

Public & Social Sector Practice

# Reimagining a more equitable and resilient K–12 education system

Responding to the changes that the COVID-19 crisis has wrought on education systems around the world requires building on what we know works, as well as looking ahead to what we know students will need.

*by Jake Bryant, Emma Dorn, Stephen Hall, and Frédéric Panier*



**The COVID-19 pandemic has upended school systems** around the world. The pace has been frenetic as systems have had to stand up remote learning overnight, plan whether and how to reopen schools amid changing epidemiological circumstances, and support students academically and emotionally. The scope of the challenge has thus far left little time for deeper reflection.

Yet crises often create an opportunity for broader change, and as education systems begin to make decisions about investments for the new school year, it's important to step back and consider the longer-term imperative to create a better system for every child beyond the pandemic.

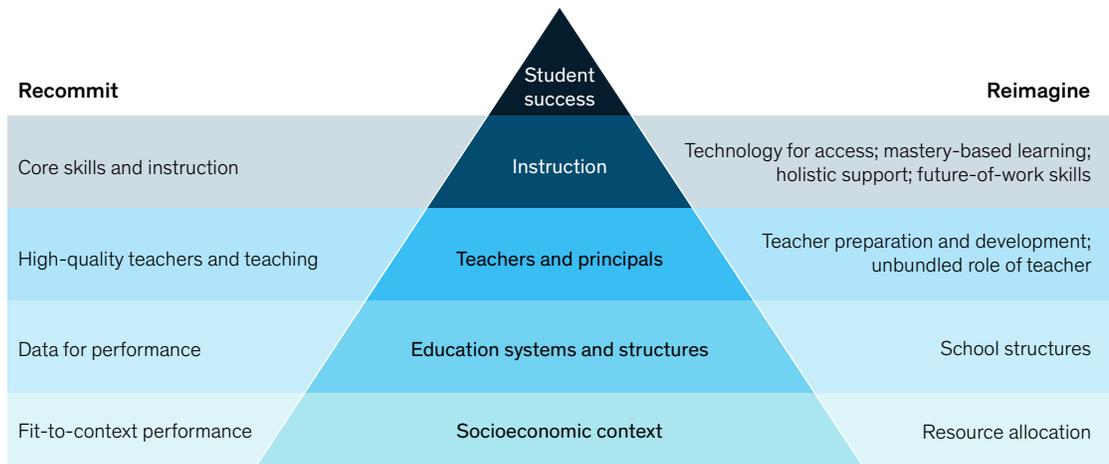
The process starts with a key question: What are we trying to achieve, for whom, by when, and to what standards? Our research shows that top-performing school systems can vary significantly in curricula, assessments, teacher behaviors, and even desired outcomes. What unites them is a focus on excellence for every child, regardless of race, gender, income level, or location. That core value should inform the areas to keep in our current systems and where to innovate to create more effective and equitable education for all.

While we mustn't lose sight of what we have learned through decades of research and education reform, the COVID-19 pandemic is driving educators to accelerate new models of learning and innovate beyond the classroom. Lockdowns forced students around the world to learn from home, resulting in a dramatic increase in the use of online tools, such as videoconferencing, learning-management platforms, and assessment tools. In a month, Google Classroom doubled its number of users and Khan Academy saw a 20-fold increase in parent registrations. At the same time, the pandemic has highlighted and even exacerbated many of the inequities in the school system, from the learning environment at home to access to devices, internet, and high-quality education. There is now both the political will and a sense of urgency to take on the challenge of fixing long-broken delivery models. We applaud that instinct.

In this article, we suggest that school systems recommit to four basic principles and consider eight ideas for innovation (exhibit). Although it may seem overwhelming, the time to start reimagining the future of education is now.

Exhibit

**Reimagining education after the COVID-19 crisis involves recommitting to what we know works and reshaping for a better future.**



# While greater use of technology in education may be inevitable, technology will never replace a great teacher. In fact, a single teacher can change a student's trajectory.

