

Schools as **Community Infrastructure**



How integrating a multidimensional approach can move schools and communities forward

Preface

By KATY KNIGHT, *President and Executive Director, Siegel Family Endowment*

INFRASTRUCTURE INFLUENCES EVERYTHING. Prior to the COVID-19 pandemic, we at Siegel Family Endowment had started to formulate a concept for infrastructure that encompassed more than just traditional physical structures, focusing instead on the ways that physical, digital, and social dimensions play an equally important role in creating a just foundation for all people in society to thrive. Since then, we've seen both the devastating impacts of a global pandemic that hit hardest in the places where infrastructure is weakest, and heartening examples of the ways that a multidimensional approach can inspire new thinking and strengthen work happening in communities across the country.

We have seen some of the most extreme, and extraordinary examples of this in the realm of K-12 public education, which is why we've decided to further explore applications of this multidimensional framework to education in this whitepaper. In many places, physical, digital, and social infrastructure in education are vulnerable, especially for historically under-resourced communities. Despite the immense challenges, there are people, schools, and organizations that are leveraging their teaching and learning infrastructure for the benefit of entire communities. At a moment of deep polarization and challenge, human connection is more important than ever. Schools can center these place-based transformations if we give communities the resources they need to leverage their own assets for the benefit of all.

We believe that philanthropy, which has shaped educational change for centuries, for better and sometimes for worse, has a critical role to play in advancing community-led change in our education infrastructure. By focusing on the infrastructure of learning, we believe it is clear who the most important stakeholders are and should be: the people who comprise the school community—learners, teachers and other staff, parents and guardians, and members of the surrounding community. Philanthropy can support all of these stakeholders by providing technical assistance, offering risk capital to try new things, and by connecting and amplifying great ideas in the right places. We recognize that this is not a new challenge, and that many concepts and frameworks for how to change education already exist.

We offer a vision of schools as more than buildings. We want to think of schools (and all the extensions of schools, the many places where teaching and learning happen) as pieces of community infrastructure. The implications for how we might then define, design, govern, and fund this infrastructure will allow us to think beyond traditional silos and invent new ways to serve students and communities, now and in the future.

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We offer a vision of schools as more than buildings – we believe they are vital community infrastructure.

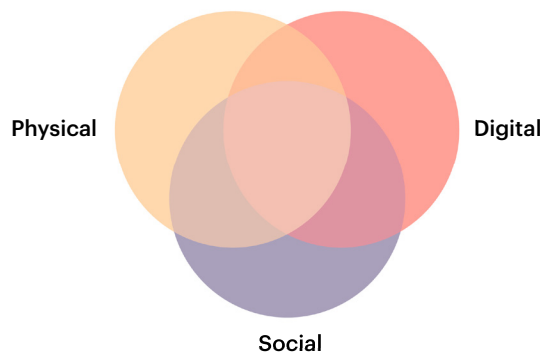
Executive Summary

What opportunities exist for positive change—for our children, families, educators, and communities—when we reimagine schools as vital public infrastructure? We at Siegel Family Endowment believe that exploring this question is critical if we are to begin to address the vast inequities and challenges facing public education.

Fortunately, many practitioners all over the country are already placing school at the heart of community and community at the heart of school. This paper amplifies this work in the hope of spurring conversation, community engagement, and action.

At Siegel Family Endowment, we take a multidimensional approach that views school as the sum of three interconnected parts:

- Physical infrastructure that includes the built environment that enables teaching and learning to happen
- Digital infrastructure that includes all aspects of technology, data, and systems that are used by various actors within the school ecosystem
- Social infrastructure that includes the relationships and connections between the vast array of people who are directly and indirectly part of the school community



While it may at first seem unusual to frame these efforts with the language of infrastructure, viewing the work through the lens of a holistic framework presents a broader opportunity to explore the transformative power of innovations in education, and to imagine ways of pushing them even further to empower and improve entire communities.

We present three case studies that illustrate how communities are putting these ideas into practice, and the lessons that we can take from their experience:

- An ambitious and long-lasting partnership in Burlington, Kansas between school districts and government entities that pools resources for digital infrastructure and sparks innovation
- A set of competency-based public lab schools in Philadelphia and Allentown, Pennsylvania that are designed to build strong social infrastructure and encourage real-world learning
- An effort to empower caregivers to design digital opportunities and spaces to build school community in Oakland, California

Drawing on these case studies, a variety of other examples, and existing work and research on learning and community building, we offer a snapshot of the structural elements that can propel multidimensional infrastructure thinking and design in school communities. These elements include:

- A deep foundation of trust and partnership between stakeholders
- A shared vision and corresponding metrics that are jointly developed by stakeholders
- An analysis and plan for leveraging the vast array of assets that community members, institutions, and schools offer
- An understanding of gaps between existing and needed assets, and a plan for filling those gaps in ways that are consistent with community priorities
- A commitment to flexibility and evolution, and careful consideration of how to make programs sustainable and effective in the long-term

Community members of all sorts are key to dreaming, designing, and implementing holistic and multidimensional approaches to schools. We lay out a vision for how funders can engage these community members and leverage their unique positions to propel this work. That vision includes taking risks, remaining flexible, bringing together stakeholders who are normally siloed, following the community's lead, and sharing learnings with other communities. By doing so, we hope to shift what's possible for school communities. Thoughtful philanthropic investment offers opportunities for school communities to experiment and demonstrate the value of their approaches, leading to increased public sector funding and systems-change that comes from the community itself.

We at Siegel Family Endowment hope that this white paper can act as an invitation to learn, share, partner, and chart how far a multidimensional lens can take us in creating change in education.

INTRODUCTION

An Opening for Reimagination

The public education system in the United States has long been a paradox—both a space that offers boundless learning and possibilities to young minds, but also a reflection of our worst impulses as a society. On one hand, public education funding and housing patterns reinforce racial segregation and the unequal availability of resources seven decades after *Brown v. Board of Education* declared “separate but equal...inherently unequal.” On the other hand, public education still reflects our deepest aspirations and promise as a nation—that all children should be given an opportunity to learn, to grow, to achieve, and to contribute to their communities in meaningful ways.

Unfortunately, the barriers to delivering that vision are vast. Students don’t come to school as blank slates, but with needs that schools can’t always meet, and with experiences that schools are often ill equipped to address. Teaching practices don’t always meet

students where they are, and there are few incentives—and even fewer resources—for large systems to radically shift how they reach students. Teachers, leaders, and school staff are often overwhelmed, underpaid, and underappreciated. Educators in many places increasingly operate under the looming specter of politics. Laws that are not always conversant with sound educational practice now regulate the topics that teachers can address in the classroom, the methods that they can employ, and the materials that students can access. Such politicization of education has had a chilling effect on an already demoralized educator workforce.

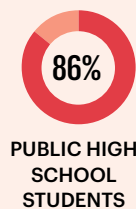
Underlying all of this, the K-12 school system—like the nation as a whole—reflects deep inequities, whereby children from low-income families and students of color are most deeply impacted by structural barriers to success. And early indications show that these divides have only been exacerbated by the global COVID-19 pandemic.

Inequities In Education

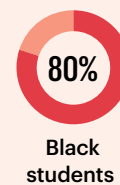
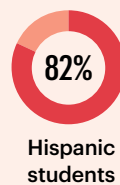
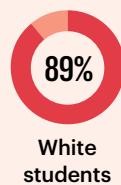
Children from low-income families and students of color face a range of obstacles in accessing and benefiting from public education.

SCHOOL COMPLETION

Indigenous, Black, and Hispanic students are all less likely to graduate from high school than White students
(National Center for Education Statistics)



THE NATIONAL ADJUSTED COHORT GRADUATION RATE (ACGR):



FUNDING

The highest poverty school districts receive about

7%

less per pupil in state and local funding than the lowest poverty districts
(The Education Trust)

COVID

- More than **200,000 children** have lost a caregiver to COVID-19, with Black and Hispanic children nearly **two times** more likely and Asian children **1.4 times** more likely to lose a caregiver than White children *(NBC News)*
- Research shows that children who suffer the death of a parent are **twice** as likely to exhibit challenges at school when compared with students who have not lost a parent, even seven years later *(University of Pittsburgh)*

STUDENT PERFORMANCE



The median math and reading scores for students from low-income families fall within the **lowest quartile** of students who don’t qualify for free or reduced lunch *(Brookings Institute)*

Rethinking education as public infrastructure

The tragedy of the pandemic, along with the social justice movement sparked by George Floyd's murder, gave more visibility to already existing community-led calls for change. For both better and worse, they changed what school was and what it could be. In an era where learning took place—or didn't take place—at kitchen tables, in parking lots, in RVs, in homeless shelters, and at after school programs, the colloquial meaning of school infrastructure changed dramatically. At the same time, the renewed spotlight on racial justice gave greater visibility to the

human and physical resources necessary for supporting learning, and importantly, the structural inequities that have resulted when those resources were not present.

What is necessary for us to reach students marginalized before and during the ongoing pandemic? Answering that question requires taking into account not only the stated teaching and learning purpose of schools, but also the many roles that schools take on to create the conditions necessary for effective teaching and learning. It's a question that schools, educators, policymakers, and researchers have been answering for decades—through a growing movement that includes whole child education, wraparound services, community schools, and social-emotional learning, and through an awareness that when it comes to learning, one size doesn't fit all.¹

The School Extends into the Community and the Community Extends into the School

How innovative public schools are positioning themselves at the center of community, for the benefit of both entities



"Innovative public schools are placing themselves at the center of diverse communities, recognizing that the infrastructure necessary for effective learning extends far beyond the brick-and-mortar classroom."

