DEEPER LEARNING

HOW EIGHT INNOVATIVE PUBLIC SCHOOLS ARE TRANSFORMING EDUCATION IN THE TWENTY-FIRST CENTURY

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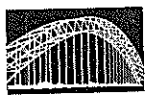

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INTRODUCTION

HOPE: EIGHT REASONS FOR OPTIMISM ABOUT THE FUTURE OF PUBLIC EDUCATION

"Most policymakers—and many school administrators—have absolutely no idea what kind of instruction is required to produce students who can think critically and creatively, communicate effectively, and collaborate versus merely score well on a test. They are also clueless about what kind of teaching best motivates this generation to learn. . . . We need more profiles of quality instruction . . . to inform the education debate."—Tony Wagner, *Creating Innovators: The Making of Young People Who Will Change the World*

STATIC SCHOOLS IN A CHANGING WORLD

In his classic 1968 study of daily life in classrooms, Philip W. Jackson wrote that students spend as much as 50 percent of their time waiting for something to happen.[1] They wait for teachers to pass out papers. They wait for slower students to get their questions answered. They wait for the lunch bell to ring. Alas, forty-five years after Jackson first published his book, millions of

American students are still waiting. They're waiting for all of the old reasons, and one relatively new one: today, they're also waiting for our education system to catch up with their lives.

While much of society has changed radically in the twenty-first century, the vast majority of the U.S. public school system—encompassing approximately 133,000 individual schools—still clings to early twentieth-century practices. Teachers lecture while standing in front of rows of desks, students take notes with pencils and lug heavy books, and both groups expect students to memorize content more often than to learn or practice new skills. In general, students are trained to act as followers, not leaders. It's almost as if the digital age—and the attendant changes to the world that came with it—had never happened. Until, of course, it's time to venture beyond school walls. At that point, far too many of them find out they're unprepared.

TIME FOR A CHANGE

Throughout the United States, several million middle and high school students are caught in the disconnect of living in a twenty-first century world while attending twentieth-century secondary schools. These "digital natives" have grown up in a time when communication is instant, memory is outsourced, and job security is a story told by old fogeys—and yet their schools remain focused on preparing them for futures more relevant to days gone by. As the Harvard-based thought leader Tony Wagner warns, today's world doesn't just care about what you know, but what you do with what you know.[2] That new world, in other words, is demanding that digital age workers have digital age skills, including the abilities to think critically, collaborate, and work independently. To date, however, relatively few U.S. secondary schools are designed with these skills in mind.

Wagner and other education experts argue that fixing this problem will require a wholesale transformation of secondary education as we know it. Today's students need much less passive rule following and rote memorization, and much more guidance and support in becoming self-directed learners who are able to take initiative and apply what they learn to a variety of different situations. Above all, they need better preparation to be engaged citizens who survive and thrive in college and in their careers.

As this vision of change has gained clarity and adherents, several names for the shared goals have emerged. Some speak of "college and career readiness." Others refer to "twenty-first-century skills." Still others have adopted phrases including "cognitive and noncognitive skills," "linked learning," and "higher-order thinking."

The expression we like best is a simple one: "Deeper Learning." We chose it not only for its simplicity, but because it fully encompasses the educational goals that, taken together, constitute the foundation for developing the single most important ability students should possess: the capacity for learning how to learn. In an ever-changing world—one in which knowledge and its applications have the potential to shift almost daily—nothing is more valuable.

More specifically, Deeper Learning is the process of preparing and empowering students to master essential academic content, think critically and solve complex problems, work collaboratively, communicate effectively, have an academic mindset, and be self-directed in their education.[3] While all

of these are vital components of Deeper Learning, we cannot emphasize enough the importance of the final element on this list: self-direction. Students who are empowered to be the leaders of their own educational lives are capable of embodying a desire to learn unmatched by any that could be instilled by a parent or teacher.

Already there are some five hundred schools in the United States that embrace varying strategies for achieving these ends. Some incorporate ideas that have been influencing parts of school systems for many decades, including practices referred to today as "inquiry-based" and "project-based" learning,[4] and others choose approaches of more recent origin, such as novel ways to integrate cutting-edge information technologies.

The ambitions behind Deeper Learning—primarily to create more independent, self-directed thinkers, better prepared to cope with the modern demands of college, the work force, and the world at large—are broadly popular. Nonetheless, the schools that have truly managed to exemplify them still represent a tiny minority of the American education system at a time when the need for bold change is ever more urgent.

A NATION AT RISK?

With the intention of avoiding unproductive finger-pointing, it's important to note that this Deeper Learning movement is emerging at a time of profound concern on the part of innumerable stakeholders—parents, advocates, educators, and countless others—that a great many U.S. schools are failing our youth and that decades of attempts to fix the problem have in many ways made it worse. In 2009, Elizabeth Coleman, then president of Bennington College, went so far as to charge that American schools are setting students up for "learned helplessness."[5]

To be sure, complaints about the state of schools are nothing new. Both smart and baseless criticisms and reforms date as far back as the 1820s, and some critics charge that today's calls of "crisis" are dangerously overblown.[6] In 1983, just as American high school graduates were on the verge of dazzling the world by creating entirely new industries of computers and software, a presidential commission warned that substandard public education had led to "A Nation at Risk." In an infamous report bearing that cautionary title, the commission wrote: "Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world."[7]

This fear bolstered the Accountability Movement of the 1990s that was followed by the No Child Left Behind Act of 2001, which increased the focus on standardized testing and low-performing schools. Eight years later came the $4.35 billion Race to the Top initiative, the signature education effort of the Barack Obama administration, which called for comprehensive education reform through the promise of more support for new and better innovations with regard to standards, teacher quality, data systems, and turning around struggling schools.[8]

Despite all of these efforts, fresh evidence has surfaced in the wake of the Great Recession that U.S. students' performance on tests is still lagging behind that of students in other industrialized nations. The United States recently ranked twenty-fourth out of thirty-four nations in "mathematics

literacy," and eleventh in "reading literacy."[9] A survey of the class of 2013 found that only 38 percent of high school students were "proficient or above" in reading, with only 26 percent meeting that level for math.[10] And while on average GPAs are rising, SAT scores are falling.[11]

America, which once led the world in the percentage of high school graduates, today ranks twelfth among industrialized nations with regard to high school graduation rates. More than a quarter of U.S. students (more than 1.2 million a year) do not graduate from high school in four years, and for African American and Latino students that number approaches 40 percent. And whereas two generations ago the United States ranked third among industrialized nations in college graduation rates, today with 43 percent we rank twelfth among thirty-seven OECD (Organisation for Economic Co-operation and Development) and G20 (Group of Twenty) nations in the percentage of twenty-five- to thirty-four-year-olds having attained higher education. To underscore the implications of educational attainment on everyday life, in 2011, adults (ages twenty-five to sixty-four) in the United States with a college degree earned on average 77 percent more than those in the same age group who had only a high school degree.[12]

In addition, in survey after survey, U.S. business leaders complain that the majority of job applicants are ill-equipped to solve complex problems, communicate effectively, or work in teams. When four hundred employers were surveyed for a recent major study on work readiness, nearly half of those who hire young people straight from high school said their overall preparation was "deficient."[13] Indeed, as our globalized, digital age economy demands increasingly sophisticated

critical thinkers, the gap between high school graduates' abilities and the economy's demands seems to be growing. As Tony Wagner argues, such developments indicate that our schools—even those that score best on standardized tests—aren't failing, but rather are obsolete. This, he writes, presents society with "a very different problem requiring an altogether different solution."

