temporary, with the expectation that student funds would provide the long-term revenue. Inevitably, public institutions with endowments, valuable buildings, real estate, or strong community reputations would retain some lasting advantages over their upstart competitors.

Meeting the Real Costs

A personalized education system, including all the learning opportunities and community assets described in the other essays in this collection, will almost certainly cost more than the current one, even for students who are of normal school age. Though online resources might cost less than in-person instruction, teachers will need relatively small student loads to permit close individual relationships with students and time to link them to personalized learning options. Providers of

A personalized education system will almost certainly cost more than the current one.

specialized learning experiences other than schools must also be paid, as will sources of social and health services, to resolve barriers to learning on a case-by-case basis. Without practical exemplars, we cannot know exactly how much these will cost, or how much costs will vary from one locality to another. The best examples available—specialized private schools with close student-teacher relationships and the capacity to arrange personalized learning experiences—can cost two to three times as much per pupil as local public schools.⁸

Today, no arrangement provides public financial support for all these possibilities, much less with enough money left over for students to carry additional funds past high school graduation, where they might pay for skills training, postsecondary studies, or other lifelong learning opportunities.

Though volunteer and donated services such as mentoring, tutoring, and internship supervision might be provided free of charge in some cases, communities will vary tremendously on what is available. Private entities, including nonprofits, can be relied on to work pro bono on education only when they are financially solvent and believe the work advances their missions.

It is, however, possible to describe a feasible alternative public funding system that could support a great deal of personalization. It would combine the money traditionally available for K-12 education with funds from other sources.

First, additional funding for younger students could come from existing public programs dedicated to social and youth services.⁹ These funds come from many federal and some state and local sources. Annual federal funding for youth and family services from the departments of Labor, Health and Human Services, Justice, Agriculture, Education and Housing and Urban Development now exceeds the \$16 billion available from Title I, the largest federal program supporting K-12 instruction.¹⁰

Second, older students could receive funds from existing job training programs and state support for postsecondary education.

Third, the system could incorporate funds that states might otherwise set aside for expanded preschool programs, which, while politically popular, have seen mixed effectiveness. Parents would have the option of spending their early-learning allotments to enroll their children in preschool or setting the money aside for later years. Low-income students could receive a boost if they could also reserve their share of federal Head Start funding for this purpose.

Challenges of Financial Transition

Technically, these changes are not difficult to prescribe. But they would be politically difficult to enact. Like all funding reforms, this arrangement would take money away from those who get more than their share under the existing system. It would eliminate the guarantee of public funding for existing schools. It also raises questions about the transition. School systems face long-term cost burdens, from bonds that financed their facilities to

promised retiree benefits. And these costs are financed through revenue, like dedicated capital funding, that would ultimately be placed in student accounts.

Further complicating matters, schools serve other community functions that should be preserved. Their buildings provide communities with playground equipment and athletic facilities. In some cases, schools are built to function as emergency shelters. State and local governments should be thoughtful about preserving these community assets.

It is hard to imagine how incremental changes in the current funding system can be thorough enough to provide the flexibility and transparency needed. Personalized funding can be accomplished all at once either by legislation that completely replaces prior funding arrangements, or by litigation that throws out entire state funding codes and requires their replacement.

Several states have adopted personalized funding arrangements that allow individual students to opt in. School voucher advocates have embraced this idea, known as education savings accounts (ESAs), and have found champions in statehouses from New England to Texas. But only five ESA programs currently operate, and all of them were enacted by Republican-controlled state legislatures.

The fate of a sixth ESA program, in Nevada, may illustrate the political difficulty of this approach. The Silver State created a program that, for the first time, gave every public school student a choice. They could remain enrolled in their current school or they could instead accept a sum of money—beginning at about \$5,200, with slightly higher amounts available for low-income families or children with special needs—to fund customized educational experiences.

