PREPARING TO LEAD IN A PROJECT-BASED WORLD
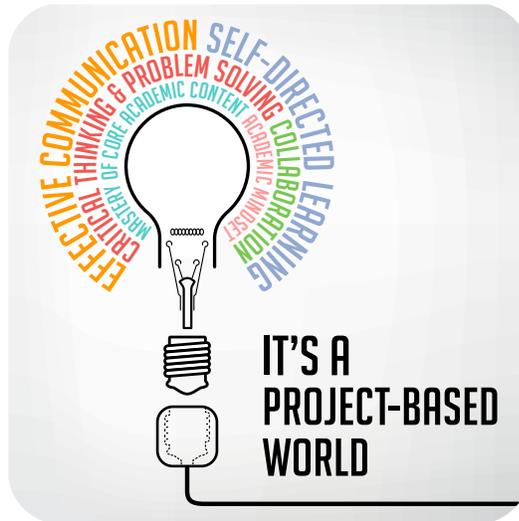
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IT'S A
PROJECT-BASED
WORLD

This publication is the third in a three-part series about the new economy and inequities in the preparation for student success in college, careers and citizenship.

In Preparing Students for a Project-Based World (August 2016), published in partnership with the Buck Institute for Education (BIE), we made the case that high-quality project-based learning is the best preparation for jobs that require the ability to work on projects and possess effective collaboration, problem-solving and communication skills.

In Preparing Teachers for a Project-Based World (November 2016), we suggested that teachers with a project-based mindset were well prepared to get their work done and support student learning. They are skilled project facilitators, advisors and coaches, encouraging students to conduct high-quality projects from start to finish.

This paper also builds on Preparing Leaders for Deeper Learning.

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INTRODUCTION

The world is getting more complex. Exponential technology is driving change in every sector. Work is fast paced and project-based. Leaders, learners and citizens equipped for novelty and complexity will make valuable contributions.

Deeper learning experiences that engage and challenge students—particularly projects that include team sprints to quality public products—appear to be relevant preparation for a dynamic economy and society. High-quality project-based learning provides opportunities for learners to practice effective collaboration, problem-solving and communication skills.

Project-based learning requires unique instructional skills, with teachers serving as designers, advisors and coaches. Likewise, project-based learning requires a unique skillset and approach to leadership.

Leaders in a project-based environment need to work effectively with others, understand the implications of new technologies, assume diverse roles to generate collective action, and must spearhead their own growth as well as the growth of others. Educators talk a lot about "student agency" -- that applies for leaders, too. This was an important consideration in naming this paper, recognizing that preparing to lead is an active process.

Leadership development can be aligned to—and modeled after—the types of project-based and deeper learning environments we seek to create for students.

The purpose of this publication is to illuminate the ways leaders from education, business and the third sector can support deeper learning. This publication:

1. Illustrates ways technology is changing the world and elevating the importance of project-based learning.
2. Delineates skills, dispositions, mindsets and roles of leaders needed in a project-based world.
3. Illustrates ways in which leaders from across sectors (business, community and nonprofit, education) can collaborate to create a more equitable future for all young people amidst a changing world.
4. Describes processes for leadership preparation, including specific experiences and exemplars that will cultivate leaders for project-based educational settings.

In the first section of this paper, we share how exponential technology—particularly artificial intelligence—is changing the landscape for learning. Next, we describe leadership roles for education and community leaders alike. Finally, we provide a new vision for preparing to lead in a project-based world.

Learning has never been more important—for individuals, for communities and for states. Globalization and automation are increasing the skills premium, making most sectors more competitive and reshaping the employment landscape. Everything that can be automated will soon be—including middle management roles based on the application of a standard set of rules.