COMMON CORE

Here we will pause, taking a moment to understand how the most recent sea change to the educational landscape fits into the larger picture. The shift has come not in the form of a federal mandate, but rather with the development of the Common Core State Standards (CCSS)—the newest and most sweeping of all the reform efforts to gain traction over the past several decades. To date, forty-five states, representing approximately 80 percent of the K–12 student population, have signed on to the effort, which in sum aspires to make education more rigorous by holding students and teachers to a higher bar. In many states the push for new standards evoked a fervent backlash by parents, teachers, and politicians, who fear it will aggravate what the *New York Times* has called a "testing mania,"[14] and who are legitimately struggling to grasp *how* to implement the requisite changes. For example, Kentucky, a state that has long struggled with the associated challenges of widespread rural poverty, became the first state to adopt the new standards in 2010. Teachers were nothing short of overwhelmed as "overnight, the Pythagorean theorem went from a 10th-grade lesson to an eighth-grade lesson.

Instead of just identifying the first-person point of view, middle-school students suddenly had to be able to explain why an author chose to use it and how that decision influenced the text." Educators and parents were frustrated and concerned that the standards were too high and would simply set students up for failure.[15]

As always, the adjoining politics are complicated. Tea Partiers and others on the right continuously mischaracterize the CCSS, using them as ammunition to demonize the Obama administration. From the left come complaints about the standards being part and parcel of harmful corporate reforms that work to put teachers in the crosshairs. These polarized politics—a hyper-focus on testing debates by traditional progressives on one hand and on the other, reductive, oversimplified, and even false claims by conservatives—are having an unfortunate, if not dire, effect on a vital opportunity to improve education for the mass of American students.

The CCSS represent a historic opening to usher in a new mode of learning that reflects the times in which we live and puts at the center of education the goal of teaching for deep understanding. Yet, as Randi Weingarten, president of the American Federation of Teachers, puts it, "Even good ideas can be torpedoed by bad execution."[16] Getting the CCSS right is essential. One of the many reasons we wrote this book is to show how to "get it right" through examples of schools that have been doing just that (and more), well before these recent debates took hold. Why do we have to get it right? Because if we do, in fact, want kids—particularly underserved students—to be college and career ready and equipped to take on the myriad challenges of the future, we have no choice.

The question is: What does getting it right actually look like? The CCSS, in their current iteration, do come up short on indispensable tenets that we have taken care to highlight in this book—namely by a failure to address the importance of self-direction, collaboration, and effective communication—but nevertheless they are designed specifically to develop critical thinking and problem-solving skills, and mastery of essential knowledge.

We mentioned Kentucky previously. As one of the first states to get on the CCSS bandwagon, in many ways it can help other states avoid fatal missteps. It is each state's responsibility to ensure that schools and teachers have the tools, guidance, and resources that are necessary to support and prepare students to meet the new standards. No small charge, but this is what must happen. And as happened with the rollout of the standards in Kentucky, parents and families need to be educated and informed about the what, why, and how of it all. This movement to transform education in America cannot simply amount to raising a bar that students can never reach; it can and should move teaching and learning toward the practices that, as years of research and evidence have shown, create adaptive, lifelong learners.

The challenges to implementing the CCSS are large and very real, but let's not throw out the baby with the bathwater. Rather than fixate or complain, let's strategize about, contribute to, and rally for tangible improvements to the entire process. We need real, ongoing support for schools and teachers implementing the CCSS, better assessments intended to measure learning (which require a great deal of thoughtful craftsmanship), and quality resources for understanding the ways

in which essential skills are developed in students. Our hope is that this book—a display of Deeper Learning in action—can serve as a resource for transforming secondary education, making it possible for our nation to embrace this chance at real change. Higher standards are but one way, albeit an important one, of signaling that we as a nation believe that all of our young people deserve better.

So the Tea Party is wrong, and the progressives are wrong. Common Core is in fact *at* the core of the most important equity issue of our times. If done right, by being broadened in scope and supported, not simply mandated, all kids—rather than being tracked into educational mirrors of society's social stratification as they have been for decades—will have the knowledge and skills they need. Our country desperately needs a way forward to achieve both equity in our schools and better outcomes for every student.

A BETTER WAY

In the early 1980s, on the heels of the flare sent up by "A Nation at Risk," Theodore R. Sizer published his seminal treatise on high school in America, *Horace's Compromise: The Dilemma of the American High School.*[17] Yet much of the wisdom set forth in his work about how to transform the experience of secondary school failed to take center stage amid the urgent cries and ensuing wave of responses unleashed by the aforementioned infamous report. In terms of reform, the time has come for the long view—a marriage, of sorts, between Sizer's vision and the latest efforts to respond to our expanding educational crises.

By now, you may already have guessed at our choice for a solution. In two words, it's Deeper Learning. Because we want high schools, parents, and policymakers to better understand the breadth of what that actually means, and because we agree with Wagner and other education innovators that all of us need more and better ideas of what quality teaching and learning looks like, the two of us set out, beginning in 2011, to find a sample of secondary schools that exemplify Deeper Learning principles. Our hope is that this book will ramp up efforts to implement these ideas and principles, and help provide a bridge to the future.

We tapped our networks to narrow down a field of several U.S. schools with reputations for helping students pursue Deeper Learning objectives, whether or not they called them by that name. We then further pared down the list by seeking geographical diversity, including secondary schools from both coasts and the Midwest, as well as from both rural and urban communities. We also took care to choose institutions serving high percentages of minority and low-income students to drive home the point that while Deeper Learning will look different from one school to the next, its core values can be embraced in a range of environments and adapted to a school's specific circumstances. Through our sample of schools, we hope to create a space for readers to be inspired and believe that the schools in their communities—be they urban, suburban, rural, affluent, struggling, or middle income—can transform in similarly innovative ways. Our purpose here is to show that the rich experiences and the foundation for success offered through Deeper Learning can and should be afforded to *all* students. In particular, students

facing economic challenges in a world where race still matters may stand to gain even more from the empowering strategies we'll detail.

After settling on a group of finalists, we conducted telephone interviews with the principals of each candidate school, evaluating them across each Deeper Learning objective and also according to their focus on integrating technology. Finally, we chose eight secondary schools that we believe are particularly inspiring models. From 2011–12, the two of us visited the schools for several days each to observe and interview teachers, students, and principals, with the goal of presenting a vivid, on-the-ground view of what transformative education looks like.[18]

It's an opportune moment, as teachers and principals throughout America begin to adopt Common Core curricula. As mentioned above, this change has provoked great controversy, less to do with the Common Core *ideals*, but rather the question of how teachers can achieve them. Most of the schools we visited have already transitioned to the CCSS. Their leaders believe, as we do, that Deeper Learning principles chart the most efficacious path not only to integrate new curricula, but to support an even more holistic development of every student's potential and create a new kind of student: a self-directed leader of his or her own educational career who succeeds in higher education and beyond.

The schools we selected are:

Avalon School, a charter school serving seventh through twelfth graders in St. Paul, Minnesota;

Casco Bay High School and **King Middle School** in Portland, Maine;

High Tech High, the flagship in a charter network of two elementary schools, four middle schools, and five high schools in San Diego, California;

Impact Academy of Arts & Technology, a charter high school in Hayward, California;

MC^2 STEM High School in Cleveland, Ohio;

Rochester High School, the only district high school in Rochester, Indiana; and

Science Leadership Academy, a magnet STEM (science, technology, engineering, and mathematics) high school in Philadelphia, Pennsylvania.