The pandemic has highlighted how schools can sit at the center of a community. Some of their secondary functions can be easily measured: the millions of children who get physical, mental, and dental health care at school; the proportion who rely on school meals for most of their nutrition; the number of students who get their only access to the internet through schools; and the number of students who receive mental health services through schools.²

At the same time, some of public schools' most critical contributions have always defied easy measurement, such as the way they cultivate community ties to nurture today's learners into tomorrow's inventors, entrepreneurs, healers, and social change makers. Critically, schools can be sources of community pride, connectedness, and inspiration, as well as the social center of a place.

In both tangible and abstract ways, innovative public schools are placing themselves at the center of diverse communities, recognizing that the infrastructure necessary for effective learning extends far beyond the brick-and-mortar classroom—and that education and learning themselves are critical infrastructure that serve and enrich entire communities. The challenging circumstances of the COVID-19 pandemic and the current political realities in many districts and states have only accelerated this trend.

Rethinking schools as multidimensional

At Siegel Family Endowment, we've invented a multidimensional framework for integrating and leveraging the three dimensions of infrastructure: physical, digital, and social.³ Applied to a school context, this means looking at education as critical public infrastructure that enables and involves many aspects of community. It also means devising and amplifying programs that recognize the interdependence of physical spaces, digital networks, and social connections to propel schools—and the communities in which they are situated—forward.

We are far from the first organization to champion an expansive vision for K-12 public schools and public charter schools, or to posit that community and education are inextricably linked. Nor do we think that positioning this work around infrastructure is the only way to conceptualize the connective tissues that enable effective teaching and learning. Our goal is to broaden the perspective and break down the traditional silos that exist across many areas of impact, like in school vs. out of school or

building new schools vs. rebuilding old ones. These silos are not just in education efforts specifically, but also in the many efforts to impact communities' economic development, housing, social services, and more. Incorporating these elements into a vision for the sort of equitable, resilient multidimensional infrastructure that allows all people to thrive can elevate the work that schools and communities are already doing, and spur all of us—as funders, school leaders, educators, families, students, community leaders, and community members—to support investment in and across physical, digital, and social assets to achieve outsized impact.

A conversation that can propel change

Supporting the linkages between physical, digital, and social infrastructure requires us all, especially funders, to be part of a powerful, sometimes uncomfortable, and potentially transformative conversation. It's a conversation that begins with elevating the work that is being done to capitalize on a holistic vision of the school in the community, while also recognizing that there are constraints that we need to work within in order to make progress at scale.

Some of those constraints are dictated by the finite availability of resources, while others are determined by the limits of existing public school systems and the political context in which they operate. Yet, working within existing systems is crucial if we are to make deep impact and reach those that have been traditionally marginalized. We can work with what we have, even as we also imagine breaking out of those constraints. It's necessary that we listen to and integrate the perspectives of stakeholders involved in both incremental and inventive change.

Being part of this conversation means thinking about what might be possible when we consider schools as hubs for *everyone* involved in education and learning—which is to say, students, families, teachers, administrators and staff, taxpayers who support them, and residents who benefit from the resources they provide. It's as much about community as it is about education, and an acknowledgment that the two are deeply intertwined.

We hope this paper will spark readers' imaginations of what's possible with a multidimensional, multi-sector collaboration that places equity and historically marginalized communities at its center. It's our goal to cultivate new opportunities for dialogue, partnership, and further investment in this kind of transformative change. ■

A Multidimensional Lens for School Infrastructure

Understanding how physical, digital, and social infrastructure can be leveraged by school communities

1

Built environments, such as playgrounds and classrooms, provide the backdrop against which learning and social interactions take place.

2

Schools provide the technological systems and access that enable students, families, and educators to participate fully in online learning communities. Data offers insight into how to help students and their families thrive.



3

Schools facilitate connections between students, families, educators, coaches, after school program leaders, local activists, and others in built environments outside of the classroom.

4

Schools can leverage technology, data, and platforms to expand students' social connections and wellbeing, whether it is through health care or high-quality remote learning and instructional practice.

1

Taking a Multidimensional View of School Infrastructure

Take a moment to think about a school in your community. What does it look like? What is it used for? What does it offer and to whom?

Maybe you thought about a century-old four story building. Maybe you thought about an elementary school playground. Maybe you thought of a black top or auditorium. Maybe you thought about peeling paint and decaying floorboards.

Or maybe you imagined something else entirely: a laptop computer with dozens of student names and faces in squares on a video meeting, or a small group of students working together at a community center, or someone reading in a library.

Schools are all of these things simultaneously—the physical walls of school buildings, the learning that occurs inside and outside of those walls, the playing fields and playgrounds, the digital tools and connections, the community events, the people who inhabit that school community, and much more. At its best, the school is a community that exists within physical and digital spaces, but that also reaches out—in ways big and small—to the larger community in which it is situated.

How the three dimensions work together to further teaching and learning

Physical Infrastructure

Adequate, healthy, and safe physical infrastructure is key to effective learning. Yet, there are deep-seated inequities within the built environment, with low-income communities and communities of color often forced to contend with poor quality and outdated structures.⁴ And while small interventions such as flexible seating or maker spaces can be helpful, they represent a piecemeal approach to a larger problem, and often fall lower on a list of more urgent priorities.⁵ Most public schools cannot afford major infrastructure updates to keep pace with evolving teaching and learning needs when so many resources have to be directed to fixing leaking roofs and malfunctioning HVAC systems. Even when school funding is sufficient to support adequate maintenance, schools are often designed for the learning goals of the 1950s, not those of the 21st century.

When we expand the spatial dimensions of schools' physical infrastructure, we can see new opportunities for finding needed resources. Schools can draw on public infrastructure in their

Infrastructure for Teaching & Learning

THE THREE DIMENSIONS

Physical Infrastructure

The built environment that enables teaching and learning to happen. This consists of both public and private spaces where learning happens, including the school building, classrooms, playgrounds, libraries, museums, and community centers.

Digital Infrastructure

All aspects of technology, data, and systems that are used by various actors within the school ecosystem. These elements consist of hardware (computers and devices), software (online learning tools and platforms), internet (broadband, fiber, and hot spots), data (about students, families, and learning outcomes), and training, among other elements.

Social Infrastructure

The relationships and connections between the vast array of people who are directly and indirectly part of the school community, including students, families, teachers, staff, administrators, support staff, local activists, after school program leaders, coaches, government leaders, funders, local business leaders, and others.

HOLISTIC LENS

Multidimensional Infrastructure

An understanding of the interconnectedness of all three dimensions for effective teaching and learning that elevates both the immediate school community and the larger community of which it is a part. Any change in one dimension has an effect on the other dimensions, and it's important that we consider all three areas when we design and maintain our schools. By doing so, we can develop a future of teaching and learning that is responsive, resilient, and community-driven.

The State of the Physical Infrastructure of America's Schools

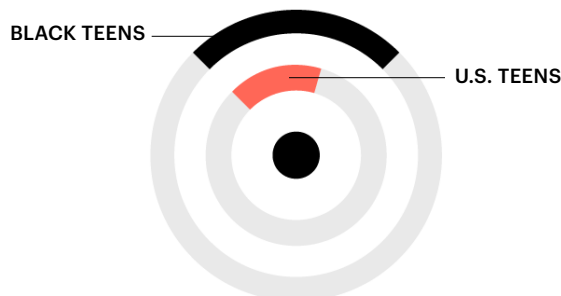
Adequate physical infrastructure is important for learning. Yet, learning spaces are inadequate in many places.



In 2017, the American Society of Civil Engineers **graded America's school infrastructure a D+** (ASCE)



53% of public schools—or over 50,000 buildings—are estimated to need repair or renovation to bring them into good condition, at a total cost of around \$197 billion (National Center for Education Statistics)



17% of U.S. teens and 25% of Black teens report that they are often or sometimes unable to complete homework because they lack reliable internet and computer access (Pew Research Center)

communities, such as parks, libraries, playgrounds, museums, community centers, local businesses, and others, to augment their own operational capacity. For example, a community garden might be the site of science lessons and volunteer opportunities for students.

In the other direction, schools can offer their physical infrastructure to the community. Doing so requires open communication with local leaders to understand the priorities, practices, and goals of their constituents. For example, if there's a need for GED classes, the school might offer its library after hours, modifying the design to accommodate adult learners and provide GED exam prep materials.

This more holistic, bidirectional approach to designing, maintaining, and using physical infrastructure can enable schools to both serve and derive material benefit from the local community. That might involve pursuing new streams of funding or other material resources for physical infrastructure that aren't available to one entity on its own. For example, local business leaders might offer career coaching to students and their family members in the school building. Or resources might flow the other way, from the school to the community. A local nonprofit might use the school building to collect donations or organize volunteer opportunities.

This way of rethinking the limits of schools' physical infrastructure is certainly not a replacement for other types of external resources—especially in low-income communities and in communities of color that have been chronically underserved and historically excluded from infusions of funding. It's crucial that philanthropic organizations invest in community-led experiments that connect the dots between school buildings and the communities that surround them. It's equally important that governmental agencies support these proofs of concept with additional funding. But redefining the school's physical infrastructure challenges us to expand our ideas of what might be possible, and brings more stakeholders to the decision-making table.