## Recommit to what works: Get the basics right

Will the COVID-19 pandemic completely disrupt global K–12 education and usher in a fully virtual, all-inquiry-based, 21st-century-skill, insert-buzzword-here future? No, actually. We know from decades of study that every school system must first get these basic elements right:

- **Core skills and instruction.** Students need a strong foundation in literacy and numeracy. You can't code if you can't do math. You can't communicate effectively if you can't read or write. You can't innovate without knowledge. Yet UNESCO estimates that 60 percent of children around the world aren't meeting basic standards.<sup>1</sup> Other studies show that US students who can't read proficiently by third grade are four times more likely to drop out of school.<sup>2</sup> Research has identified the curricula, instructional materials, and teaching methods that are most effective in helping children learn. And the earlier that children get exposed to those skills, in prekindergarten or other programs, the better. Systems need to ensure that the knowledge is being adopted in both remote and in-person environments and evaluate new ideas against those benchmarks.
- **High-quality teachers and teaching.** Research backs up what many of us know to be true: children learn best from people, not programs. While greater use of technology in education may be inevitable, technology will never replace a great teacher. In fact, a single teacher can change a student's trajectory.<sup>3</sup> High-performing school systems understand that and invest in both recruiting and helping top talent become effective teachers. Every system must do the same by developing and supporting teachers, especially as they learn new skills for remote and hybrid learning.
- **Performance measurement.** It's hard to achieve excellence without data on current performance and benchmarks to aim toward. However, data should be used primarily to inform—to direct support to the students, teachers, and schools that need it most—not to punish.<sup>4</sup> Instead of eradicating tests altogether, systems need better assessments and better tools to help each student succeed. Formative assessment becomes even more critical and must thus be more intentional when the teacher is not teaching in person.

<sup>1</sup> "More than one-half of children and adolescents are not learning worldwide," UNESCO, September 2017, [bangkok.unesco.org](http://bangkok.unesco.org).

<sup>2</sup> Donald J. Hernandez, *Double jeopardy: How third-grade reading skills and poverty influence high school graduation*, Annie E. Casey Foundation, January 1, 2012, [aecf.org](http://aecf.org).

<sup>3</sup> June C. Rivers and William L. Sanders, *Cumulative and residual effects of teachers on future student academic achievement*, University of Tennessee Value-Added Research and Assessment Center, November 1996.

<sup>4</sup> Michael Fullan, *Choosing the wrong drivers for whole system reform*, Centre for Strategic Education, April 2011.

— **Performance level and context.** School systems at different levels of performance, from poor to fair to good to great to excellent, require different sets of interventions. Poor performers may need central control to build up basic infrastructure and provide motivation, scaffolding, and scripted lesson plans for teachers. Stronger performers may need more decentralized innovation, peer-led learning, and collaborative planning to engage students and staff. In the context of remote-learning design, that might mean mass TV and radio programs in some countries to reach all students; in others, it may involve ensuring better connectivity and access to devices to close the digital divide.

Those are basic table stakes, but they aren't enough. Progress in educational outcomes seems to have stalled in recent years. Beyond the basics, the COVID-19 crisis is a signal that school systems around the world need to move beyond existing approaches to embrace more radical innovation, rethinking some fundamental elements of how we have educated students for generations.

### **Harness technology to scale access**

Research demonstrates that just handing out devices to students doesn't lead to improved learning. The COVID-19 pandemic has shown us that giving lectures on a video call is rarely a substitute for face-to-face learning. The challenge isn't just to adopt new technologies but also to incorporate them in ways that improve access and quality.

That's especially important in the areas of the world that struggle with limited resources and significant shortages of qualified teachers.<sup>5</sup> Imagine Worldwide has worked with partners to develop high-quality, tech-enabled literacy and numeracy programs that cost less than \$25 per student per year. With supervision from any adult, students use solar-powered tablets preloaded with research-based, self-

paced math and literacy software for up to 60 minutes a day. That enables every device to support the learning of four to five students, all without requiring an internet connection. Randomized control trials in Malawi have shown learning gains of 5.3 months among users over a control group in a single school year.<sup>6</sup> For less than \$5 billion—less than 1 percent of the US public-school budget—that technology could be scaled across sub-Saharan Africa.