All eight of these schools are public, including the one magnet school, Science Leadership Academy, and the charters: Avalon School, High Tech High, and Impact Academy. When we visited the Avalon School, 32 percent of the students were eligible to receive free and reduced-price lunches, the lowest proportion of any of the schools. At the other schools, that percentage ranged between 45 and 100 percent. Minority enrollment was more than 30 percent in seven of the eight schools, and more than 60 percent in four of them. (Rochester High, in rural Indiana, is the exception, with a minority student population of only 8 percent, which is typical of the region. It is worth noting that the number of students at Rochester qualifying for free and reduced-price lunches has been steadily increasing in recent years. This is a constituency that we believe is important to represent.)

The institutions we selected were slightly smaller than the norm for U.S. secondary schools. All have fewer than 600 students, compared to the national average enrollment of about 693.[19] The smallest of the eight, the Avalon School, served 185 students at the time we visited. Nonetheless, as we intend to show, most if not all of their effective strategies could be adopted in larger schools.

The majority of the schools we selected are relatively new in one way or another, having opened or transformed their design and approach within the past twelve years. Nonetheless, many have already achieved some measure of public distinction or recognition. *Business Week* magazine named the Avalon School one of Minnesota's top five high schools. Edutopia.org lauded Casco Bay High School and MC^2. High Tech High has been celebrated in numerous articles and books due to its innovative tactics and high graduation rates. By the school's data reports, 98 percent of High Tech High graduates go on to college, while more than 30 percent enter math or science fields. King Middle School, widely praised along with Casco Bay as one of the top schools in Maine, has been profiled on the *PBS NewsHour*, and *Ladies' Home Journal* named Science Leadership Academy one of "The Ten Most Amazing Schools in the U.S."[20]

What all of our schools have in common is that they are reimagining how teachers teach and students learn. In each of them, teachers collaborate far more than the norm, supporting each other and jointly taking responsibility for the students' success. In each, as well, the bottom-line goal is to help students become more engaged in and responsible for their own learning. Their formulas appear to be working, as they have achieved both higher graduation rates and higher

percentages of college admissions than the average rates for the districts and states in which they are located.

We're convinced that the eight schools we profile on the pages to come are showcases of ways to prepare students for today's world by creating engaged, collaborative, creative, and self-directed critical thinkers. As we discovered on our visits, they meet these goals with a set of common strategies listed here and examined more fully in the chapters to come.

All of the schools:

- Establish cohesive, collaborative learning communities that sharply differ from the top-down national norm;
- Empower and encourage students to become more self-directed, creative, and cooperative by getting them out of their chairs and more directly involved in their own education;
- Make curricula more engaging, memorable, and meaningful by integrating subjects and establishing relevance to real-world concerns;
- Reach outside classroom walls to extend the idea and purpose of learning beyond school, forming partnerships with businesses, organizations, research institutions, and colleges and universities;
- Inspire students by endeavoring to understand their talents and interests, customizing learning whenever possible to discover the motivational "hook" for each young person; and
- Incorporate technology purposefully to enhance, rather than simply automate, learning.

GOING DEEPER

Once again, not all of the teachers and principals we interviewed used the phrase Deeper Learning to describe the outcomes they were seeking. Yet all embraced the specific Deeper Learning goals of students mastering core academic content, thinking critically and solving complex problems, working collaboratively, communicating effectively, and being self-directed learners with an academic mindset.

Despite widespread support, those espousing Deeper Learning principles have their critics, some of whom interpret the priorities as a call to jettison time-honored academic content, tests, and rigor for a loosey-goosey, touchy-feely ethic. For example, in a May 2013 blog, Tom Loveless, a Senior Fellow at the Brookings Institution and one of the most vehement critics of the push to spread these approaches, dismissed Deeper Learning by name as the latest "anti-knowledge" fad, grouping it with initiatives for "project-based learning, inquiry and discovery learning, higher-level thinking, critical thinking, outcome-based education, and 21st Century skills." Not only do these movements lack evidence to support their claims, he argued, but they also exacerbate social inequality. "If public schools don't teach algebra or chemistry or history or great literature or how to write well—the old-fashioned learning that has been around for centuries and remains high status knowledge in most cultures—rich kids will get it somewhere else," Loveless wrote. "Poor kids won't."[21]

This view seriously misinterprets Deeper Learning's methods and intentions. Our eight schools, along with hundreds of others throughout the nation, are anything but anti-knowledge. Not a single one of them is ready to trade a solid

foundation in science and literature for new-age jargon and feel-good classroom exercises, as some may associate with older varieties of "alternative" schools. They want to change the current, conventional method of teaching from what the celebrated learning expert Sir Ken Robinson describes as "a delivery system" to a more dynamic teacher role of mentoring, stimulating, provoking, and engaging students to acquire skills that in turn will help them most efficiently to gain knowledge[22] and go on to become lifetime learners. Among the list of Deeper Learning objectives is the aspiration to know and master core academic content. Deeper Learning adherents simply believe that achieving that goal requires students to develop a sense of responsibility for their own learning and that in order for that to happen, they must be motivated and engaged. Some have termed it "progressive education 2.0." While we find this slightly reductive, it does make the point that Deeper Learning looks quite different from most of what has become familiar on either end of the education spectrum.

Evidence backing up an education based on Deeper Learning principles continues to build, however; early support—the kind of evidence that critics such as Loveless say is lacking—came in a 2008 study[23] of seven hundred California students in three high schools, two of which had large proportions of minority and English-language learner students, while the third served mostly white, high-income students. At the start of the study, one of the more diverse schools redesigned its algebra and geometry programs according to Deeper Learning guidelines, coaching students on how to ask good questions and assess themselves and the group. Initially, incoming ninth graders at that school were performing significantly below those at the other schools in

math, but by the end of that first year they had caught up with their peers in algebra, and by the next year they were performing significantly better than students in the other two schools. By the fourth year of the study, 41 percent of the students exposed to Deeper Learning strategies were taking calculus, compared to just 27 percent at the other two schools.

While such reports are impressive, they don't come close to telling the full story of what schools like the eight we selected have to offer their students and the greater public. In our modern society, it's becoming ever clearer that small groups of collaborators will produce the products and ideas that create growth and jobs and improve the world in countless other ways. These schools are training students in the skills they need to do just that. More broadly, by supporting teachers in helping students acquire a love of learning, these schools are inspiring personal transformations, motivating students to acquire a learning lifestyle that will follow them on to college and throughout their lives.

In the following pages, you'll hear directly from the teachers who work to make it all possible. In Portland, Maine, Gus Goodwin gives eighth graders at King Middle School a visceral understanding of electricity as they design and build small wind turbines, while national award-winning English teacher Susan McCray uses what she learned leading wilderness adventure trips to immerse Casco Bay High School students in the lives of homeless residents of Appalachia. At Rochester High in Indiana, science teacher Amy Blackburn inspires ninth graders to brainstorm ways to improve efficiency at the local hospital's emergency room—and present their ideas to the hospital nurses. And in Cleveland, Ohio, Brian McCalla, who surrendered a world-traveling job to

teach, infects students at MC² STEM High School with his zeal for industrial design. These talented, passionate professionals thrive in cultures that give them unusual autonomy, logistical support, and opportunities for collaboration, and the fruit of their labors is evident.

As Chris Lehmann, principal of Science Leadership Academy, describes it, schools like his strive to help students become "the best versions of themselves." During our visits, we repeatedly found evidence of how well they are succeeding.

You'll also hear about students including Andrea Lane, a math whiz who was bored and distracted in middle school, but who flourished at MC² in Cleveland after discovering a love of engineering. Holly Marsh got "hooked" on her career path by studying ecology at the Avalon School in St. Paul, going on to spend more than three hundred hours volunteering at a national park, where she was hired as a park ranger the day before her sixteenth birthday. Justin Ehringhaus was a shy, average student at Casco Bay High School, in Portland, Maine, before his teachers egged him on to follow his curiosity about Asia, a path that led him to live and study in Japan and China.