Digital Infrastructure

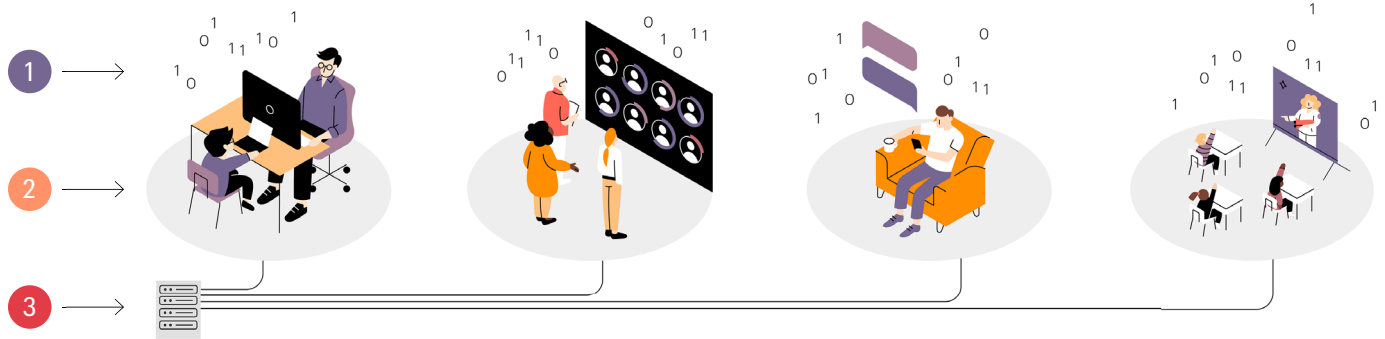
Digital access has emerged as a key determinant of educational success in the 21st century, with many assignments, assessments, and communications taking place online.

Digital infrastructure is much more than devices or software. It encompasses all of the elements necessary for technology to have a positive impact on student learning and community wellbeing. Investments in students' digital skills and the infrastructure that supports them promise to benefit entire communities. Students will need digital fluency and expertise, as well as knowledge of specific tools, to access the jobs of the future. Additionally, access to and understanding of digital spaces is increasingly important to participating in civic life and political discourse.

Educators can also utilize digital infrastructure to help improve teaching and learning practices and outcomes. Not all EdTech products are well-designed or research-backed, but when selected and used thoughtfully, they can generate data that help teachers track student mastery and customize interventions. Effective digital infrastructure can enable students to see their own academic

Digital Infrastructure at Work

Digital infrastructure links different actors within the school ecosystem in order to benefit—and bring together—schools and communities



DIGITAL INFRASTRUCTURE IS:

- 1 the code and architecture that underpins how we interact with the digital world
- 2 the technology, data, and platforms that educators, families, students, and other stakeholders use to participate fully in the school community
- 3 the connecting cables, fiber, data servers, and other systems, along with the physical digital devices that school community members use

performance data, empower them to take action, and learn how to learn. At the same time, digital infrastructure offers schools more efficient ways of collecting data and measuring macro impact, which is especially beneficial to those with fewer resources who shouldn't have to reinvent the wheel when it comes to evaluation.

Finally, digital infrastructure allows schools to extend their services beyond their own walls, to engage different parts of the community, and to bring the larger world closer to students. As chaotic and challenging as remote learning was during the COVID-19 pandemic, it reinforced the idea that learning does not have to be limited to a single building. Through digital field trips, digital communication between schools and families, digital options for participating in class discussions, and digital spaces where students can connect with one another, schools are expanding the imagination of where learning can happen and who can contribute.

Yet, grave inequities exist within this work. Schools and communities of different income levels have vastly different levels of access to digital resources and support. In turn, this lack of access correlates with poorer academic outcomes.⁶ Using a multidimensional framework does not erase this reality. However, when we tie digital infrastructure to the other dimensions, we can reconsider the practices, relationships, and spaces that are most essential to improving teaching and learning, especially for those that have been historically marginalized.

Social Infrastructure

Schools cannot maximize the potential of their physical and digital infrastructure without the people and the strong community ties—the social infrastructure—that help them operate at their highest capacity.

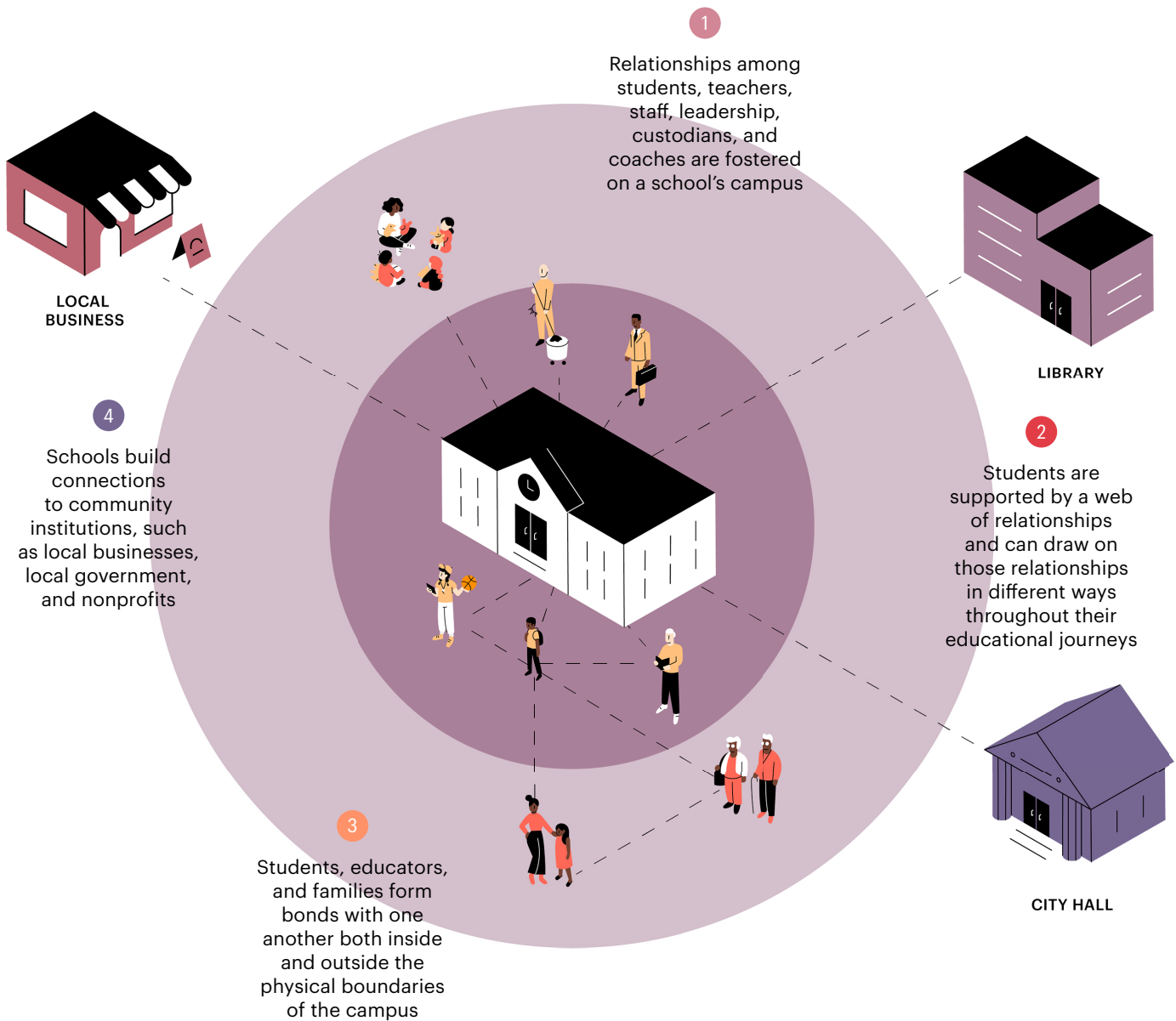
Think about the school custodian responsible for maintaining the physical school building, or the IT worker charged with fixing broken laptops or troubleshooting login problems. Think about the grandparent who comes to campus once a week to tutor children who are struggling to learn how to read. Think about the science teacher who asks local businesses to donate supplies for an upcoming unit. Think about the coaches and after school program leaders who mentor young people and provide safe spaces for them to learn and grow.

Social infrastructure is both people and relationships. In this context, it includes members of the broader school community and the connections between them. It is the building block for a network of deep relationships that research has shown help students succeed—a building block that has been severely challenged during the pandemic at the very time when it is most needed.⁷

Schools can be a force for equity, brokering intentional networks and connections between people and groups that can increase access and potential for success. For example, mentorship programs can help students gain insights about college and financial aid that

Social Infrastructure Brings Together Diverse Stakeholders

Multidimensional schools build flexible connections between a range of people, both inside and outside of the school building. These connections have various strengths and change over time



“Schools can be a force for equity, brokering intentional networks and connections between people and groups that can increase access and potential for success.”

"Aligning work between schools and public institutions avoids duplication of community programs and services, saving taxpayers money in the long-term."

may be overwhelming to take on for the first time, potentially deterring their pursuit of higher education. Internship programs with local businesses can provide students with valuable skills, pay, and references that they can use to land future jobs. Importantly, such programs depend on the assets of the entire community, not just individual students or their families.

When we employ a multidimensional view that includes social infrastructure, we can begin to reimagine the inclusive governance structures that can propel our communities forward. We might imagine a larger role for educators and school staff on local boards and commissions within a city. Or we might reimagine an expanded Parent-Teacher Association (PTA) that includes community voices while still protecting the important role of the parent leader.

Whether sending students out into the community or bringing the community into the school, schools are fostering the relationships and connections necessary for deep learning and engaged communities long into the future.

How a multidimensional framework applies to the work of schools

By conceptualizing schools as more comprehensive than the buildings in which they operate, we have an opportunity to expand what schools can do and bring additional resources to this work.

Reimagining schools as community spaces can allow for process efficiencies in the design and build phases. Inviting community members, such as social workers, public health workers, or technologists into the design conversation to work alongside school stakeholders offers the chance to address a broader array of concerns early on and maximizes the multifaceted value the community may derive from a single building. For example, laying out a school wing to allow for separate public access afterhours can provide critical resources, such as digital access or meeting space, for communities that might not have other places to gather, thus doubling the value of public investment.