### **Move toward mastery-based learning**

Personalized, mastery-based learning has been around for more than a decade, but the best solutions still reach a minority of kids. Technology has made the model even more compelling, enabling personalization at a level that's impossible to achieve in the traditional classroom. Smart adaptive-technology programs<sup>7</sup> can integrate instruction, practice, and feedback to allow students to work at their own pace, only moving on when they have fully grasped the material. Those programs have shown particular promise in mathematics.<sup>8</sup> They can also make formative assessments more efficient, immediate, and fair, reducing teacher bias while freeing teachers up from the half day that the Organisation for Economic Co-operation and Development reports they spend each week on grading student work.<sup>9</sup> As school systems invest in software solutions for remote and hybrid learning, they can plan for a future of blended personalized learning in the classroom.

### **Support children holistically**

Previous research has outlined the correlation between mindsets and academic performance, but the shift to remote learning has put it into stark relief. Students with high levels of self-motivation, persistence, and independence have thrived, while others have struggled. Similarly, the emotional toll of the COVID-19 pandemic has raised awareness of the need to address anxiety, depression, and other

<sup>5</sup> UNESCO UIS, UNESCO Institute of Statistics, July 2020, uis.unesco.org.

<sup>6</sup> Sarah Bardack, Antonie Chigeda, and Karen Levesque, *Tablet-based learning for foundational literacy and math: An 8-month RCT in Malawi*, Imagine Worldwide, January 31, 2020, imagineworldwide.org.

<sup>7</sup> For example, ALEKS, Cerego, DreamBox, HegartyMaths, Khan Academy tools, Realizeit, ST Math, Squirrel AI Learning, Up Learn, and others.

<sup>8</sup> *Will technology transform education for the better?*, Abdul Latif Jameel Poverty Action Lab, 2019, povertyactionlab.org.

<sup>9</sup> "How much time do teachers spend teaching?," in *Education at a Glance 2019*, OECD, September 2019, oecd-ilibrary.org.

mental-health issues as a precondition to helping students learn. It's a reminder that schools need to address the whole child, helping them develop skills and awareness that go beyond what they need simply to find work. Educators play a critical role in helping children learn how to become effective citizens, parents, workers, and custodians of the planet.

A model that has long won accolades is the International Baccalaureate, which was designed to educate international-minded students to be “inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced, and reflective.”<sup>10</sup> Meanwhile, KIPP Foundation charter schools have developed a character framework featuring the seven character traits most predictive of academic success: zest, grit, optimism, self-control, gratitude, social intelligence, and curiosity.<sup>11</sup> KIPP Foundation schools outperform peers in both test scores and college enrollment. For schools that haven't yet integrated those lessons, the upcoming semester would be a great time to start. Whether teachers are using remote, hybrid, or fully in-person models, starting the school year with relationships and socioemotional check-ins will ensure that students are mentally ready to learn.

## Help students adapt to the future of work

The COVID-19 pandemic has likely accelerated workplace automation as employers continue to automate tasks to reduce costs and minimize the spread of infection. School systems need to help students adapt to rapid changes in the workplace and other impacts of rapid digitization, from ethical standards and cybersecurity to the impact on health, forensics, and many other parts of the economy.

In the digital era, educators need to expand their understanding of what it means to be literate in the 21st century: not replacing traditional learning but complementing it. Computer programming and digital literacy are becoming core skills. For example, England has integrated computer science into all levels of primary and secondary education, so students start learning about coding and internet safety from the age of five.<sup>12</sup>

With the speed of change in the digital era, business leaders can also be critical partners in helping students develop job-ready skills. A model of this is P-TECH (Pathways in Technology Early College High School), which launched in New York City in

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<sup>10</sup> “The International Baccalaureate learner profile,” International Baccalaureate Organization, [ibo.org](http://ibo.org).

<sup>11</sup> “Focus on character,” KIPP Foundation, [kipp.org](http://kipp.org); Susan Headden and Sarah McKay, “Motivation matters: How new research can help teachers boost student engagement,” Carnegie Foundation, July 2015, [carnegiefoundation.org](http://carnegiefoundation.org); Grover J. “Russ” Whitehurst, “Hard thinking on soft skills,” Brookings Institution, March 24, 2016, [brookings.edu](http://brookings.edu).