What can't be discounted is that in each case, the remarkable schools we profile in this book have helped young men and women not only to acquire learning skills they can use throughout their lives, but to tap the connections that have changed education from being a duty to a passion. "I fell in love with a place that I first hated with my heart and soul," Casco Bay graduating senior Abde Ahmed told his classmates and teachers at an end-of-year ceremony. A Sudanese immigrant, Ahmed had evolved from a skeptical sophomore to a gung-ho junior and senior, according to his teachers. He

explained that metamorphosis to his fellow students and teachers: "I fell in love because of you. Because of all of you." Schools in all sorts of communities throughout the country can and should transform into similarly inspiring centers of learning.

A BLUEPRINT FOR DEEPER LEARNING

While we're not fans of rote memorization, we thought it might be useful to end each chapter with a few distilled points in the hopes that it will help readers retain the information. With that goal, here are four key takeaways from what you've read so far:

- The majority of today's schools don't reflect the tremendous changes and new demands that characterize American society and shape life in the digital age.
- Deeper Learning—a more robust and responsive educational experience—offers a framework for educators and schools to rise to the challenge of preparing students for college, careers, and the world today.
- This book showcases Deeper Learning through eight schools that have taken on the challenge of adapting to the needs of students today. They are educating students—from a range of backgrounds—to develop the skills they'll most need to reach their full potential in the twenty-first century.
- A critical objective of Deeper Learning is for students to become more responsible for their own education, something the teachers and principals at our eight schools make possible through embracing six core strategies: create a cohesive, genuinely collaborative school environment; make learning more active and engaging; integrate subjects with each other and with real-world issues; reach beyond school walls to make learning meaningful by involving partners in the wider community; inspire students by finding the "hooks" that motivate them; and incorporate technology in ways that enrich and support learning experiences.

1

CONNECT

CREATE A COMMUNITY OF LEARNERS

"There is only one of me. You need to look to each other."—Gus Goodwin, education technology teacher at King Middle School

"I MIGHT FIT INTO THIS SCHOOL"

The first surprise for students on their first day at the Avalon Charter School in St. Paul, Minnesota, is visual. The one-story, red-brick former warehouse, in the middle of an urban industrial park, looks more like an office building than a traditional high school campus. Youth are assigned their own mini cubicles instead of lockers, and classrooms are separated by glass walls. The chairs are set in circles instead of rows.

More surprises come when the teachers start to talk. They refer to themselves not as teachers but advisors, and introduce the nervous new ninth graders to junior and senior students who, in a sharp departure from conventional schools, seem eager to behave like mentors rather than predators.

For most of the new students, however, the biggest surprise of the first school day comes when their new advisors ask two entirely unfamiliar questions: "What do you want to learn?" and "What would you like to do better?" Year after year, at this juncture in Project Brainstorm, Avalon's orientation routine, the new students stare back with open mouths. Some mumble, "I don't know!"

"There's always this blankness," says social studies teacher Carrie Bakken. "I don't think many of them, if any of them, have ever been asked those questions." Bakken, whose straight, ash-blonde hair and youthful face make her look like a student herself, is a refugee from law school who discovered her passion for teaching after a class in juvenile justice made her realize she'd rather try to help kids before they wound up in the system. She often steps in at this point.

"What do you do when nobody tells you what you should be doing?" she'll ask. "Even if they say 'I like to play video games,' that's okay for now. It's a way to jump-start the process. They can end up doing a project on video games that can still teach them how to find good sources and turn in quality research."

On our visit to Avalon, we saw Project Brainstorm in action. Once the students got over their initial shock at being asked what they wanted to learn, they wrote lists on yellow Post-its, which the teachers directed them to stick on to a long sheet of paper that subsequently was hung on a nearby wall. Several students wanted to learn a foreign language—one said she wanted to learn sign language. Several others, as Bakken had anticipated, wanted to play video games; a few asked to work in the school's garden, and one wanted to know how a nuclear reactor works.

Then came a new challenge, as Nora Whalen, who teaches American history, asked another pair of unfamiliar questions: "What are you good at?" and "What do you know?"

Eyes widened and mouths fell open, just as Whalen and Bakken had told us they always do.

"You can talk about being good at anything," Whalen coaxed. "It doesn't have to be something academic." She herself, she said, knew how to change a diaper.

This time, blue Post-its covered a new white sheet, with students listing skills such as playing the guitar, sketching, and speaking Russian.

Whalen addressed the group again, pointing to the wall. "This sheet shows everything you all want to learn," she said, and, pointing again, "This sheet shows what everyone has to offer to the group. You all have signed your Post-it notes, so you can now identify someone who can be a resource for what you want to learn. The staff can't teach you all the things you want to know. We are not the only experts in the room . . . you need to connect with one another to expand your learning."

For the rest of the school year, the two Post-it–covered sheets would be kept on a wall in the main entryway, reminding students both of the many interests that motivate learning and of the benefits available by looking to each other for support.

At the end of Project Brainstorm, after several more exercises of this sort, students sat in a circle and wrote down their first impressions of their new school on index cards, which they threw into the center of the circle for others to pick up and read aloud.

Not every comment was sanguine. "I cannot wait to graduate," said one. But most were.

"The feeling of this school is awesome," one student wrote.

"I might fit into this school," penned another.

"Today wasn't as dumb as I thought it was going to be," wrote a third.

BEYOND SPIRIT RALLIES

In Philip Jackson's aforementioned book on life in the classroom, he likened American K–12 schools to prisons and mental institutions, since both attendance and obedience are required in all three. However, teachers in today's most forward-thinking schools work determinedly to end such comparisons and instead create a dynamic vision of what institutions designed for learning can look like. Traditionally, building community in schools invokes images of rallying around an athletic team, or perhaps a political or social cause. Indeed, this type of community building has its benefits. Yet in more academic terms, what does it mean to create community around learning and, more specifically, build a learning community that is actually driven by the learners and skillfully maintained by teachers and other professionals?

Avalon and the other schools we highlight hold fast to the belief that developing students into self-directed, responsible learners concerned for the learning of others is a fundamental requirement for Deeper Learning. But helping students become responsible for their own learning is an incredibly challenging task that cannot be accomplished by any individual teacher acting alone. What is demonstrated vividly through Avalon and the other schools is the power of a learning community to transform students' lives when a culture exists that values relationships, trust, and respect, and simultaneously presses students consistently to do their best—by the setting of high expectations, and the support and encouragement needed to meet them—through a collective responsibility for learning. Blending and balancing all of these aspects is where many schools swing too far in one direction or another.

Schools should be consciously designed so that these elements feed each other and none falls by the wayside.

At most schools, particularly secondary schools, it's much more common for parents and teachers than it is for students to care about whether learning is actually happening. It's anything but easy to motivate a teenager trained by years of passive education to express his interests, much less pursue them, as several teachers reminded us. Fortunately, considerable research shows that schools can raise teens' enthusiasm for learning in ways that begin with creating strong communities.[1] Back in 1993, a study by the researcher Anthony S. Bryk, who later became president of the Carnegie Foundation for the Advancement of Teaching, found that a combination of supportive social relationships and strong emphasis on academics contributed to the remarkable success that urban Catholic schools were engendering among economically disadvantaged students.[2] As Bryk later suggested, based on a longitudinal study of four hundred schools in the city of Chicago, academic achievement is strongly correlated with students' experience of trust. "Absent such trust, schools find it nearly impossible to strengthen parent-community ties, build professional capacity, and enable a student-centered learning climate."[3] This wasn't to say that trust in itself guarantees success, but rather that schools with little or no trust were unlikely to improve.