However, the state's Supreme Court struck down the funding mechanism, which was approved by a Republican-controlled legislature and governor. While the litigation unfolded, Democrats took control of the legislature during midterm elections.¹¹ Ever since, they have blocked attempts to create a new funding structure that would comply with the court's ruling and allow the ESA program to operate. As a result, one of the nation's most ambitious ESA programs remains in abeyance.¹²

Opponents' objections to the program would be familiar to anyone who has followed debates over school vouchers: it would take funding that otherwise would have gone to public schools and give it to families, where it would pay for private, often religious, education. ESA legislation in states like Iowa, New Hampshire, and Texas has failed for similar reasons.¹³ The early ESA track record does little to dispel these concerns. Initial research on the first states to create ESAs has found that the majority of program funds have been used to pay for private school tuition.¹⁴

Nevada's program was nearly universally available. However, it fell short of truly personalizing education funding in other important ways. The \$5,200 allocations were based on the amount the state would have spent educating a student in public schools. It did not include local funds, including those set aside for capital expenditures.¹⁵

Three alternative approaches may be more viable

The first alternative involves targeting special populations. It is likely no accident that four of the five currently operating ESA programs primarily target students with special needs or other disadvantages. It makes sense to target students whom existing public schools already struggle to educate. This approach has yielded limited political benefits for ESA proponents. For example, the 2014 legislation that created Florida's Gardiner Scholarship program triggered intense partisan debate and multiple constitutional lawsuits. But subsequent legislation expanding and funding the program has consistently received bipartisan support in the state legislature—a rare occurrence in the often-fraught politics of educational choice. However, the Gardiner Scholarship program is funded through a separate line item in the state budget. That means that despite its political popularity, it is unlikely to achieve the scale to serve all eligible students. Incorporating the program into Florida's funding formula, which combines state and local funds, would risk undermining the political popularity it currently enjoys.

A second potential path is currently less traveled. It envisions smaller pools of personalized funding that supplement the services public schools themselves offer. This year, Florida enacted Reading Scholarship Accounts allowing parents whose children attend public schools but did not pass third- or fourth-grade reading exams to apply for grants of \$500. The grants can be used to pay for books, tutoring, and other goods or services that might help students improve their reading results.

In some school systems, existing funding streams could be repurposed along similar lines. For example, the decentralized public school system in New Orleans recently adopted a funding system that provides schools with funding allocations that supplement the base per-pupil funding for students with special needs.¹⁶ If parents had the option of instead placing this supplemental funding—but only the supplemental funding—into education savings accounts, they could choose to use it to pay for supplemental services for their children. This would allow parents to adjust the supports their children receive as their needs evolve. It would also make support services portable, allowing students to choose new schools within New Orleans' decentralized school system while maintaining consistency in other supports, such as occupational therapy, that parents may choose to fund with their accounts.

A third possible change strategy would target specific localities. States could allow districts interested in fostering innovation to apply for waivers from state education regulations and apply for planning grants. These districts would be required to create a level playing field between incumbent schools and innovative new providers. They could adopt fully personalized funding systems and look to create ecosystems of innovative schools and mediating organizations. Some might choose to do this districtwide, while others might start only with students in 8th or 9th grade. Allowing a handful of districts to serve as laboratories would limit political resistance to sweeping, statewide changes. State leaders and other districts would also have a chance to learn from their experiences.¹⁷

Lessons from the Past

The use of parent-directed educational accounts to pay for supplemental services echoes a past effort. The Supplemental Educational Services (SES) program, created under the *No Child Left Behind Act*, allowed parents of children in low-performing schools to obtain supplemental tutoring services from providers of their choice, including private schools. Evaluations of the program's effectiveness yielded mixed verdicts that varied by jurisdiction and provider but saw positive results overall.¹⁸ However, the system also saw its share of problems, ranging from provider ineffectiveness to more egregious cases of fraud.¹⁹

Proponents of personalized education funding should consider how new efforts would improve on past attempts like the SES program. For example, participating parents had little information to vet the effectiveness of supplemental providers. They also did not have access to a wide range of potential alternatives, or access to information about them. Mediating organizations and online information portals would help address those shortcomings.

Smaller programs developed using one of the three strategies outlined above could help put this infrastructure in place. Other developments, such as the creation of the learner profiles envisioned as a centerpiece of personalized learning efforts, could help lay the groundwork for systems that enable students to not only guide their own learning, but also direct the resources that pay for it.

There are several policies states could pursue now that may one day allow them to give parents the ability to direct all of the education funding their children would receive.

There are several policies states could pursue now that may one day allow them to give parents the ability to direct all of the education funding their children would receive. Among them:

- Implement weighted student funding that assigns per-pupil funding amounts based on students' individual needs.
- Identify areas where students can choose between services their schools offer and “back pack funding” that they direct themselves, such as for supplemental services, career education programs, out-of-school enrichment, and special education support.
- Give students access to navigators, learner advocates, or other support resources that can help them set educational goals over time and make guided decisions about how to achieve those goals.
- Create the technological infrastructure that allows parents and students to develop nuanced learning goals and track their own progress.