Funding efficiencies can also emerge from taking a multidimensional approach. Partnering with institutions like libraries, parks, or local businesses offers schools the opportunity to tap resources from different funding streams beyond what's earmarked for education. Aligning the work between these institutions also avoids duplication of community programs, saving taxpayers money in the long-term. Treating the community around the school as a part of the social fabric makes it easier for school

staff to invite in and ask members for time, talent, or resources—all of which may come at low or no cost.

Finally, viewing schools as interwoven in their communities elevates the role of education leaders. As we acknowledge the importance of schools in this new way, the voices of education leaders can be amplified in other areas of community life, representing the needs of both current and future generations of students and families. Furthermore, the social infrastructure of the school community could be tapped for value, such as reimagined roles for the PTA or student council.

A holistic investment in community

Considering ways to redesign and integrate physical, digital, and social infrastructure for the benefit of the entire community can be the first step in co-creating solutions and funding models that can't be accessed alone. By focusing attention on the intersections between the three dimensions, schools and their larger communities can derive the most benefit.

Imagine state-of-the-art EdTech tools that provide insightful academic performance data, yet are inaccessible to parents who don't speak English or to teachers who are not trained on how to use them. Or imagine a beautiful, multipurpose school building that winds up being inaccessible to target groups who rely on public transit.

Contrast those examples with a school that employs a holistic lens and carefully considers how physical, digital, and social infrastructure can be nurtured and mobilized together for the benefit of the entire community. Done thoughtfully, disrupting the siloed status quo can help elevate and empower voices that are traditionally marginalized. Working in a unified way can also ensure that plans respond to the varied needs and pain points of the diverse community that is served by the school.

Public schools are not subject to market pressures that companies face, and are, by definition, for all. As such, they have opportunities to be key drivers of equity, even as this opportunity lives alongside the historical and present reality of inequities within and between schools. At the same time, public schools live within political ecosystems that can impede progress and demoralize teachers. Applying a multidimensional lens to school infrastructure can't solve these problems, but it can paint a vision for how schools define and realize their full potential, even in the face of challenging odds. ■

2

Multidimensional Education in Action

Schools that want to realize this vision face deep structural impediments. And there aren't always clear blueprints for how they can engage with community members in deeper ways, other than asking for comment on planned facilities upgrades or requesting community support for a bond to benefit local schools.

Even so, many schools are already doing this community-building work incredibly well. In this chapter, we elevate the stories of public schools and their communities that are employing elements of a multidimensional approach to help children thrive as students and people. In some cases, communities explicitly recognize their work as multidimensional, while others do not frame their activities that way. Some schools and communities profiled in this paper acted out of necessity, while others were compelled by a vision for improving their communities. But all are powerful examples of what we can gain by adopting a holistic model for change.

CASE STUDY 1

Pooling Community Resources to Digitally Connect a Region in Burlington, Kansas

Burlington, Kansas is a city of about 2,600 residents, and is situated about 100 miles from both Kansas City and Wichita. As a rural community, it's not the first place that you'd expect to see powerful connectivity and state-of-the-art technology in local public schools. It's the kind of community that an outside observer might think would suffer from inadequate broadband—an acute problem for many rural school districts, especially during the pandemic.⁸

But those assumptions about Burlington would be wrong. “The [technological] infrastructure [of Burlington's public schools] would put us somewhere between a Fortune 200 company and Fortune 500 company,” reflects Doug Vander Linden, the longtime director of education technology for the Burlington Unified School District.⁹

How did the Burlington Public Schools pull off this feat? District leaders were able to bring together multiple stakeholders from across the county to develop and maintain a technological network that provides value for all in a variety of different ways. Technological needs and capabilities have shifted over time, but the coalition itself has never wavered. Instead, it has adapted as the goals and desires of its members have changed.

Coming together to build a network

With just three schools—an elementary, middle, and high school—the Burlington Unified School District didn't have the student enrollment necessary to support many specialized courses. The number of students who might take an advanced math or world language course in any given year was small, and there wasn't always sufficient staff expertise in areas beyond the traditional curriculum.

In the early 1990s, Vander Linden began to investigate ways for the district to address this challenge. He began by enrolling students in distance learning courses, which were offered through a staff sharing agreement with other small districts via an education service center 90 miles away. There was just one problem: the district didn't have a digital network capable of providing the necessary service. And at well over a million dollars, the cost of building a digital fiber network for the area from scratch was prohibitively expensive.

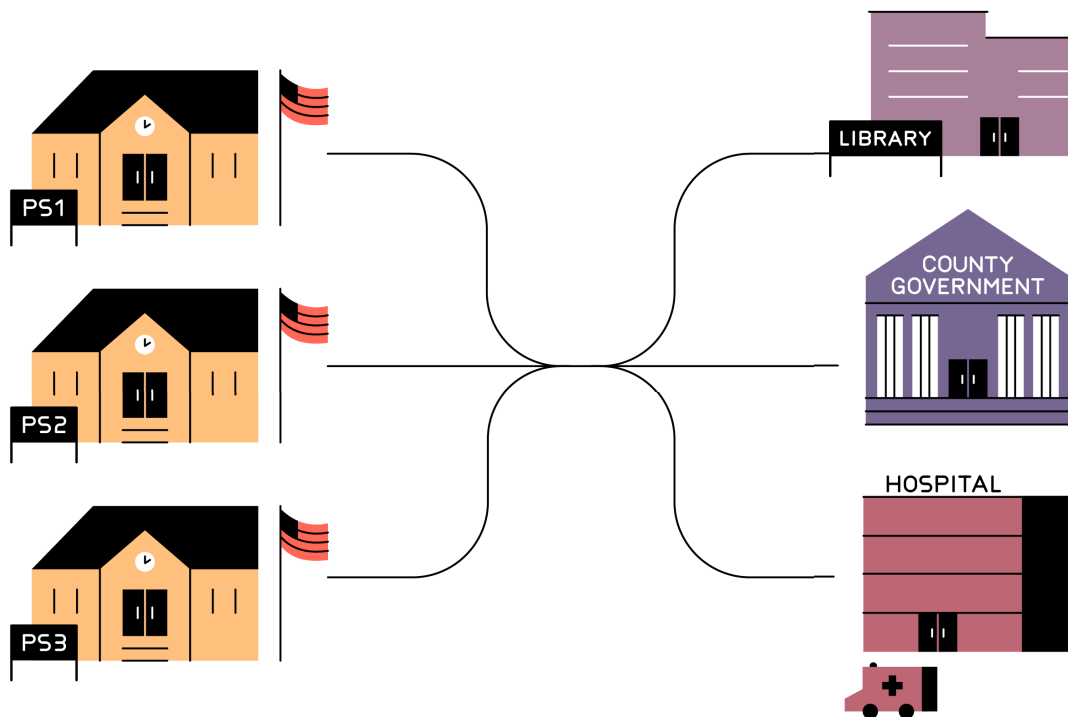
Vander Linden began to explore ways of bringing down the cost for the school district. He realized that other entities, like medical facilities, libraries, and governmental agencies, could benefit from a network for both video and data. If interested entities could share the cost of construction, maintenance, and improvements, all parties could reap the benefits of connectivity at a much lower price point.

The resulting cross-sector collaboration from Vander Linden's idea was the Coffey County Area Network, known colloquially as CoffeyCAN. Participating entities include three school districts, six public libraries, a hospital and all of its associated buildings, and a host of county governmental buildings. Vander Linden recognized that this collaboration rested on maintaining a strong coalition, so when the time came to develop a pricing model, he looked to rural water districts as a model. In these instances, a group of residents who wanted to switch from local well water to a city water supply could request a connection to a municipal water supply, and the cost of building materials would be split equally between those who benefitted from it. Distance from the main water source wouldn't matter; rather, community members would share the cost equally.

For CoffeyCAN, that meant that there would be a 50/50 cost split between the school districts and the county government. The school districts and the county government could decide how to distribute their share of the costs across the multiple school districts and institutions that were part of the county government. It also ensured a sense of collective responsibility, which Vander Linden termed “a *Three Musketeers* mindset,” in that all participants would agree to network improvements that might not have immediate tangible benefits for each individual entity, but could serve the needs

A ‘Three Musketeers’ Approach to Pooling Resources

CoffeyCAN’s model relies on a 50/50 split between school districts and the county government, with those two entities determining how to distribute costs among their participating institutions.



of the county as a whole.

CoffeyCAN has a governing board, which can find grant funding for its work, but it doesn’t have the power to levy taxes. That means it’s up to individual participating entities to find money for the work out of their budgets, which requires each stakeholder to continue to see the value of the network and buy into the broader shared vision for CoffeyCAN.

Empowering the community to maximize the network’s potential

The value of CoffeyCAN comes from the community itself.

“We took a very *Field of Dreams* approach,” says Vander Linden, referencing the famous line, “If you build it, [they] will come.” This meant publicizing good ideas about possible uses for the network, and encouraging the community to take advantage of its tremendous capabilities. In the case of the Burlington Public Schools, the first thing the network made possible was access to distance learning courses.

Vander Linden says the network’s full potential wasn’t clear from

the outset but instead emerged from the ways in which stakeholders used the network. “We [had] no idea what [it was] really going to do until we turned loose 150 teachers countywide to start using it” along with librarians, medical professionals, and others with access to the network.

Over the last decade, the school district has formalized this approach to idea incubation through Cadre, a program that combines EdTech professional development and action research. The program brings teachers together to learn about new tools and to develop ways of using the tools in their areas of instruction. Each teacher presents their approach, and educators learn from one another. Throughout the year, the program includes action research days in which teachers and staff collectively address issues as mundane as low battery life on school-issued devices, and as complex as student assessment. The program has spurred important innovations and discussions, including better coordination between teaching disciplines, and explicit conversations about the ways in which new technologies can advance teaching and learning goals—and the ways they can’t.