The type of foundation we're describing is especially important when it comes to students developing what are commonly referred to as twenty-first-century skills. The task requires hard work and personal commitment, which students offer much more willingly when they feel positively about their teachers and each other, and believe they belong

to a mission-driven team. "If you want to teach well to very high standards, you have to know the students well, and you have to have that relationship that allows you to both challenge them, and adapt what you're doing for them so that it works,"[4] Linda Darling-Hammond, Stanford University's Charles E. Ducommun Professor of Education, noted in a PBS interview.

Positive social ties and continual reminders of adults' high expectations contribute to what educational researcher Camille A. Farrington has dubbed an "academic mindset." In a 2013 review of several studies, Farrington found that motivation to pursue Deeper Learning objectives depends on four key perceptions by students: "I belong to this academic community"; "I can succeed at this"; "My ability and competence grows with my effort"; and "This work has value for me."[5] We found schools pressing home these messages in a variety of ways, as teachers constantly called on students to identify their interests, ask questions, solve problems, analyze, communicate, collaborate with one another, and seek out resources and opportunities to enrich and expand their learning.

The teachers and school leaders we observed accomplished these feats by creating close-knit, supportive school communities where high expectations for the type of learning that will take place are held by students and educators alike. The strategies they use combine disorienting self-directed exercises, such as Avalon's Project Brainstorm; a heavy emphasis on trust; atypical physical environments; regular, formal, and conspicuous reminders of the community's aspirations and norms; and an extraordinary amount of autonomy and cooperation, for both teachers and students. These tactics take a lot more thought and planning than your standard spirit

rallies, and they certainly do much more than create a feel-good atmosphere.

While the precise texture of every successful learning community varies, each of our schools concedes that students having solid, meaningful connections to teachers, other students, and to the experience of learning are preconditions for true academic rigor. To boot, the byproducts of trusting, learning-centered communities—safer, more nurturing schools—offer important insight for developing solutions to persistent challenges around behavior and discipline. Creating an atmosphere that reinforces the notion of students taking responsibility for both their own learning and for the learning of their peers—a cornerstone of these strong communities—has a broad, positive impact on how students and teachers generally conduct themselves—derived from their empowered roles in school. All of this results in something very different from the "schooling" that continues to prevail in classrooms throughout the country today. Deeper Learning happens when schools build from the idea that everyone is in it together.

DIS-ORIENTATION RITUALS

To create strong communities of self-directed learners, teachers and principals told us they often need to actively disrupt students' expectations, making a clean break with histories of passive, rote learning practices that often leave students in a solitary place, disconnected from the learning experiences of other students. As with Avalon's Project Brainstorm, many schools accomplish this task with what we've come to think

of as *dis*-orientation rituals. A common recurring feature of these efforts to set new norms is a strong focus on shaping a mentoring relationship between upper-class members (students in upper grade levels) and younger or new students. The impact of tackling that age-old tradition of older students tormenting those new on the block is striking.

At Science Leadership Academy, new students plunge into unfamiliar, project-based learning during an extraordinary orientation week called Summer Institute. Assigned to small groups, they head out to conduct research in downtown Philadelphia, formulating questions, collecting facts, and making observations about the public library, train station, and park, and then working together on presentations to creatively report their findings using mediums from PowerPoint slides to theatrical scripts. The exercise spans several days, during which students receive only occasional coaching from their new teachers and a few upper-class members assigned as guides, while the newcomers become viscerally familiar with the school's core values of inquiry, research, collaboration, presentation, and reflection.

At MC^2 STEM High School, current students plan and run the new-student orientation program, called Activation Week. Seniors take responsibility for the first day of the week, while the sophomores and juniors assist with the second day. MC^2 English teacher Fee Mackinnon notes: "We try to communicate to all the students who help out that they are a vital part of what we are trying to do, and that they will be modeling what we want to instill in the ninth graders."

The older students proudly explain the school's culture, traditions, and language to the newcomers, whom they understand may be feeling overwhelmed. There's a lot that's

new and different from the new students' past experience, including, in particular, the MC² practice of "mastery learning," which means that rather than getting letter grades, the students' projects are rated as "exceeding mastery, mastery, reaching mastery, and basic." The sophomores and juniors, whose task it is to explain this to the younger students, try to make the process as concrete as possible by reviewing a typical report card.

Of all the dis-orientation rituals we learned of, the freshman "quest" at Casco Bay High School in Portland, Maine, was particularly ambitious. For three days, incoming ninth graders and their teachers camp out in yurts on a nearby island, where they kayak, hike, and cook meals together, while simultaneously embarking on a unit studying the nature of communities, from ecosystems to Masai tribes. Principal Derek Pierce calls the exercise a vital tool to adapt incoming freshmen to the school's culture, which includes a heavy emphasis on field experiences and high academic expectations. "We get students from three different middle schools and some private schools," Pierce told us. "Each year we have to assemble a class community that will help students do things they didn't think they could possibly do."

The ninth-grade quest culminates with a dis-orientation ceremony similar to the one at Avalon, but considerably more challenging for the new students. At an all-school meeting, each freshman must make a presentation to the rest of the students about the kinds of skills and personal experiences he or she will be contributing to the Casco Bay community. At one point, each new student writes down one word or phrase to describe the planned contribution, and places it in a box held by two seniors standing in the front of the room.

"I bring lacrosse skills," read one of the recent notes.

"I bring a kind heart," read another.

"I bring a terrible middle school experience," read a third.

After delivering his or her message, each freshman leaves the room, with only two class members remaining behind. These two formally ask the remaining students whether the school will allow the freshmen class to enter the community.

"Do we accept this box?" the two seniors shouted at the end of one recent ceremony, holding the box of notes over their heads. The room exploded in cheering, and the freshmen returned, looking excited and relieved.

Adding to the emotional power of the quest, each new ninth grader receives a letter of advice written by a senior student while camping out on the island. The content of the letters varies from suggestions about what classes to take to more general encouragements about supporting their peers and trusting their teachers. When the ninth graders return from the island, each freshman is assigned to interview his or her senior mentor to learn more, and then to make a poster that includes a picture of the two of them and a short, reflective essay on what has been learned. The posters hang throughout the school's hallways as ever-present reminders of what the learning experience at Casco Bay is all about.

The modeling taking place through these early rituals is powerful. From the start, through these initiations, incoming students encounter the types of roles they'll have in the school as they interact with more seasoned pupils and bear witness to students taking the lead, helping and guiding one another. Their comfort zones and ideas of how school and learning happen are challenged almost immediately through activities designed to draw out who they are, what they need, and what

they can contribute. And the experiences are punctuated by opportunities to form positive ties with other members of the school community, reinforcing the sense that no one is alone on this new educational journey.

A CONNECTED COMMUNITY—TRUST, TIES, AND MENTORS

To better understand why building trusting communities is no frill when it comes to learning, consider what Casco Bay High School English teacher Susan McCray has observed. "One of the reasons that we have the dropout rates that we have in schools is that we have these large monolithic places where people walk through the halls anonymously. And no one notices whether they're there or not. Why would you go someplace where you don't know whether someone's going to notice whether you're there or not?"

Being noticed certainly made all the difference for David Boone, a star graduate of MC^2.[6] Boone was fourteen when his home was destroyed by members of a gang that he had refused to join. He and his mother and siblings had to split up as they shuttled between homes of friends and relatives. As a sophomore at MC^2, Boone spent a few nights sleeping at the school, and other nights sleeping on park benches, which soon came to the attention of his teachers and MC^2's principal, Jeff McClellan.

"This kid was doing everything right," McClellan told us. "He just needed a little support." McClellan and his staff went to great lengths to help Boone weather the challenges of being homeless and to reduce the impact that such stressful circumstances could have on his educational and life outcomes.