LIVING AND LEARNING WITH SMART MACHINES

Effective leaders understand these changes—and recognize the inherent learning opportunity for adults and young people alike. Leaders recognize that life with smart machines requires development of individuals who can manage projects, work effectively with others and be adaptable to change. **Further, leaders recognize that individuals who take initiative for their own development will thrive.**

A Stanford study, Artificial Intelligence and Life in 2030, asserts, "As artificial intelligence substitutes for human roles, some jobs will be eliminated and new jobs will be created. The net effect on jobs is ambiguous, but labor markets are unlikely to benefit everyone evenly. The demand for some types of skills or abilities will likely drop significantly, negatively affecting the employment levels and wages of people with those skills."[1]

While some may fear such change, after issuing a report on the likely impacts of artificial intelligence (AI), President Obama said that he tended towards optimism: "Historically we've absorbed new technologies, and people find that new jobs are created, they migrate, and our standards of living generally go up." But, he added, "I do think that we may be in a slightly different period now, simply because of the pervasive applicability of AI and other technologies."[2]

WHAT DOES AI MEAN FOR EMPLOYMENT IN A PROJECT-BASED WORLD?

"To date, digital technologies have been affecting workers more in the skilled middle, such as travel agents, rather than the very lowest-skilled or highest-skilled work," notes a Stanford study. "On the other hand, the spectrum of tasks that digital systems can do is evolving as AI systems improve, which is likely to gradually increase the scope of what is considered routine."[3]
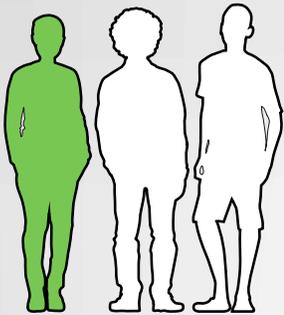
Economists that look at long-trend data are conservative while some technologists are ringing the alarm bell. There is some consensus on these five issues over the next decade:

- ⊕ **New work:** The automation economy will change the nature of work for several billion people—enabling (and requiring) them to work with smart machines while increasing skill requirements and extending individual contributions.
- ⊕ **Job loss:** Hundreds of millions of jobs based on repetitive rules application are likely to be phased out over the next ten years as new applications deploy more sophisticated machine intelligence.
- ⊕ **Job gains with skills:** Tens of millions of new high-wage jobs will be created in smart cities that skill up and provide inspiration, incubation and intermediation around emerging opportunities.
- ⊕ **New contributions:** Machine intelligence makes predictions cheap but human judgment valuable. Empathy and social interaction, creativity and design thinking, and an innovation mindset will be increasingly in demand.
- ⊕ **Big divide:** Smart machines will eventually eat the middle of the job market—in some places as soon as ten years while in others it may be 20 years—eliminating most jobs that involve repetitive rule application and creating an even bigger income gap between those that can code and leverage smart tools and those performing nonrepetitive service jobs.
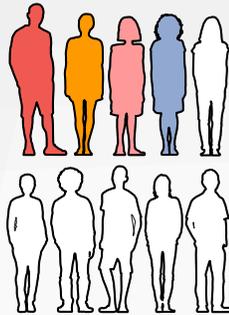
All of these point to a need for employees who can demonstrate adaptability and be project-oriented.

A PROJECT-BASED WORLD

The speed of change means we live in an increasingly project-based world. About four in ten high school students will freelance—working short-term gigs, or if highly skilled, in a series of value-add projects. An equal number are likely to manage their work for an employer as a series of projects. Young people may experience a greater magnitude of change in life and work than Baby Boomers.

About **one-third** of American workers are now engaged in some kind of freelancing, or project-based, work.[2]

By 2020, **about four in ten** or about **91 million Americans** will be engaged in quick "gigs" and project-based work.[3][4]

We think an **equal number** will work on or manage projects for organizations. Many people will go back and forth between **contractor and employee** for periods of time in the project-based idea economy.

THE LEARNING OPPORTUNITY FOR LEADERS

There has never been a better time to be a learning leader. The cost of devices, computing and storage have plummeted, and broadband access has improved. There has been an explosion of tools and models that engage learners and create rapid pathways to mastery. Personalized education models that give students more control over pace and path are promising but still challenging to deploy.

To prepare young people for a complex fast-paced world, a growing number of schools are using project-based learning (PBL) periodically or across the curriculum to provide real-world challenges and promote deeper learning outcomes including critical thinking, communication, collaboration, problem solving, self-management, persistence and learning.