<sup>12</sup> “National curriculum in England: Computing programmes of study,” UK Department for Education, September 11, 2013, [gov.uk](http://gov.uk).

# The stress of remote and hybrid learning is already catalyzing some systems to rethink teacher roles and allocation.

2011 as a partnership of IBM, the City University of New York, and the New York City Department of Education. During the six-year program, students earn a high-school diploma and an associate's degree while gaining work experience with industry partners. The model has since expanded to include 220 schools and 600 industry partners in 24 countries. In response to the COVID-19 crisis, IBM announced the launch of Open P-TECH to expand the reach of the program further, enabling students aged 16 and older to register individually for classes in topics such as cybersecurity, artificial intelligence, and cloud computing.

## Invest in new models of teacher preparation and development

Although most education experts recognize the importance of great teachers, teacher preparation and development still falls short in many systems. That has to change, starting with creating more linkages between teacher training and local schools, much like the linkages between medical schools and hospitals to anchor learning in real-world practice. In more advanced systems, there is an opportunity to reimagine teacher training and development more fundamentally by leveraging advanced technology. Corporate learning programs successfully use simulations to train workers before getting in front

of a customer or patient. Given how much teachers improve in their first two years,<sup>13</sup> simulations could provide teachers a valuable learning experience before they spend their first day alone in a real classroom of children. While some early products are emerging in that space,<sup>14</sup> the power lies in customizing and applying them at scale.

Teachers need continued support in the classroom and often struggle to receive effective professional development.<sup>15</sup> Here, too, technology has a critical role to play. In less developed systems, simple, robust technologies can provide scaffolding for teachers with little experience. Bridge International Academies is an example of a school system that uses scripted lesson plans on tablets to help teachers cover core areas. In a large-scale trial in Liberia, students who attended Bridge International Academies schools for a three-year period under that system achieved results equivalent to an additional two and a half years of learning.<sup>16</sup>

## Unbundle the role of the teacher

School systems can examine the areas in which teachers spend their time and free them to spend more time on high-value activities that require deep teaching expertise and relationships. The stress of remote and hybrid learning is

<sup>13</sup> Kevin C. Bastian, C. Kevin Fortner, and Gary T. Henry, "Gains in novice teacher effectiveness: On-the-job development or less effective teachers leaving?," Education Policy Initiative at Carolina, June 2011, [publicpolicy.unc.edu](http://publicpolicy.unc.edu).

<sup>14</sup> For example, simSchool is a virtual practicum program that immerses novice teachers in some of the complexities of teaching seventh- to 12th-grade students who possess a variety of different learning characteristics and personalities.

<sup>15</sup> For example, in the United States, a TNTP survey of 10,500 teachers found that teachers spent an average of 19 days per year in teacher development but only 30 percent actually improved their performance. *The Mirage: Confronting the hard truth about our quest for teacher development*, TNTP, August 4, 2015, [tntp.org](http://tntp.org).

<sup>16</sup> "Three year RCT in Liberia evidences improved learning outcomes," Bridge, December 16, 2019, [bridgeinternationalacademies.com](http://bridgeinternationalacademies.com).

already catalyzing some systems to rethink teacher roles and allocation. In the short term, such reimagining may involve teams of teachers, with some providing remote and others providing in-person learning. It might also involve new roles, such as learning navigators to help students adapt to remote learning.

Longer term, systems might consider a more radical unbundling of the role of the teacher, enabling individuals to take on more differentiated roles that play to their strengths, preferences, and areas of expertise. For example, the Opportunity Culture multiclassroom-leadership model creates teams that consist of a multiclassroom leader and several teachers, teaching associates, and residents. More students are reached by excellent teachers, expert teachers are provided a career ladder without having to shift into administration, and newer teachers get coaching to improve. When placed into that type of teaching team, teachers who were, on average, at the 50th percentile in student learning achieved learning gains equivalent to the 66th to 85th percentile in student learning. Another model uses expert teachers to coach and support other teachers to improve their craft.<sup>17</sup>

### **Allocate resources equitably to support every student**

Many education experts argue that the current methods of allocating funding, teachers, and resources to schools are fundamentally unjust. Globally, there are significant inequities among countries, yet donor funding is insufficient to close the gap to universal enrollment, let alone the gap to universal high-quality education. Achieving Sustainable Development Goal number four—to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all—will

require a significant increase in investment for the students most at risk of falling behind.