Pandemic-ready

The existence of CoffeyCAN and the fact that educators had been partners in its development meant that the school district wasn't left scrambling when the COVID-19 pandemic hit in March 2020. Burlington Schools already had access to a learning management system with a videoconferencing interface. There was an existing technology curriculum, and teachers and students were comfortable using EdTech tools. Students already had school-issued devices that made accessing the network and all of its resources from home a plausible solution for remote learning.

The Burlington Schools were not immune to some of the technological challenges associated with remote learning. For example, district leaders estimated that about 30 percent of students did not have internet access at home. Nevertheless, district leaders were able to draw on CoffeyCAN partnerships to set up hotspots in libraries, parks, and other public places.

Lessons learned

CoffeyCAN is close to 30 years old now. When the network was first conceptualized, the World Wide Web was in its infancy, and its implications and potential uses in schools were still unclear. Over time, the community in Coffey County has found new and innovative ways to use, support, and nurture the network. What can other communities learn from these efforts?

1

Develop a clear vision, but give community members the freedom to develop their own ways of realizing that vision.

From the beginning, leaders at CoffeyCAN understood that the ways the network would be used would evolve alongside technology, and that the end users—teachers at schools, librarians at public libraries, staff at medical facilities, county government employees, and others—would know best how to use it to meet their needs. Over the last decade, Burlington Schools have used the Cadre program to bring teachers together to experiment with EdTech tools and share their work with one another in a structured way.

2

Consider involving a broad range of partners, and invest in the maintenance of those partnerships. Organizers of what eventually became CoffeyCAN recognized that their vision required diverse partnerships in order to be viable; the school district could not develop the network entirely on its own. At the same time, Doug Vander Linden and others involved in early planning weren't sure which entities would be amenable. They couldn't recruit enough partners between Burlington and the education service center to pay for the project. Instead, they turned to different entities throughout Coffey County, and recognized that there was significant demand.

CoffeyCAN has reaped other benefits from casting a wide net for partners. By requesting proposals from many vendors for the construction and maintenance of the network, CoffeyCAN ensured that it would have several viable proposals and significant leverage in negotiations. Diverse partnerships have also allowed CoffeyCAN

to pivot to different providers if one vendor or supporting group shuts down, offering resilience and reliability for network users.

Doug Vander Linden emphasized the importance of maintaining and nurturing social infrastructure. Both partner priorities and personnel change, so it's important to continually renew relationships and ensure that representatives from all partner organizations remain actively engaged.

3

Build trust by prioritizing quality, service, and responsiveness.

Trust is an important ingredient in building and sustaining powerful partnerships. With CoffeyCAN, building trust with teachers and staff in Burlington Public Schools began with listening to end users' needs and empowering users to experiment. But it also required that CoffeyCAN deliver on its promises.

Similarly, Edtech leaders in Burlington Schools recognized that they needed to maintain quality. Glitches were inevitable, but when they came up, staff worked hard to address them immediately. This was especially important during pandemic school closures when technology was essential for communication and maintaining trust.

4

Establish a clear north star to help guide future program iterations.

The world is full of promising new technologies, many of which are costly, and often not deeply or independently vetted. In an effort to steward limited resources responsibly and to deliver on the organization's mission, district leaders in Burlington identified three areas to guide the adoption of new technologies: teaching

Case Study #1

KEY TAKEAWAYS

- It's important for all partners to have some skin in the game. The roles and needs of partners may evolve over time, and partnerships need to be flexible enough to accommodate those changes.
- Working with and across public institutions can open the door to new funding streams and efficiencies, resilience in the face of challenge, and outsized impact beyond what any one institution could accomplish alone.
- Building partnerships can provide new opportunities for growth and innovation for all involved.
- Philanthropy can play a vital role in supporting innovative partnerships by identifying success stories, disseminating findings, and brokering connections between community members who want to learn from innovators.

(including management and logistics), learning, and assessment. The district would only consider technologies that would improve their capacity in at least one of those areas. This focus allowed district leaders to stay focused on a shared vision and steward school resources wisely.

CASE STUDY 2

Building a Networked Vision for Teaching and Learning in Philadelphia and Allentown, Pennsylvania

Chip Linehan remembers the moment when everything clicked. He was standing in a conference room after conducting interviews with young people as part of a design-thinking process for a new public school in North Philadelphia called Building 21.

“We had all these post-it notes up on the wall,” Linehan recalls. “As we were working through [them], we had this acknowledgement of something that was so obvious: relationships stand at the foundation of everything that we do in schools.”

Linehan and his co-founder Laura Shubilla were no strangers to this idea. Shubilla had spent twenty years in education and youth development, and as doctoral students in educational leadership at Harvard, both she and Linehan had read the research on the importance of relationships to student learning outcomes.¹⁰ But Linehan never imagined that that concept would sit at the forefront of a new school model.

After all, Building 21 had other things that made it different from a typical public high school. It used a competency-based learning model, in which students were assessed on their progress towards mastery of a set of both academic and non-academic competencies.¹¹ It employed nontraditional forms of assessment, including portfolios. It offered young people opportunities to

apply learning to real-world problems by engaging with the larger community. It emphasized the importance of student choice and voice. And it billed itself as a work-in-progress, to be shaped by the students, families, educators, and community members who were a part of the school—an approach that required deep investments in diversity, equity, and inclusion.

Relationships are key to all of this work, of course. But it was at that moment, staring at the post-it notes, that the founding team realized that Building 21 needed to provide an infrastructure to build, nurture, grow, and renew those relationships. Without that infrastructure, all of the new approaches that Building 21 offered—the competency-based learning model, the real-world application, the student choice and voice—would be for naught.

A relationship-based approach to a ‘permeable school’

The relationship-based model at Building 21’s two lab schools in Philadelphia and Allentown, Pennsylvania exhibits itself in a number of ways. From their inception, both schools set aside daily time for advisories, in which staff members meet with small groups of students. In these advisory groups, students might compare notes on classes or brainstorm strategies for completing assignments. Critically, these advisories also provide opportunities to talk about life beyond the classroom, discuss challenges, and develop plans for the future.

Jose Rosado, the principal of the Allentown school, sees the advisory groups as essential to promoting students’ academic success. “Under the guidance of a caring adult, our students are provided meaningful opportunities to transition smoothly into high school, form strong relationships with peers and staff, and gain confidence and skills to achieve their goals,” says Rosado.

Building 21’s emphasis on relationships is baked into the school’s approach to learning. Shubilla describes the result as a “permeable school.” “We [are] bringing the outside world into the school, and we [are] pushing our young people out of the school,” she says.

Community members come into the school to co-lead classes on topics where they have special expertise, or support students in exploring different careers. Community members also mentor students and sponsor hands-on learning experiences, including internships and project-based learning opportunities. While remote conditions made some of this work challenging during the pandemic, other community-oriented learning opportunities continued in both virtual and in-person formats.

In an example of this type of practical community engagement, the Allentown school partnered with the county’s local elections board to train students to serve as poll workers.¹² Students gained a better understanding of democratic practices and processes, which they described as empowering. Not only did students observe the power of voting firsthand, but they saw how valuable their own skills, contributions, and communities were in making the process work.

“I had a pin that said, ‘I speak Spanish’ and that was easier for [Spanish-speaking voters] to find me and you would just explain to them what they need to do and help them,” said Dimly Estuvz, a senior.



A different approach within an existing system

Building 21's approach is unusual for public schools, which the lab schools are. Students are held to the same academic standards and requirements as their peers in public neighborhood-based schools in Philadelphia and Allentown. But Building 21 has the freedom to design its own competency-based approaches to achieving those goals.

Linehan and his co-founder believed that students and families who wanted an alternative approach to education shouldn't have to look to expensive parochial or private schools, but should have strong options within the local public school system. They also wanted to partner with district leaders, rather than requesting a public charter to operate.

Leadership in both the Philadelphia and Allentown school districts recognized Building 21's potential, and Linehan says that the relationship has been collaborative and productive. "Instead of just trying to do the same old thing again, I think there was, and continues to be, an appetite [within the school districts] to try and do things differently," Linehan says.

These relationships are not without their challenges. For example, the school district-provided buildings in which the lab schools are housed aren't always configured to be flexible spaces for different types of learning or group size, and funding from the district doesn't cover all of Building 21's costs. Building 21 employs a number of support staff that most district high schools don't have, and has developed its own competency-based curricular alternatives in the absence of compelling off-the-shelf resources. Building 21 leaders have secured philanthropic support for many of these custom features, a privilege that they recognize is not available to many traditional public schools. This is one reason that Building 21 has been able to prioritize participation over revenue in building a Learning Innovation Network for educators and schools who are implementing competency-based learning models.¹³

Flexible funding for an evolving organization

Altogether, additional staff, instructional materials, resources for partnerships, and other items atypical of traditional schools cost Building 21 lab schools up to 15 percent more than the school district funding allocated to them. Linehan says that that percentage has already declined from the first years of the schools, and he expects that percentage to decline further. But Building 21's unique lab school model will always require philanthropic support.

Yet, exactly *what* will be supported in the future isn't always clear. That's because Building 21 has changed over time, in response to the needs of students, staff, families, and community.

Ayris Sanders, director of lab schools, explains that in its first year, Building 21's Philadelphia location relied on each teacher to develop curricular materials. But Building 21 leaders realized that teachers shouldn't be saddled with that task on top of their other responsibilities. Instead, Building 21 centralized curriculum design in partnership with lab school teachers, and allowed teachers to modify and personalize resources for their students. Building 21 also developed its own learning management system after finding that there wasn't anything available on the market that fit the school's

needs. This added to the cost of the initiative.