Boone, who has since blogged about his experiences for the *Huffington Post*,[7] today credits the support he received—from his relatives, friends, and various school professionals, including McClellan—for the invaluable turn of events that would forever change his life. In the fall of 2012, after being accepted by more than twenty colleges, Boone enrolled at Harvard University, on a full scholarship.

Boone is just one of many students who have benefited from the varying ways a school community can and should offer a network of support. Schools that take care to create trusting communities establish virtuous cycles in which hardy relationships enable a steady focus on learning while discouraging all sorts of negative behavior, including rule breaking and bullying. Teachers consequently spend much less time and energy than their colleagues in less-connected environments on policing and managing behavior and more on helping kids learn, which may help explain the high achievement rates at the schools we visited. The evidence-based relationship between students' emotional states and their ability to learn is beginning to take hold as shown by the recent boom in "social-emotional learning" programs at thousands of K–12 schools throughout America.[8]

The trend makes sense. Consider Abraham Maslow's famous graphic representation of the hierarchy of human needs. In this pyramid model, a sense of physical safety lies at the broad foundation, right after breathing and eating. Next comes a sense of love and belonging, followed by self-esteem and respect from others. Only at the pyramid's top—i.e., once all of the more basic needs are met—did Maslow believe

it possible to pursue the more abstract goals of morality, creativity, spontaneity, and the acquisition of facts.[9]

Alas, most U.S. schools fail to provide even this basic foundation for learning, judged by recent statistics on bullying. National surveys have found that one-third of all U.S. schoolchildren have reported being teased or bullied at school. Researchers have shown that bullying not only creates more anxiety and depression among students[10]—even those who merely witness it—but also significantly hurts academic performance, lowering GPAs and scores on tests.[11]

In recent decades, many anti-bullying programs tested in schools throughout the world have failed to make any difference. Those that espouse a zero tolerance approach, with harsh disciplinary action for the bullies, have been particularly disappointing, tending to reduce the reporting of bullying (by intimidated students) but not the bullying itself. However, research suggests that thoughtful programs that start with creating strong school communities and include social and emotional learning opportunities can indeed make a difference. A study by scientists based in Chicago who examined more than two hundred school-based anti-bullying programs found an average 11 percent gain in performance on achievement tests,[12] suggesting that the ethos promoted through a school's culture—for example, one that explicitly espouses trust and a shared responsibility for all students—can cultivate a more respectful learning environment.

One effective way we saw a sense of trust created from day one is by assigning new students to small, cohesive groups that stick together for most or all of their school careers. At both King Middle School and Casco Bay High School, for instance, new students join "crews" that share the same advisor

for the next three to four years. The metaphor, borrowed from Outward Bound programs, is obvious: the students are all in the same boat, and are expected to pull their own weight. "'Crew' means having a support system that will never fail you," said one senior girl at Casco Bay, in a school video. "There's an unspoken understanding that if anything goes wrong, the rest of us are going to be there for you."

Research in recent years has also documented the importance of students feeling connected to adults at their school in terms of their future achievement.[13] A specific method of supporting such trust-based relationships is with an "advisory" period, a kind of homeroom during which students, who are usually in the same group for three to four years, can informally check in with each other and with their same teacher, who follows them through their school career. At Avalon School, for instance, the advisory period lasts just twenty minutes and it's a ritual that students cherish. English teacher Kevin Ward told us, "Advisory is the most powerful thing we do."[14]

To help create trust in the new community, and build that essential foundation for an "academic mindset," teachers commonly recruit upper-class members as models and guides for younger students, as previously described in the innovative orientation practices. "The older kids are really important in socializing the new students," Jeremy Spry, a Science Leadership Academy program coordinator, told us. "They tell their story to the newer kids that this is a great school and that the work they do here is meaningful to them. They also help answer questions and give the new students a sense of what things will be like here."

At Rochester High in Indiana, twelfth graders, referred to

as "critical friends," critique ninth graders' papers to model effective feedback. The freshmen then write reflective essays on what they've learned, and how they might now go about giving good feedback to one another.

This is a powerful teaching tactic, as much research suggests. Beginning in the 1960s, Stanford University's Albert Bandura published seminal studies on the "social learning theory,"[15] according to which, as Bandura and his followers detailed, children learn by observing and imitating influential models, particularly those most similar to them. It's important for schools not only to tap the wealth of knowledge and resources of their teachers but to show that learning—academic or otherwise—can and should happen everywhere, all the time. Student mentoring and guidance is one of the most effective ways to model a more robust perception of the learning process.

At Avalon, teachers encourage new students to seek out older kids' advice, asking questions such as: "If you could do your freshman year over, what would you do differently?" or "What was the best advice you got when you were a freshman?"

Avalon founding teacher Carrie Bakken described how she assigned a transfer student who was getting poor grades to a senior who helped show her the ropes. The transfer student's troubles owed to her unfamiliarity with the school's new routines, including the practice of logging into a computer system all of the hours she spent working on her projects. The senior student recalled how he had been helped with this very problem by an older student three years earlier, and repeated his former mentor's advice that "If you don't log the work you've done every day, you will be a hundred hours behind before you know it." The new student quickly improved, later telling Bakken, "No senior would have ever helped me at my old school. I felt safe knowing I had a partner."

Avalon upper-class members told us that they believe being a mentor is an honor, and many eagerly volunteer to take on the role. In fact, in past years, so many seniors have volunteered to be mentors that teachers had to establish a formal application process. Throughout the year, the teachers work to recognize the student volunteers with activities such as ice cream socials.

In addition to proving effective among students of different ages and skill levels, social learning also works with peers. Through organized peer-to-peer feedback experiences designed to promote self-directed learning and collaboration under the guidance of teachers, students doing similar work can share with each other the learning strategies they've discovered on their own.

We saw this in action at Science Leadership Academy in Philadelphia, where, after a vocabulary quiz, tenth-grade English teacher Larissa Pahomov asked the students who had received a perfect grade to raise their hands. She then told the students who had missed some words to talk to those who hadn't and find out why. (Among the secrets revealed was a free learning tool, featuring virtual flashcards, that a student had found online.)

It's crucial for teachers to continually press the message that students are responsible for each other, and for their shared academic success. At King Middle School, education technology teacher Gus Goodwin explained how he managed a group of eighth graders, who, during a collaborative project,

had begun to treat their classmates poorly, ignoring or ridiculing their comments.

First, Goodwin interviewed several students and had others fill out a survey asking what sorts of behavior would contribute to the best school environment. Again and again, the respondents said they wanted to learn and have fun, and that they wanted other students to be respectful and not interrupt or criticize their ideas. Goodwin wrote these responses on a six-by-six-foot chart that he posted in his classroom.

Ever since then, Goodwin has started each new term by giving students a worksheet on which they rate themselves according to five goals: respect, responsibility, empathy, and being an interested learner and an effective communicator. Three or four times a term, he also asks them to write reports in their journals on their progress toward helping to build the school community. A typical entry might be:

> Goal: I am going to work on encouraging others.
>
> *Reflection: Someone's project was falling apart. I saw this and went over to help them out. In the end the project worked.*

By providing a common language and concrete goals, the worksheet, journals, and chart have all helped keep students focused on improving how they engage with expectations that everyone agrees on, Goodwin said. Today, when he spots a student misbehaving in class, he will often walk over and say, "Let's go review the chart," almost as if it were the chart, not Goodwin, expressing disappointment. Standing by the diagram, he'll ask the student to rank his or her conduct according to the listed goals. Then he'll ask: "What's going on?"