Each of these endeavors may prove worthy in its own right. Funding reforms can distribute resources more equitably and help schools deal with enrollment fluctuations. Placing more funding in student “backpacks” can create more effective supplemental learning opportunities and facilitate access to programs, like career education, that school districts may struggle to develop on their own. Leveraging out-of-school learning opportunities can enrich students’ experiences. And better information systems that combine learner profiles with information about providers can help all families craft holistic education plans for their children.

Each of these policies could serve as a building block toward an education system in which students have flexibility to shape their learning experiences as they work toward common educational goals. In other words, states can create the infrastructure that may ultimately enable an unbundled education system while improving the bundles they already have in place.

Endnotes

1. John E. Coons and Stephen D. Sugarman, *Education by Choice: The Case for Family Control* (Berkeley, CA: University of California Press, 1979), pp. 181-189.
2. See, for example, Mike McShane, “[Is Hybrid Homeschooling The Wave Of The Future?](#)” *Forbes*, May 21, 2018.
3. See, for example, the legal obligations of states and school districts under [Child Find](#).
4. Betheny Gross, Michael DeArmond, and Patrick Denice, *Common Enrollment, Parents, and School Choice: Early Evidence from Denver and New Orleans* (Seattle, WA: Center on Reinventing Public Education, 2015).
5. See, for example, Mark Bray, *Confronting the Shadow Education System: What Government Policies for what Private Tutoring?* (Paris: UNESCO International Institute for Educational Planning, 2009); Matt Barnum, “[The ‘shadow education system’: How wealthier students benefit from art, music, and theater over the summer while poor kids miss out,](#)” *Chalkbeat*, May 30, 2018.
6. See Mareesa Nicosia, “[Parents at Work: Has EdNavigator Fixed School Engagement by Making It a Job Benefit?](#)” *74 Million*, January 24, 2017; Emma Brown, “[Capitol Hill education consultant helps parents navigate D.C. school choice,](#)” *Washington Post*, February 24, 2013.
7. Russell W. Rumberger et al., *Preventing Drop-Out in Secondary Schools*, NCEE 2017-4028 (Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education, 2017).
8. In 2001 the average inflation-adjusted tuition at private nonsectarian elementary schools in the United States stood at \$22,611; tuition tends to be even higher in high schools. See Richard J. Murnane et al., “[Who Goes to Private School? Long-term enrollment trends by family income,](#)” *Education Next* 18, no. 4 (Fall 2018).
9. Maia Crawford and Rob Houston, *State Payment and Financing Models to Promote Health and Social Service Integration* (Center for Health Care Strategies, Inc., 2015).
10. “[Funding and Support for Programs](#)” in *Community Programs to Promote Youth Development*, eds. Jennifer Appleton Gootman and Jacquelynne S. Eccles (Washington, D.C.: National Academies Press, 2002), 265-296.
11. See Sean Whaley, “[Blue Wave hands Democrats reins of Nevada Legislature,](#)” *Las Vegas Review-Journal*, November 9, 2016.
12. See Colton Lochhead, “[ESA blame game splits Nevada GOP,](#)” *Las Vegas Review-Journal*, June 11, 2017.
13. See Dan Keemahill and Julie Chang, “[How rural lawmakers killed school choice legislation in Texas,](#)” *Austin American-Statesman*, Nov. 8, 2017; and Lola Duffort, “[N.H. House likely kills education savings account bill, citing cost concerns,](#)” *Concord Monitor*, May 3, 2018.
14. Lindsey Burke and Jason Bedrick, *Personalizing Education: How Florida Families Use Education Savings Accounts* (Indianapolis, IN: EdChoice, February 2018).
15. SB 302 set ESA funding at the average amount statewide basic per-pupil support for students with disabilities or family incomes below 185 percent of the federal poverty threshold, and 90 percent of that amount for other students.
16. Robin Lake, *Special Education in New Orleans: Juggling Flexibility, Reinvention, and Accountability in the Nation’s Most Decentralized School System* (Seattle, WA: Center on Reinventing Public Education, January 2015).
17. For more on how this can be done see Paul T. Hill and Ashley Jochim, *A Democratic Constitution for Public Education* (Chicago, IL: University of Chicago Press, 2016), 103-116.
18. RAND Education, *Do Title I School Choice and Supplemental Educational Services Affect Student Achievement?* (Santa Monica, CA: RAND Corporation, 2007).
19. Michael LaForgia, “[Public schools lose millions to crooks and cheaters,](#)” *Tampa Bay Times*, February 9, 2013.