Within countries, the COVID-19 pandemic has exposed the racial disparities in public health and the economic impact of the crisis. It has also laid bare the inequities of access to high-quality education. The Black Lives Matter movement in the United States is a reminder of the deep-seated racial inequities that are partially rooted in educational segregation. Those inequities emerge even before school attendance begins.

Instead of helping low-income and disadvantaged students catch up, the current funding mechanisms in many countries widen the gap. In the United States, the average high-poverty school receives \$500 less per student each year than the average low-poverty school does.<sup>18</sup> It doesn't have to be this way.

From proposals to redraw district boundaries<sup>19</sup> to innovative collaborations, there are many ways to help create a more equitable education system. In the Brazilian state of Ceará, for example, the top 150 high-performing schools are partnered with low-performing schools. For the top performers to access additional funds, they have to help the low performers achieve certain targets.<sup>20</sup> Could systems around the world incentivize top schools to offer all their advanced classes and electives, along with mentors, resources, and other forms of help, to high-poverty neighbors? Could that start with the remote-learning instruction currently being rolled out?

### **Rethink school structures and policies**

Education systems now have an opportunity to rethink the school structures that were forged in the 18th century. It's increasingly clear that school calendars organized around a long summer

<sup>17</sup> Li-Kai Chen, Emma Dorn, and Paul Rutten, "The leerKRACHT foundation: Continuous improvement in Dutch education," February 2020, McKinsey.com.

<sup>18</sup> Stephen Q. Cornman et al., *Revenues and expenditures for public elementary and secondary school districts: School year 2015–16 (fiscal year 2016)*, Institute of Education Sciences, December 2018, nces.ed.gov.

<sup>19</sup> For examples, see proposals by EdBuild, a not for profit that advocates for fair school funding, on edbuild.org.

<sup>20</sup> *Strong performers and successful reformers in education: Lessons from PISA for the United States*, Organisation for Economic Co-operation and Development, 2011, oecd.org.

break aren't ideal for learning. For students who struggle with remote learning through the COVID-19 pandemic, a long summer hiatus could be devastating.<sup>21</sup> In some countries, existing policies on sorting students too early can preclude opportunities for students sorted into different pathways or tracks. Other systems rely overly on repetition, which can label and demotivate students.

Perhaps the COVID-19 crisis can be a catalyst for innovation. For example, Cleveland schools are considering scrapping grade levels altogether to promote proficiency-based learning. Schools in Australia and India have temporarily shifted their school calendars. As education systems work out how to catch up on the lost learning resulting from the COVID-19 pandemic, perhaps summer school in 2021 could be the first step toward a more equitable school calendar going forward.

The list of educational innovations and possible interventions is long, and many of those changes are untested or associated with only emerging evidence. We don't wish to experiment with our children's futures. But equally, we don't want to be held back by inertia or continue with failed experiments. Where should school systems start?

Bold education systems can take an agile and research-based approach, running opt-in pilots in small pockets to test parent appetite and student outcomes. Smart systems will also expand their partnership networks, collaborating with academia to bring the best of learning science, with employers to create linkages to the workplace, and with philanthropists to access funding. All school systems must challenge themselves to reshape their models to deliver a better education to every child.

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<sup>21</sup> Kelly Charlton et al., "The effects of summer vacation on achievement test scores: A narrative and meta-analytic review," *Review of Educational Research*, 1996, Volume 66, Number 3, pp. 227–68; Megan Kuhfeld, "Summer learning loss: What we know and what we're learning," NWEA, July 16, 2018, [nwea.org](https://www.nwea.org/); Megan Kuhfeld, "Summer learning loss: Does it widen the achievement gap?," NWEA, September 4, 2018, [nwea.org](https://www.nwea.org/).

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The authors wish to thank Katie Owen and Petr Vilim for their dedicated research and contributions to this article.

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