With educators playing the role of coach, reminder, and guide, this heightened sense of trust in students to have some ownership over both expectations and actions is at the core of effective learning communities. It evens out the arcane balance of power that adolescents are notoriously resistant to, and underscores that school really is about them—and about learning. Trust also plays a huge part in the ways that schools offer degrees of autonomy to students, cementing the notion that in school and beyond they are the directors of their own educational lives, something we will delve into more later on in this chapter.

Goodwin also repeatedly reminds his students that, given their school's emphasis on collaborative projects, they are ultimately responsible not just for their own achievements, but for those of their classmates. "There is only one of me," he tells them. "You need to look to each other."

IF THESE WALLS COULD TALK

Right alongside working to create a supportive and trusting environment through student connection and relationships, equally important are the messages signaled by the physical environment. If building a connected community focused on Deeper Learning is the goal, the material experience that students encounter on a daily basis should communicate just that.

The main campus of the High Tech High network, for instance, is a 39,000-square-foot former U.S. Navy engineering

training center near the San Diego airport. That's a lot of space for four hundred teenagers, and the lofty ceilings, ample light from abundant windows, and 15-foot glass walls separating classrooms all enhance the sense of openness and possibilities, and emphasize the transparency expected of students and staff alike. Using a preferred technique of many Deeper Learning schools, High Tech High eschews the traditional rows of desks in favor of easily movable furniture and even movable walls, which can accommodate both small and large groups. Students immediately understand that they will not be sitting quietly all day listening to lectures, but will instead be involved in active and dynamic experiences.

Somewhat similarly, at SLA, teachers have reconfigured a former school district administration building to encourage a sense of community. Chris Lehmann, the principal, occupies an office with two doors, both of which are usually open. One door opens into the hallway, while another leads into the office space for the school's administrative staff. Close by is a long desk where teachers often sit and work between classes. The availability of the table allows teachers to easily meet together and confer about students or joint projects. Students also regularly drop by and casually sit next to teachers to ask a question or seek advice.

Prominently displaying student work is, of course, something many traditional schools do, but our schools carry it to healthy extremes, because the intention goes beyond displaying pride in their students' creativity and quality work. The idea is to represent, consistently and visually, the expectations for, and possibilities of, Deeper Learning. The way in which attention is called to projects, including posters, photographs, sound speakers, circuit boards, and even model wind turbines, reinforces the substance, the application, and the methods that students are expected to engage in on a regular basis.

At High Tech High, student work—including a bicycle wheel attached to a poster explaining physics principles, and the inside of a piano with a written guide to the mechanics of music—is showcased on walls, in the labs, and even suspended from the exposed trusses on the ceiling. The practice sends clear signals that the students' work has value and is complex and that they have a standing audience of teachers, administrators, and fellow students who expect them to achieve.

Our schools also make enthusiastic use of motivational messages that convey and reinforce the schools' values. In the central lobby of Impact Academy, a display titled "Where Do Our Seniors Go?" lists the destinations of graduating seniors. Posters designed by each graduating student include photographs and descriptions of the student's career ambitions, representing future aerospace engineers, graphic designers, nurses, and psychologists. A second set of posters, completed once the students know they've been admitted to college, names the college each senior plans to attend and includes whether that student is the first- or second-generation college student in his or her family. At the end of the hallway, yet another display features the seniors' acceptance letters and admission certificates. As students report to their classes each day, they can't avoid these reminders that Impact Academy is preparing their peers, and them, for college and challenging careers. The displays are intended not to brag but to propose, encourage, and normalize an intellectual culture. In schools that have persistently struggled to develop a successful college-going culture, this sort of symbolism can be a particularly powerful tool for strengthening both hope and standards.

At Casco Bay High School, student-designed posters titled "Pathways to Success" are placed throughout the building and display the community's values, with mottos such as "Solve Today's Problems," "Work Independently and Collaboratively," "Investigate Deeply," and "Think Critically and Creatively."

Similarly, at Impact Academy, community goals are expressed on ubiquitous posters, spelling out the school's four values: "We are Respectful; We are Safe; We Work Hard; We Support One Another." The walls also boast the core competencies nurtured—inquiry, analysis, research, and creative expression—and important leadership skills, such as the ability to think critically, collaborate productively, communicate powerfully, and manage projects effectively. Teachers refer to the posters routinely when describing how students will be graded, and students periodically write essays about their progress in reaching them.

DEMOCRACY, AUTONOMY, AND FLEXIBILITY

Thoughtfully managing the physical environment not only has the ability to communicate high expectations, but it can also underline a school's operating style. Our schools proved to be exceptionally democratic, or at least nonhierarchical. It's rare to see teachers isolated in their rooms or gossiping in faculty lounges; instead, SLA and many of the other schools provide open areas with long tables where teachers meet between classes, and where students feel free to approach them. And at Avalon and the other schools, students' desks are rarely lined up in rows, but are more often arranged in circles, so that the

youth end up looking at each other rather than at the back of each other's heads. No one can hide in the back row, and implicit in the setup is the idea that everyone in the room is of equal value and importance.

One of the most significant ways that Deeper Learning communities differ from the norm is that teachers enjoy an unusual degree of autonomy, at times to an extent that might seem unheard of to many teachers throughout the nation. High Tech High principal Larry Rosenstock jokingly refers to himself as "support staff," while the teacher-run Avalon School doesn't even have a principal. There, teachers commonly take on duties many traditional principals handle themselves, such as hiring staff, creating school schedules, developing partnerships with off-campus corporations and museums, and even dealing with funders. Furthermore, unlike at most traditional schools, these teachers direct their own professional development, identifying issues of common concern, planning workshops, and helping each other adapt to new technology. While this approach naturally requires highly skilled, competent professionals, it also requires a tremendous amount of trust and a willingness to truly empower educators. The roles that teachers fill in Deeper Learning will be explored more in the chapters to come.

The benefits of a school environment saturated in trust are many. Not least of them is the ability to develop a student culture that entrusts young people with as much responsibility for their education as the adults in the school. This frequently starts with the most basic and mundane features of a school, including the fact that most of them we observed don't ring bells between classes—an obvious signal that students can and should be responsible for their own schedules.

King Middle School takes this idea even further, with open-ended days that emulate real-world workplaces. David Grant, a technology integrator and teacher-training coordinator at the school, told an interviewer:

> Most schools are divided into forty- or fifty- or sixty-minute blocks. They might think they're progressive if they do eighty-minute blocks, but that's not what we're talking about. We're talking about a schedule . . . where a team of five or six experts in learning, your teachers, can say, "In order to pull off this particular project at this particular stage, in order to make the workflow happen that we need to accomplish with kids, we need to design a whole new schedule this week." And that's what we have here. . . . Nobody actually knows where anybody is most of the time, but that's the way real work happens, and we all know that. If we're working in the world and we're in any kind of engineering or design process or we're editing movies or making sounds or we're doing whatever it is that people do, nobody stops after forty minutes, puts everything down and goes on to do something else.[16]

The interplay of student and teacher autonomy is key to building safe, trusting communities and also to creating the kind of open culture necessary for meaningful learning to take place.

In this same vein, having students, rather than staff, talk to visitors and take them on campus tours was a common occurrence. The ninth graders at MC² STEM High School proclaimed how they have to prepare an "elevator speech" about the school to deliver to visitors. It's the small, and not

so small, choices like this that let students know this is their community to shape, contribute to, and lead. And the practice of telling others about their community further ingrains in students a sense of belonging to something that values their participation.

Students are also frequently involved in other vital tasks for their schools. At Science Leadership Academy, up to forty students at a time make up the "tech squad," which is specially trained to work with the school's technology coordinator to provide support for SLA's web portal. The team also helps keep track of and maintain the schools' laptops, recording problems and even orders new parts.