Moving from a Portfolio of Schools to a Portfolio of Student Opportunities

For 25 years the Center on Reinventing Public Education has studied, informed, and refined new ideas for how public education can achieve its promise. We have posited and tested ways to allow families to choose educational settings that fit their needs and give educators the autonomy to create them, without losing sight of the public interest in schooling. We have focused on meeting the diverse needs of a community and continuously urged public officials across the country to do a better job meeting those needs. We envision an agile education system—one designed to innovate constantly, to improve continuously, to bend and stretch to meet the needs of every student.

We view public education as a shared objective, not a particular institution. We have sought ideas and evidence that balance student and family interests with public interests. In the years since our founding, our ideas have informed the transformation of school systems from New Orleans to Denver to the nation's capital. Now there are signs the improvements in those cities are beginning to plateau. Across the country, every school system continues to struggle to meet the needs of the most complex learners and serve the students most deeply affected by trauma and generational poverty. There are also signs that the definition of an “effective” school must be revisited as we learn more about what best promotes child and adolescent learning, the limits of standardized testing, and the need for students to question and create, not just comply.

Meanwhile, the next generation appears poised to confront a multitude of challenges—from a changing climate to a changing economy—that will demand all of the talent it can muster. Education reformers everywhere are searching for new paths forward.

In the past, CRPE has started with a simple question—what makes schools coherent, effective, and innovative?—and worked outward to the implications for policy and governance. Starting with the student instead of the school leads us to important new places, especially as we contemplate lessons from the past and look to a future of great uncertainty. Amid all of that, there's one North Star that runs through each of the essays in this collection: equipping each student for an uncertain future by broadening and customizing their opportunities for learning and growth.

There's one North Star that runs through each of the essays in this collection: equipping each student for an uncertain future by broadening and customizing their opportunities for learning and growth.

The ideas we have presented in these essays are not intended to define a new school reform agenda or even a new CRPE agenda. We do not pretend to have all of the answers. The essays are meant to inspire new conversations and, perhaps, lay some groundwork for people from previously divided camps to come together around new ideas for the future. The challenges ahead are too important to be tied up in continuing conflict among different camps, advocates, and policymakers. Proposed solutions must be pressure-tested from diverse points of view. And they must ultimately be owned and operated by local communities.

Proposed solutions must be pressure-tested from diverse points of view and owned and operated by local communities.

We purposefully explored new territory and big ideas, but we do not mean to imply that school system leaders and policymakers should throw out their old to-do lists for implementing strategies that have proven effective. As we see it, the tenets that CRPE has always held—flexibility for educators, families empowered to make choices, attention to true equal opportunity, government assurances of quality, and true community engagement—are more essential than ever. But these strategies must evolve in ways that enable them to better meet the individual needs of students.

Imagine that 20 years from now, schools from the earliest grade level were highly customized, focused on early intervention, and cultivated students' individual interests and talents. Schools would do whatever was required to serve the extremes, not the mean, so they capture talents that are now being lost and motivate many students who are now settling for mediocrity. This might mean that the role of some schools would be to serve as curators of services and supports rather than a single source providing everything to every student.

Schools teaching younger students would have outcome requirements focused only on a limited set of core gateway learning and developmental skills that were shown to be directly linked to readiness for secondary education. Older students could select or build personalized learning pathways toward careers by earning competency-based credits toward high school graduation, college coursework, and industry credentials.

Teachers would need to be of two kinds—those who build deep relationships with students and curate customized learning packages, and specialists who are experts at teaching specific bodies of knowledge. The former would be located in schools and the latter would often work in—or as—independent providers.

Schools would not be isolated; they would use learning experiences now locked up in community resources, such as businesses, hospitals and clinics, social service organizations, cultural institutions, and colleges.

Equity challenges in areas including gateway preparation and access to career pathways would be anticipated, especially for low-income and rural families. Attention to such challenges would be prioritized, not swept under the rug. Community “navigators” and other organizations would help support individuals and work to build connections, networks, and community.

Funding would increase, be more flexible, and follow students longer. A student who graduated early could use saved funds to come back to school for additional learning later in life. While still in school, a student developing a passion for dance could pay for specialized dance classes by forgoing another elective.