Amid all these twists and turns, Linehan says that Building 21 has been lucky to find funders who have offered unrestricted funds or grants that are flexible in other ways, such as lightweight reporting processes that do not take staff away from mission-critical work and flexible metrics that can reflect ongoing changes to programs and goals. Funders have also been vital partners in helping Building 21's leaders think through different approaches to their teaching, learning, and revenue models. That flexibility and thought partnership has given the lab schools the ability to grow and develop alongside their school communities.

It has also allowed Building 21 to experiment with new approaches, including a network to coach, provide resources, and build community with other educators, schools, and districts who are implementing a competency-based approach. And crucially unrestricted funding has supported everything else that goes into running the organization.

Linehan has seen a direct connection between the innovative work that Building 21 is able to do and the type of philanthropic support it has received. "The more strings that are attached [to grants], the more constrained people get," Linehan says.

He emphasizes that this approach to philanthropic support actually encourages accountability. "Give us more freedom in how we think about allocating, and more accountability in the results that we deliver," Linehan says.

Linehan says that the results of this type of funding are paying off. "The results that we're seeing [in the lab schools] are really powerful," he says, citing the correlation between competency performance levels and later college persistence.¹⁴

But he also stresses that there is more work to do. Even as the organization's long term goals remain consistent, change, evolution, and iteration are—and will always be—important to the Building 21 model. Flexible funding makes that work easier.

Lessons learned

Building 21's lab schools are nearly a decade old now. In that time, Building 21 has scaled its approach to advise and support a network of schools around the country. They're also continuing to develop new programs, while growing and evolving existing ones. These are the kinds of efforts that can eventually embed new and innovative approaches, such as competency-based learning, within existing systems like traditional school districts. What can schools and philanthropic organizations learn from these efforts?

1

Partner with existing systems, while also engaging and empowering constituencies that have traditionally been left out of these systems. The co-founders of Building 21 worked with the public school districts in Philadelphia and Allentown, Pennsylvania, to create their lab schools.

This created some constraints around academic requirements and physical space. But the partnership also allowed the Building 21 lab schools to serve a broader set of students and families, and to engage those community members in unique ways. The relationships

that Building 21 leaders cultivated with district leaders also allowed them to engage in larger policy discussions within the Philadelphia and Allentown districts, and to advocate for system-level changes.

2

Develop metrics for evaluation that correspond to strategic goals, and continue to evaluate those metrics and their data. Iterate accordingly.

At Building 21 lab schools, students submit portfolios measuring progress towards academic and non-academic competencies, which are evaluated on college- and career-readiness rather than grade-level expectation.

At the same time, Building 21 staff continue to capture relevant data and feed information back into the lab schools' approach toward instruction, even apart from evaluation. For example, drawing on research that shows that students benefit from positive interactions with adults, Building 21 staff record every positive shout-out from teachers and staff as compared with every infraction a student receives. They aim for the ratio of the two data points to favor the positive interactions.

3

Seek opportunities to share and scale resources while staying committed to local assets and community strengths. Leaders at Building 21 recognized that they could expose more students and communities to their competency-based approach by sharing their expertise, resources, lessons, and innovations with other schools and districts.

At the same time, each community has different needs, assets, goals, and structures. Building 21's approach to the Learning Innovation Network involves individualized coaching, and allows other schools and districts to use the resources that make the most sense in their communities.

4

Flexible philanthropic support is the best complement for programs that are constantly evolving. Building 21 has benefitted from unrestricted philanthropic funding that can be invested in operating expenses, new projects, and other unanticipated needs. Accountability for using that funding is important, but Building 21's experience with funders shows that that accountability needn't take the form of onerous reporting on narrow measures. Instead, Building 21 has benefitted from partnering with funders to share knowledge, expertise, and connections about how to refine their model and take their work in new directions.

Case Study #2

KEY TAKEAWAYS

- New school models can thrive within traditional school districts when there is a demonstrated commitment to the community, deep local relationships, and a willingness to remain accountable to traditional measures of success.
- Evaluations of student learning can be so much more than just test scores. It's important for school communities to consider a range of metrics that correspond to the learning outcomes they'd like to see, and to iterate according to what they are seeing in the data.
- Schools have an opportunity to harness some of the important findings from the learning sciences—the importance of relationships, application to the real world, and student voice, among them—to improve learning outcomes.
- Philanthropy can best support innovation by providing unrestricted funding that allows projects to shift to match the changing needs, goals, and assets of the community.

CASE STUDY 3

Schools as Conduits for Caregivers to Build Community in Oakland, California

An after school program leader in Oakland, California noticed that a light fixture at the school wasn't working. She dreaded having to navigate the school district's ticketing system for repairs, and knew that a parent of a child in the program worked as an electrician. The after school program leader asked if the parent might come in and take a look at the light. The parent repaired the light fixture in short order.

At first glance, this is a straightforward story of a parent sharing his expertise in order to assist a school community. But consider all of the things that needed to be in place in order to facilitate this

"The vast majority of digital tools available for community-building are hosted by commercial platforms whose incentives are more aligned with financial extraction rather than meaningful connection."



exchange: The program leader needed to know about the parent’s expertise. She needed to have a preexisting relationship with the parent, as well as the ability to contact him. The parent had to be both willing and able to come to the building to examine the light fixture. The program leader had to open up the building on a weekend.

What if there were a way to create the infrastructure that would enable exchanges like the one between the parent-electrician and the after school program leader to take place seamlessly, more frequently, and at scale? What if there was a way to make school-related digital spaces safe and comfortable for all members of the community, and to mitigate bad experiences that might occur? What if there were a way to build and center meaningful relationships around the school, in equitable ways that served the needs of the community?

Those are the central questions that are animating the nonprofit New_ Public’s “Connecting Caregivers through Schools” design sprint in Oakland. As New_ Public’s co-director, Deepti Doshi explains, the design sprint is one piece of New_ Public’s efforts to address a few key questions: How can we design technology and social media that serves as a space for people to build community in a way that holds plurality? And how do we scale many of these small spaces to serve as the foundation for a better democracy?¹⁵

A guided, bottom-up process for connecting an Oakland school community

The vast majority of digital tools available for this type of community-building are hosted by commercial platforms whose incentives are more aligned with financial extraction rather than meaningful connection. A parent who serves as a community leader at a public elementary school in Oakland came to New_ Public with a question: What if we could design our own technology to build a school-based caregiving community that creates deeper connections between families, students, and educators?

New_ Public and the parent leader initially envisioned a workshop that would bring together multiple stakeholders in the school community to develop a vision and chart a path forward. As a new initiative with a fledgling coalition, the project wasn’t in the running for funding from government or large-scale grants, but unrestricted funds from philanthropic organizations gave the project the flexibility to adapt as its needs and goals shifted.

New_ Public hired Reboot, a design firm committed to structural

justice, to plan and facilitate a design sprint, which was initially scheduled following a recruitment phase. However, the team quickly realized that achieving the kind of equitable and inclusive solutioning they wanted wouldn’t be as simple as bringing people together; they first needed to understand the needs, experiences, goals, and talents of the participants themselves.

Joi Rae, who managed the design sprint for New_ Public, recalls that this “pulse of the community’s thoughts” was critical to the success of the project. “Getting people in the room from many different perspectives and backgrounds isn’t easy, but making sure that they all feel heard and seen in the moment can be just as difficult,” Rae says. The fact that New_ Public staff and partners knew where everyone was coming from helped to overcome this challenge.

This exploratory phase would ensure that all participants came into the workshop on a similar footing and focus on concrete actions.

With the parent leader’s help, New_ Public identified and conducted conversations with 18 stakeholders—caregivers, school staff, and researchers. They built a sample that represented the community as a whole, and that included people who might not have time or resources to be part of traditional school institutions like the PTA. The insights gleaned through interviews were used to design the workshop itself.

On the morning of the workshop, participants spent time taking stock of their school community’s assets and needs. They then self-selected into groups to propose solutions to the issues they felt most connected to. One group was interested in how families could get to know one another better. Another group was interested in how schools and families could best communicate with one another. These groups were supported by trained facilitators. As the participants were also the users of these technologies, they were able to design solutions specific to their unique context. They voted on the most promising approaches and created storyboards to see them through.

The next steps of the process are a work in progress. Eventually, New_ Public will bring community members together to design and prototype solutions. Regardless of the prototypes’ success, the process itself represented a step towards achieving the larger goal of transforming and empowering the school community. Whatever outcomes and metrics are chosen, they will come directly from the community, and evolve in response to its specific wants and needs.



Early lessons learned

It’s too soon to say which elements of the New_ Public project in Oakland will be most important and what challenges will arise in the future. Here are some of the emerging lessons to date:

1

A foundation of trust is important. New_ Public worked diligently to create an environment of trust. The facilitators of the interviews and workshops tried to avoid jargon that might be alienating to participants who hadn’t previously been part of a process like this.

The interview phase and pre-meeting of stakeholders who participated in New_ Public’s workshop, along with the leadership of a parent who participants already knew, set the foundation for strong relationships and trust. This made it easier to hit the ground

EQUALITY	EQUITY
 <p data-bbox="207 436 396 569">Each individual or group of people is given the same resources or opportunities</p>	 <p data-bbox="493 436 743 621">Recognizes that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome</p>

running and to have tough conversations about sensitive topics like racial discrimination, trauma, and immigration status in the school community.

It's not always possible—or desirable—for every group that is invested in change to have pre-existing bonds, but establishing some trust before tackling tough questions is crucial.

2 **Equity requires time and resources.** All too often, programs invite stakeholders into spaces that they did not have a role in designing to comment on projects that they did not propose. New_ Public delayed its workshop in order to interview stakeholders about their experiences, goals, and needs. New_ Public then offered a workshop experience that was based on what they heard across the interviews. While it was a hard decision to push the process back, equity happens on its own timeline.