At High Tech High, students are offered a deal famously pioneered at Google, whereby they can use 20 percent of their time however they choose, as long as it benefits the school—emphasizing both independent learning and the importance of the greater good. Students have stepped up to this challenge with projects including a fund-raising campaign to build a darkroom for the photography program and the invention of an app that gives visitors a smartphone guided tour of the school.

While a great many schools, including all those we visited, have student-government organizations to communicate formally with administrators, the Avalon School has a system that offers a remarkable opportunity for students to explore the nuances and complexities of governing structures. There's a constitution based on checks and balances, with an executive branch made up of teachers and a legislature representing the students. Just as in the U.S. Congress, the students can propose new laws, which must then be approved or vetoed (with an obligatory written explanation) by the executive branch.

Avalon students used their legislative power a few years ago to persuade the administration to reinstate a treasured privilege—the freedom to have lunch off campus. The staff had summarily ended the school's open lunch policy after several reports of bad behavior off campus during the forty-minute lunch period. But when the students responded with a thoughtful proposal, including a promise to end the off-campus infractions, the teachers relented, making the students feel more trusted and responsible.

Power-sharing systems like this example require both teachers and students to be creative and accountable. As a teacher at Impact Academy told us: "I believe that students can be transformed by our school, because I have been transformed by it as a teacher."

BETTER TOGETHER

Some examples we relate, such as the Casco Bay quests, are truly extraordinary in the realm of public schools. And although similar programs are certainly possible with resources and priorities directed toward Deeper Learning, our purpose in showcasing them is not for the rest of American classrooms to duplicate them as much as it is to extract and adopt the fundamental goals and principles behind the activities. It should be clear by now that building cohesive school communities, to whatever extent schools can do that, is less a luxury than a fundamental requirement for quality education.

This foundation supports the crucial goals of critical thinking, problem solving, effective communication, and learning how to learn. But in particular, it's quite easy to see how strong

communities help create good collaborators. Modern education experts usually cite two reasons that collaboration has become such a key twenty-first-century skill. As employers have recognized how pooling talents can lead to more innovation and better products, collaborative efforts in the workplace are increasing. Collaboration has also become easier, and more prevalent, as new information technologies have emerged.

Many American schools by now appreciate the importance of teaching students to collaborate, and they are trying to do so by increasing the number of team projects. Unfortunately, such efforts often fail. High achievers (and their parents) may resent their being grouped with kids perceived to be low achievers, who might threaten to lower their GPAs; some projects end up being busywork, and some underprepared teachers micromanage the groups, or fail to manage them at all.

Helping students learn to work together effectively takes efforts at several levels, from inspiring students to care about each others' success, to motivating would-be idlers, to establishing procedures for constructive feedback, to knowing when and how best to intervene when group dynamics turn sour. In our travels, we found many educators who were skillful in all of these domains.

Again and again we saw teachers model collaboration for their students every day, as they worked together to design curriculum, exchange ideas about daily practices, and keep track of individual projects. They also regularly talked to their students about the value of getting along well with others by tolerating differences and taking turns.

At Impact Academy, art teacher Tyler Fister told us how he encourages students to help each other improve their work by exchanging thoughtful feedback. "They use each other

as teachers," he told us. Fister gets students accustomed to the give-and-take of successful collaboration by providing an initial list of questions for them to use in their small-group discussion sessions. As they get more comfortable with the process, they gradually depend less on their teachers and more on each other.

We spoke to several teachers who told us how they take extraordinary care with their ninth- and tenth-grade students to assign them to groups that have a good chance of succeeding—making sure that there's a balance between different levels of skill, interest, and motivation. In most cases, they'll work to include in each group a leader, a motivator, an organizer, and a student who may benefit from some leading, motivating, and organizing. By the upper grades, students understand how to do this for themselves, and teachers give them more freedom to choose groups on their own.

"I know I'm a spark plug," one Rochester upperclassman told us. "I get things done, but I make sure I have an organizer to keep track of when things need to be turned in."

Teachers are constantly present as the groups do their work. While they'll step in when needed to mediate, supervise, and remind students of their deadlines, they stay on the sidelines as much as possible. At Rochester High, we watched one group working on a PowerPoint presentation of an adventure story based on historical events they were studying. Each member of the group had signed a contract specifying his or her responsibilities, and each had committed to contributing six slides to the presentation. On that day, however, one of the students was absent and hadn't turned in his slides. His flustered group leader complained to her teacher, Dan McCarthy, that she didn't know what

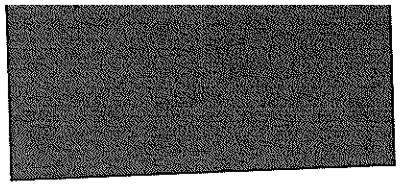
to do. McCarthy pondered aloud: "I wonder if you have to fire him"—an option in the contract. "No!" the girl said, seeming shocked. "He's a hard worker. He should be in the group." The two of them then considered other strategies for saving the presentation.

All of the schools we profile in this book expect students to work together, in pairs or groups, much more often than what we generally see in the great majority of schools today. In most cases, as we'll elaborate in the next chapter, projects are the norm rather than the exception for schoolwork. Thus, a key part of the acculturation process for new students is for them to get used to what for many is the unfamiliar and initially uncomfortable experience of cooperating consistently with their peers.

At a dis-orientation ritual at MC^2 High School in Cleveland, we witnessed a particularly vivid example of how innovative schools help new students to both appreciate the value of collaboration and practice it with increasing skill. It came on an afternoon in which eleventh graders were leading an exercise that involved teams of freshmen competing to build the most effective penny launcher. The student leaders assigned the younger students a hypothetical budget to buy eight common items from a store, including cardboard, paper clips, pencils, soda bottles, and rubber bands. They then supervised as the teams built their launchers and subsequently tested them to see which one could throw a penny the farthest. By the end of the competition, the freshmen had not only learned about designs and prototypes, but had practiced problem solving, critical thinking, and communicating—and, perhaps most importantly, learned how to contribute to each other's success.

A BLUEPRINT FOR DEEPER LEARNING

- The development of strong school communities is essential for students to evolve from playing a passive role in their education to being active, self-directed learners.
- The most effective communities blend support and trust with high expectations and a collective responsibility for learning.
- Useful tactics to build strong learning communities include "dis-orientation" rituals to disrupt past experience; physical environments that reflect a focus on learning, openness, and equality; regular, formal, and conspicuous reminders of the community's aspirations, expectations, and norms; and the involvement of older students as mentors, models, and guides.
- Collaborating well is an increasingly necessary skill in our modern world. Teaching it is no simple exercise and requires a range of efforts, including inspiring students to care about each other's success, establishing norms for constructive feedback, stimulating those who seem less motivated, and knowing when and how to intervene—and when and how to step aside and allow students to find their way.



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EMPOWER

ACTIVATE STUDENTS TO LEAD THEIR OWN LEARNING

"It's not give and get, but go and get."—A student at Avalon Charter School

"THIS IS HOW KIDS WANT TO LEARN"

At King Middle School in Portland, Maine, through the Creating Currents unit, eighth graders get to see what it's like to work as a professional energy auditor, a research scientist, an energy developer, and an engineer. As auditors, armed with safety goggles, infrared thermometers, and window-draft detectors, they measure various aspects of their home energy use and write up their findings and recommendations in an industry-standard report. As scientists, studying the mechanics of wind turbines, they produce and test hypotheses to determine which variables—such as different blade sizes and shapes—contribute most effectively to wind propulsion. As developers, they write up a land-use proposal for a wind turbine that could generate electricity for the state of Maine. And as engineers, they work in teams to design