Government would play a critical role in quality oversight, parent information, and student protection, but not necessarily in the provision of services or the prescription of methods.

From Unbundling to Rebundling: Safeguards and Enabling Conditions

These essays show that a more customized, nimble learning system holds the potential to bring unprecedented opportunities to students facing complex needs, high poverty, and other vulnerabilities, but also that community-based attention, investment, and oversight are required to realize that potential. It's not enough to unbundle. Thoughtful rebundling must happen and safeguards must be in place to ensure that a more agile learning environment doesn't benefit only the most educated or advantaged families. If a primary goal of public education is social mobility, government and community actors must take steps to achieve that goal. Figure 1 outlines the ways key players could work toward a more nimble learning system.

If a primary goal of public education is social mobility, government and community actors must take steps to achieve that goal.

Government should focus on ensuring a strong supply of not only school providers, but also a wide range of industry, community, and service partnerships and providers. **Accountability systems** should move away from trying to drive improvement for the average student and instead focus on defining gateway competencies every student must master—literacy, numeracy, and basic knowledge of history, civics, and science. State standards are a workable starting point, but additional competencies can be incorporated into students' individualized learning plans, including career-specific skills, advanced academic specialties, and accomplishments in domains such as technology or the arts.

FIGURE 1. Portfolio of Learning Opportunities: Key Players

	Schools do whatever is required to serve individuals, not averages. Some act more as curators of services and supports than a single source providing everything to every student.
	Parents play a powerful role in selecting educational options for their children, and work in partnership with other players.
	Navigators help families or teachers package a set of learning and support opportunities for a given student and advocate for that student if things aren't going well.
	Government plays a critical role in quality oversight, parent information, and student protection, but not necessarily in the provision of services or prescription of methods.
	Businesses are engaged in K-12 education, providing learning experiences that promote true career readiness.
	Community-based organizations curate new service and school providers to meet student needs, and create the conditions under which they can succeed.

Over the years we have written much about the importance of strong **parent information** as choices in a city increase. These essays demonstrate that whether it's giving community providers an ability to make students and educators aware of their services, helping parents navigate the array of in- and out-of-school learning opportunities for their children, or helping students work with their advisers to set learning goals and find pathways to meet them, families will need no end of information.

Common **enrollment systems** and transparent, basic **school performance data** will continue to matter. But information systems must become more sophisticated to help ensure students and parents are able to discover potential learning experiences and make informed decisions about them. School system leaders should think through who is best equipped to provide this service: Should it be the district itself, or independent mediating organizations?

But while information guides and technology-enabled platforms are important, they are likely not enough. Families will need customized guidance, individualized to unique student needs and goals. Many of these essays suggest the need for "**navigators**" who can help families or teachers package a set of learning and support opportunities for a given student and who can advocate for that student if things are not going well. Individual consultants and nonprofit organizations could play this role. As implied above, some schools or charter management organizations could adapt to focus more on the navigation function than on providing all of those supports themselves.

The roles of **community-based organizations** may broaden beyond attracting new school operators and creating the conditions under which they can succeed. School districts, charter authorizers, and other school system leaders also will have to think about a broader suite of community assets, from academic enrichment opportunities to tutoring providers to social services. This will require coordination with businesses, higher education organizations, medical and social service providers, and other community organizations, all of whom have a stake in the K-12 education system but often operate in independent silos.

Transportation presents an important barrier to many families in decentralized systems of schools. It also presents a barrier to learning opportunities outside the school walls or normal school hours. School system leaders must think about new ways to move students to and from after-school tutoring, mental health appointments, and out-of-school enrichment experiences—or to bring those services to students where they are.

An unbundled education system presents risks of funding misappropriation. **Auditing and oversight** to protect against bad actors will remain important functions. Since some operators—such as career and technical education centers or online course providers—might have operations that span traditional jurisdictional boundaries, this might be an area where state governments have to ramp up their oversight functions.

Steps Communities Can Take to Get from Here to There

We don't claim to prescribe a precise outline for the public education system of the future. But we do highlight some priorities (improved career training, greater attention to the needs of students that school systems currently struggle to serve) and some important strategic elements (rethinking the career path and training program for teachers, tuning funding and accountability systems to the needs of individual students, ensuring more equitable access to out-of-school learning opportunities). For policymakers and practitioners looking to apply these broad concepts in a practical way, we offer some tangible starting points.