The workshop was resource intensive, but New_ Public was able to leverage unrestricted funds from philanthropy in order to make it happen. That support also enabled the program to provide childcare and transportation, factors that might have otherwise been a deterrent to caregiver participation.

In other contexts, organizers might change meeting times to accommodate a variety of job schedules or offer multiple pathways to participation, including video, phone call, and asynchronous feedback. If done right, all of these efforts can go a long way toward promoting equity.

3 **Equitable approaches recognize that community members can give and receive in different ways and in different amounts.** In the course of the design sprint, some caregivers acknowledged that they needed a lot of support from the community. For example, a parent explained that transportation assistance from school to home for her daughter could help ease stress tremendously. Other caregivers expressed that they needed less, but could give more to the community.

This giving and receiving isn't static, and it's important to recognize that equitable approaches mean lifting up and meeting community members where they are and responding to their needs equitably,

rather than merely apportioning resources *equally* between them. Laying out this principle from the outset helped participants in the project feel comfortable expressing their needs, and finding matching community assets.

4 **Flexibility and a multi-staged approach are important.** With new projects involving many stakeholders, it's important for coordinating nonprofits to remain flexible and respond to the needs and goals of the community. Adopting a multi-staged approach where the next step isn't fully defined until a previous step is concluded can help with this. Philanthropy can support this flexibility by offering unrestricted funds.

The New_ Public school project in Oakland had a general roadmap that articulated the vision and payoff for participants and the general community. But the exact contours of the process are still being shaped. Community members played, and will continue to play, an active role in co-designing the next stages of the project.

5 **Offer a range of ways for community members to engage with the process.** Not all members of the community can engage in such a time-intensive process, and not all schools can undertake projects of this magnitude. Yet both can undertake elements of this work by breaking down their goals into manageable pieces, and bringing in models, resources, and lessons learned from the broader ecosystem where possible. The design of a project should

Case Study #3

KEY TAKEAWAYS

- School communities are vast and diverse, and may include actors that don't typically spend much time in the school building. It's important to involve and value all of these stakeholders in design processes, and to remove friction for participants for whom such processes might feel new or anxiety-producing.
- Ensuring projects are rooted in equity requires listening and responding, which may involve changing project direction. Designing a flexible approach, timeline, and success metrics is important to account for such changes. Philanthropic organizations can offer flexibility.
- While community workshops should be rooted in a strong theory of change, it's equally important that they are designed to reflect the lived experiences of participants, and to allow participants to suggest practical solutions for their communities.

3

Shaping Multidimensional Schools

The case studies that we've explored offer different routes for leveraging and strengthening physical, digital, and social infrastructure to elevate school communities. Projects of any size, shape, and intensity are important if we are to collectively address our current needs and reimagine the future simultaneously. The common thread is that they are responsive to the community's needs and values, and the constraints and opportunities that the context offers. Philanthropic organizations must also invest in a range of initiatives, and allow school communities to set the tone about what types of projects are necessary and important for their growth and strength.

What does this process for building such community-driven, multidimensional programs look like?

1. Building a foundation of trust and partnership

The case studies that we've explored show the importance of trust and partnership among diverse stakeholders for multidimensional projects. In the case of New_ Public, organizers instituted an exploratory phase to understand the context and perspectives of school community members before they launched a design phase. This approach established trust and allowed conversations and connections to go much deeper than they might have otherwise. It also allowed organizers to create the conditions for success by responding to participants' needs around childcare, transit, and honoraria.

Trust can be established in other ways as well. Leaders of the CoffeyCAN initiative built community trust by prioritizing quality and service and responding to the needs that users of the network voiced. Their reliability and responsiveness demonstrated the commitment that the district IT department had to teachers, school staff, students, families, and other users, and allowed all CoffeyCAN users to see the value of the network.

This work of building trust and partnership is challenging and time-consuming, but it is also foundational to creating strong, long-lasting partnerships. The delays in the New_ Public project to accommodate a research phase helped solidify trust and ensure equity. The ongoing work of the Burlington Public Schools and of Building 21 to maintain and renew relationships is also time consuming, but important for projects that serve a diverse range of stakeholders. A broad range of partners extending to all sectors of the school community writ large, and ongoing maintenance of these relationships is key.

2. Co-designing a shared vision with flexible pathways

The case studies that we've explored focus on processes for

articulating the desired vision and outcomes that stakeholders would like to see. In the context of schools, the focus has traditionally been on student proficiency in math or language arts, graduation rates, attendance rates, retention, and other measures of academic achievement. But maybe a school community—inclusive of students, teachers, staff, families, and others—would ultimately like to see more engagement among parents and other family members. Or maybe it would like to see students better prepared for careers.

Bringing in other stakeholders allows us to articulate desired outcomes that may be more expansive. Having insight into what each group and individual are looking for gives us new ways to measure success, document progress, and evolve. For example, while we may still look at test scores or graduation rates, we may also look at how lived experience has changed in a community. That's the case in Building 21's lab schools, where success is measured in both the correlation between students' demonstrated performance on competencies and college persistence, and in the reach and adoption of its model by other entities.¹⁶

Furthermore, the different ways that that vision can be realized and the specific examples of what success might look like will be deeply personal and incremental. Perhaps a single parent is looking for free childcare during PTA meetings so that she can attend. Or maybe an employer would find an internship-to-hire program valuable for meeting her hiring goals. All of these visions for success will tie back to the larger vision, and need to be considered as possible ways of working toward that shared vision.

Thinking beyond traditional vision and metrics for student success allows us to imagine what is possible when we think about school holistically, beyond a space for children to learn.

3. Assessing school and community assets

Advocates of participatory community asset mapping processes have noted that these assets come in many forms, and can be leveraged in different ways.¹⁷ Community assets could be human, drawing on a strong social infrastructure. For example, New_ Public's work in Oakland benefitted from the fact that participants entered the design session with a foundation of trust that was built through strong relationships with a parent leader and through interviews conducted prior to the session.

Some school systems have built explicit programs to draw on community talent, such as Pickerington Schools in Ohio, which leverages the talents of bilingual family members to work as interpreters for parent-teacher conferences and registration, and to serve as trusted resources for other types of outreach to non-English

speaking caregivers.¹⁸ Others establish themselves as assets for the community beyond their physical walls, as is the case of the Youth Coding League in Paducah, Kentucky which is designed to lift up a new generation of talent that will propel the local economy forward.

Community assets could also be monetary or institutional. Building 21's lab schools have leveraged the physical school buildings provided by partner school districts as spaces to invite community members to share their expertise with students. These community assets tend to rely on existing relationships between sectors or organizations, allowing for the smooth construction of physical or digital infrastructure, or agreement about how best to use shared physical spaces.

In another case, the city of Wimauma, Florida and county agencies including the Hillsborough County School District, took a bottom-up approach to developing a revitalization plan in early 2022.¹⁹ The project is designed to spur the growth of small businesses, build three new schools, and support affordable housing, among other efforts to improve living conditions in a city where nearly one in four residents lives below the poverty line. A center at the University of South Florida led the design process, which involved local nonprofits representing different stakeholder groups and community members. The result was a plan that reflected the interests and priorities of the entire community.

Communities can set themselves up for success by understanding the resources that they have available to them through an asset mapping process. Sometimes these resources might include identifying a talented and trusted individual or an available physical space. In other cases, the community resources might involve networks of institutions that have a track record of success working together.

Such work is deeply challenging, especially in a political climate that responds more to loud, offensive voices, denunciations, and silencing of critics rather than collaboration or careful consideration of relevant research. Yet, drawing on community assets can also challenge destructive discourse and offer a different way forward.

4. Finding sources of support to fill gaps

An asset-based approach empowers school communities to leverage their existing resources in creative ways. It also encourages communities to jointly identify gaps between their vision and the resources at their disposal. This is particularly important in historically under-served communities, where material resources may be lacking, even if talent and creativity abound.

In such cases, philanthropy can be an important partner in filling gaps. That was the case in New_ Public's school design sprint in Oakland, where the community lacked the financial support to fund the process, even as the design sprint took stock of and relied on the resources that the community brought. It was also the case in Building 21's lab schools, where philanthropic support allowed the schools to hire additional support staff and develop competency-based learning materials that school district funding alone wasn't able to support.

In other cases, communities can pool their resources to address asset gaps, such as the partner institutions in Burlington joining together to fund CoffeyCAN. All of the stakeholders benefited, but a single entity could not have undertaken the project on its own.

Whether gaps are filled by philanthropy, pooled resources, government funding, or some other form of support, the school community's strength derives from the many stakeholders that it encompasses and the willingness of those stakeholders to contribute resources for the benefit of the whole.

5. Embracing flexibility and sustainability

Even as it's important to keep an eye on impact, the case studies examined in this whitepaper also show the need for flexibility and sustainability. For example, CoffeyCAN was designed to be adaptable enough that it could evolve as video and data needs shifted with technological and learning changes.

Other examples can be seen in ecosystem organizations like CSforALL and NYC FIRST. CSforALL's SCRIPT Framework guides teams of district administrators, school leaders, and educators in creating or expanding computer science education in their school communities. The framework is designed to be flexible enough so that each community can chart its own path for coding instruction and make adjustments when needed.

NYC FIRST operates two STEM Centers that are open to the public, including one at a New York Public Library branch. Both STEM Centers offer formal and informal courses, programs, and workshops, as well as physical space, advanced equipment, and resources for people of all ages to tinker and learn. STEM Centers weren't designed with a set agenda or curriculum in mind, but were positioned with the materials to let community members chart their own path.

Just as organizations should remain flexible, it's equally important for funding to be flexible. Philanthropy and other types of public-private partnerships can give schools the space to imagine new possibilities for building community. This helps absorb some of the risk of trying something new, which can unlock large-scale public funding to sustain the work once it's proven.

That's the case of Reimagine America's Schools (RAS), a project of the National Design Alliance that brings communities together to rethink and recreate school and learning infrastructure. RAS is currently working with two communities in Atlanta and Clayton County, Georgia to develop strategies that connect schools and neighborhoods with the goal of creating healthy communities. On board with the effort are school staff and leaders, community members, governmental leaders, and students themselves.

This partnership is resource-intensive, but philanthropic organizations have footed the bill for the proof-of-concept and will help with planning for ongoing sustainability once the initial co-design phase ends. Those involved in the project are quick to explain that while the process is replicable, the exact contours are place-based and are driven by the community itself.

Employing philanthropic resources to cover the testing phase clears the way for public funding to be redirected towards now-proven, more impactful results. That was the case in NYC's Consortium for Research and Robotics, which first received significant funding from the state government after proving the model with philanthropic funding.

In the next chapter, we offer a range of ways for the philanthropic community to jump start—or further advance—this critical work. ■

4

Join Us in Reimagining School and Learning Infrastructure

In ways big and small, communities throughout the United States are working to transform the meaning of “school.” A variety of stakeholders—including school leaders, educators, students, families, policymakers, community activists, local businesses, and others—are breaking down the traditional physical, digital, and social divides between schools and the larger neighborhoods in which they are situated. These stakeholders are leveraging existing community assets and securing additional resources to turn their big ideas into a reality.

Some of these groups may term their efforts “multidimensional.” Some may explicitly name physical, digital, and social “infrastructure” as the connective elements that drive their work. Most do not. Regardless of terminology, it’s crucial that the philanthropic community support such efforts.

Multidimensional approaches require a lot of human and material resources to build trust, establish community, and invest in infrastructure. Yet, many groups pursuing a more holistic model have scant resources beyond the ingenuity, will, and commitment of their stakeholders. As we have seen, communities of color and low-income communities often have fewer material resources to work with. Philanthropy is not the answer to these ills, but it can be a pivotal partner for those who have traditionally been left out of infrastructure improvements. By employing a multidimensional view of school and learning infrastructure, philanthropy can identify, support, and make connections between communities that are engaging in new ways of thinking about what their schools can be.

Siegel Family Endowment believes that philanthropy can be a powerful force for change—but only when it works intentionally with communities to design processes for leveraging existing infrastructure and championing those communities in securing new resources. At Siegel Family Endowment, we’re recommitting ourselves to these actions, and invite you to join us.

1. **Take risks that others can’t take.**

By definition, multidimensional approaches don’t fit neatly into existing frameworks for securing funding. Because this work often involves so many stakeholders and infrastructures, it’s typically costly and comes with considerable risk. Here’s how philanthropy can help take that burden off of community members:

- **Help get projects off the ground and chart a path toward sustainability.** It’s often hard for multidimensional projects to

take shape because they rely on unifying diverse stakeholders and institutions that are often disparate. Philanthropy can pilot multidimensional models and invest in creating pockets of innovation that can provide frameworks for systemic change. Early investments, convenings that bring together groups that are typically siloed, and incubation programs can help a project in its earliest stages, and establish strong ties between community and philanthropy. Philanthropy can make initial investments meaningful and durable for the long-term when it helps organizations chart their own paths toward sustainability.

- **Invest in areas where few other external entities are able or willing to provide support.** Government entities are often reluctant to support approaches that are as-yet unproven, as multidimensional efforts often are. And the politics of local school boards sometimes make it challenging for school communities to find support for progressive programs. In addition, multidimensional approaches sometimes don’t meet the requirements for traditional funding sources. Philanthropy doesn’t have those constraints, and can create laboratories for communities to develop new approaches. At its best, philanthropy acts as society’s risk capital, assuming responsibility for false starts and setbacks and offering communities the resources to try new ways of doing things that they believe will most benefit their communities. This can pave the way for unlocking larger public funding.

2. **Bring together stakeholders who are normally siloed.**

Throughout this white paper, we’ve highlighted examples of projects that involve many different groups, including those within the traditional boundaries of school and those who have traditionally operated outside of it. Philanthropic organizations often sit at the intersection of these groups. Here’s how philanthropy can engender new coalitions:

- **Support diverse stakeholders in jointly developing a shared vision and metrics for success.** Different communities have different needs, and different stakeholders have different priorities. Philanthropy can provide processes and mechanisms for stakeholders to discuss their vision for the future, iron out

differences, and identify areas of common ground. It can also work with stakeholders to identify ways to leverage all three dimensions of infrastructure, and to identify methods for drawing strength from all three. As a field, it is well positioned to serve as a convener and to help broker connections with entities like government agencies that are often challenging for community groups to access on their own. Philanthropy can also help these diverse groups set their own metrics for measuring the impact that they would like to see.

- **Invest in multiple points of entry across a range of scales.** Not all stakeholders are able or interested in launching ambitious efforts to fundamentally transform their school communities. Neither are all systems able to support immediate

action toward systemic change. We need to find ways to engage people where they are by offering them appropriately-sized opportunities to raise their voices and take action. Philanthropy can invest in both small- and large-scale projects, recognizing that even small interventions can have meaningful impact. These initiatives should help stakeholders see the connections between physical, digital, and social infrastructure, and design projects that take advantage of all three.

- **Bring funders together to discuss both practice and process.** Too often funders operate on their own, focused on their particular funding priorities. There is an opportunity to build relationships between funders to benefit communities that are applying a more expansive lens to school infrastructure.

It Takes a Village

While we feel especially compelled to urge fellow funders to view school, teaching, and learning through the multidimensional lens of infrastructure, we recognize funders are only one type of stakeholder. We've seen different groups take steps both big and small to encourage multidimensional thinking that results in the type of transformative change. Here's how some of those groups can get started:



School leaders, staff, and educators

can normalize the notion of an inclusive and broad school community. That might mean creating a PTA that includes representation from residents of the surrounding neighborhood or creating a program for educators to pursue leadership positions in the community. Whatever form it takes, the adults that are based in schools have an opportunity to expand the table and set new places for new constituencies.



Students and families

can co-create and participate in opportunities to build trust with school staff, leaders, and educators. Whether it's a student participating in a teacher's check-in poll about how she's feeling or whether it's a caregiver arranging for translation or child care at a community event, establishing trust, comfort, and relationships between all members of the school community is important. Student and family voice and activism are a key piece of that.



Local businesses and community members

can offer their expertise to the school, and draw on the resources of the school. That might involve a neighborhood resident participating in a career day for students or a local business leader committing to hire a student intern in the summer. Or it could mean local residents showing up for a school theater production or holding a community meeting in a school auditorium. Regardless of approach, establishing two-way connections between the school and the people that surround it is vital.

We hope that you will take this white paper as an invitation—to learn from what communities across the country are doing to break down silos and reimagine school and learning infrastructure; to join with other philanthropic organizations in understanding how we can support such efforts; and to see how far a multidimensional lens can take us in creating change.

There are even more opportunities to encourage funders to consider multidimensional projects that might not fit neatly in a traditional program area. Funders can recommend other funders and broker connections when they are not in a position to fund a particular effort. They can also leverage learnings about effective processes in giving and relationship building for the benefit of the whole philanthropic sector.

3. Listen to the community and share what you're learning with other communities.

The examples highlighted in this report found success because they were driven by communities themselves. Here's how philanthropy can use its position to set a strong foundation for communities to chart their own course in developing and sustaining multidimensional projects:

- **Identify and advocate for policies that will propel change.** Philanthropy can look across the policy landscape at the local, state, and federal levels to identify public policies, programs, and practices that are effective for advancing the outcomes that are desired by community stakeholders. It is also well positioned to recommend policies that involve various dimensions of infrastructure that are often considered separate by the government. Philanthropic organizations can partner with one another to advocate for these policies and a more multidimensional approach overall, and may even support grassroots organizing and education projects to build cadres of policy change agents locally.

- **Create frames and impact measurements that communities can make their own.** There's no one-size-fits-all solution for collective action and community driven change. There are still only a few models for metrics and accountability that reflect a multidimensional approach. However, philanthropy is well-positioned to propose processes and frameworks that communities can use to assess their own strengths, goals, and paths forward. Philanthropy can also be a valued partner in developing flexible approaches to data collection and measurement that are aligned with the capacities communities already have and the impacts they want to see.

- **Share both challenges and successes.** Philanthropy can play critical roles in disseminating learning, challenges, models, and examples to others. That's the case with Education Reimagined's The Big Idea and Transcend Education's reinvention stories.²⁰ We learn as much—if not more—from hardship as we do success. Compiling stories that are specific to particular communities but address universal challenges helps to foster relationships between changemakers across communities and to identify differences and similarities in context and approach. When diverse stories are available, stakeholders can triangulate between case studies and use the materials and approaches that are going to be most helpful to them.

We hope that you will take this white paper as an invitation—to learn from what communities across the country are doing to break down silos and reimagine school and learning infrastructure; to join with other philanthropic organizations in understanding how we can support such efforts; and to see how far a multidimensional lens can take us in creating change. We would like to learn from you, and hope that you'll share your own journey doing this work. ■



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We are a foundation focused on understanding and shaping the impact of technology on society.

SIEGEL FAMILY ENDOWMENT employs an inquiry-driven approach to grant making that is informed by the scientific method and predicated on the belief that philanthropy is uniquely positioned to address some of the most pressing and complex issues facing society today. Our grant making strategy supports organizations doing work at the intersection of learning, workforce, and infrastructure. It is designed to help build a world in which all people have the tools, skills, and context necessary to engage meaningfully in a rapidly changing society. Siegel Family Endowment was founded in 2011 by David M. Siegel, co-founder and co-chairman of financial sciences company Two Sigma.



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