Look at data. Which students are not getting what they need now? How can the system better flex to support their unique learning needs?

Look at community. What learning opportunities exist outside the school system? Do all students have equal access? How can opportunities become more widely available?

Look for gaps. What learning opportunities or supports do students need that don't currently exist? Could accountability policies promote early identification and intervention strategies to prevent students from needing more intensive interventions later?

Look at infrastructure. Do families have the information they need to find learning pathways that meet all their goals? What systems would allow them to access that information? Is transportation a barrier to learning

opportunities? Could community-based navigators help low-income or otherwise disadvantaged families access social services and out-of-school learning opportunities? Could those activities be funded through specialized accounts and the outcomes tracked?

Look at funding. Are the district and its schools capable of absorbing rapid changes in enrollment? Do they receive a level of funding for each student commensurate with that student's individual needs? Are there specific funding streams, such as supplemental funding for special education or extracurricular programs, that could be doled out to individual students and placed in a "backpack?" Are there other funding streams, such as social service funding, that could also support students' educational objectives, and that could be combined with education-specific funds?

Look for innovators. Seek out and invest in truly innovative education proposals that will better meet the needs of students with leadership potential or other talents but who have other complex needs. Establish school design incubators for applying brain science to new school designs. Establish new teacher training programs for teachers who want to teach in these new school designs.

Look across boundaries. Establish industry apprenticeship partnerships with associated competencies for triple-credit high school, college, and industry credentialing. Authorize charter and other autonomous schools that are designed to create innovative college prep plus career pathways. Create the regulatory flexibility to allow experimental schools to serve grades 9–14 or 9–16 and adult education. Promote microschools that specialize in excellent college prep curriculum. Allow funds saved on electives to be spent by families on individualized supports for students now or retraining later in life.

Look for meaningful metrics. Shift accountability systems to focus on minimally time-consuming "gateway" assessments and more intensive improvement-focused site visits for schools that could most benefit from that support. Focus on parent information systems at the high school level.

Putting It All Together

Conversations about the next generation of education reforms often get bogged down in either-or disputes. Should districts focus on improving their own schools or contracting with autonomous schools of choice? Can students gain access to job-related learning opportunities without having to sacrifice college prep high school coursework? Should states invest in expanding universal pre-K and other programs built to help lay students' academic foundations, or should they focus on building K–12 schools capable of helping them achieve faster rates of academic growth?

An agile public education system would avoid pat answers to these questions and focus instead on providing effective, flexible, and individual pathways toward common goals. It would find ways to enable every student

to achieve gateway competencies. It would also give every student the support necessary to achieve their full potential and allow them to pursue personal objectives such as job and language skills, social-emotional development, achievements in science or the arts.

Most importantly, if something was not working, or a student's needs were not being met, an agile education system would be equipped to change. A student-centered system would be animated by a drive to do whatever is necessary to prepare every student to solve the problems and capitalize on the opportunities that await the next generation.

Most importantly, if something was not working, or a student's needs were not being met, an agile education system would be equipped to change.

CRPE has been positing and testing ideas about systems change for 25 years; we are not naive about the challenges implied by the ideas we propose. At its fullest realization, a student-centered education system brings many risks. Would greater individual gain necessarily mean less community good? Would the safeguards we propose be enough to protect those who are most vulnerable and close opportunity gaps? Would “reformers” repeat the mistakes of the past and advocate for policies that are not embedded in strong community-based constituencies? Would individualized career pathways and deeper industry partnerships track students or place too much career emphasis in schooling? How would existing schools and school districts cope with the disruptions and financial strain of more customization? Is the comprehensive American high school still relevant in the age of agility?

These proposals also imply a set of policy changes and system adaptations that are hard to imagine today. Some require cooperative agreements and collaborations among higher education, school districts, industry, and community service providers—entities that have not played well together. They imply major shifts in how we train educators, and perhaps in their labor contracts. There are potentially many new costs implied throughout, despite many options for redistributing funding.

These are not easy questions, but we think they are worth taking on for the simple reason that we do not see a way for education to prepare students to solve the problems of today, much less the future, given the fundamentally rigid and inequitable structures we have built in the past. Now is the time for all of us to fully engage in new visions, to form new alliances, and to commit to ongoing questioning and clear-eyed assessment. We hope these essays contribute toward those ends.