David Rattray, president of Unite LA, thinks schools that take deeper learning outcomes seriously are "predominantly project-based with a lot of team-initiated learning and students at the center of their learning and teachers as more of the coach."[4]

SIX DEEPER LEARNING COMPETENCIES

MASTER CORE ACADEMIC CONTENT

THINK CRITICALLY AND SOLVE COMPLEX PROBLEMS

WORK COLLABORATIVELY

COMMUNICATE EFFECTIVELY

LEARN HOW TO LEARN

DEVELOP ACADEMIC MINDSETS

"In market-based economy, the best weapon people have is to be their own training director for life," said Rattray, who is also the executive vice president of education and workforce development at the LA Area Chamber of Commerce. *"In market-based economy, the workforce has to be adaptive,"* added Rattray.

Leaders of people and projects can help students become lifelong learners in what Rattray calls "contextualized learning environment"—engaging in real work, learning more deeply and cultivating a love of learning.

Quality projects, of the sort that Rattray advocates, take on authentic subjects and are often community connected, can span multiple subjects and take weeks or months to complete. Projects may be individual or team-based assignments with individual contributions.

"Artificial intelligence and machine learning are taking over jobs that don't require as much creativity," said Joi Ito, MIT Media Lab. That's why he advocates for the 4Ps: projects, peers, passion and play. "We know project-based learning is more effective than texbook-based learning," said Ito. He added that interest-driven learning is more motivating and better retained. ,He reflected that "school is almost the opposite of these four," noting that peer learning is often called cheating, and play is relegated to recess (if that's still around).[5]

MIT Media Lab's 4Ps
- Projects
- Peers
- Passion
- Play

Adding more authentic, extended and integrated learning experiences can be challenging for schools. It's hard to break into the high school master schedule as students race to accumulate credits to meet graduation requirements. It's hard for teacher teams to find the time to plan integrated units. It's hard to identify, vet and prepare community partners to support work-based learning experiences.

Many communities are becoming more diverse, serving students from many different academic and social backgrounds. This makes deeper learning even more important but more challenging.

A school can't offer a rich assortment of projects and work-based learning experiences by itself; it requires a community endeavor. With shared leadership—there is no blaming and more collaborating.

By understanding what it means to live with smart machines, recognizing the shift to a project-based world, and embracing the opportunity, leaders look to the "New Work."

PROJECT-BASED LEARNING: A TRADITION AND AN OPPORTUNITY

- Projects are structured to approach and attack large problems. They have defined deliverables, timelines and resources. They are how most modern work is managed.
- Beginning with John Dewey, there is a rich 100-year tradition of engaging learners in hands-on work. Project-based learning is widely regarded as an engaging way to achieve a broad set of outcomes and to prepare young people for rapid change.
- Networks of like-minded schools have advanced high-quality project-based work: Coalition of Essential Schools, New Tech Network, Big Picture Learning, Envision, Edvisions, Asia Society, Internationals, and Urban Assembly.
- Project-based learning can be used as the primary pedagogical approach or as periodic application (see Mooresville gateway projects).
- Project-based learning is easy to initiate but hard to do well. The Buck Institute for Education provides guidance in their Gold Standard PBL

"Objects in mirror are closer than they appear." That familiar warning applies to the windshield, not the rearview mirror, when it comes to technology. We're living on an exponential curve, but our brains make linear projections. When it comes to new technology, almost everything is closer than it appears. Moore's Law of computer memory power doubling every two years has proven true for 50 years. More computing power has been powering exponential technology change.

The education system we inherited serves about a third of young adults moderately well, but the rest don't get what they need and deserve. The future is approaching so quickly that the old model of K-12 and higher education is rapidly growing obsolete. The new work of education leaders in K-12 is to improve and innovate simultaneously.

The unintended consequences of national improvement efforts suggest that humility is warranted in our approach to policy and systems leadership. But thousands of improved schools and thousands of innovative new schools suggests that thoughtful school leadership can dramatically improve outcomes.

Personalized learning, aimed at deeper outcomes, is the new frame for U.S. education. It is an informed hunch that we can achieve dramatically better results by addressing the individual learning needs and interests of every child. This leadership-centric framework replaces a compliance-centric federal framework of standards, assessments and accountability. The shift from a sector focus on compliance to one of invention has significant implications for leadership preparation and development.

The leading advocate of student-centered and competency-based learning, iNACOL, defines personalized learning as "Tailoring learning for each student's strengths, needs and interests—including enabling student voice and choice in what, how, when and where they learn—to provide flexibility and supports to ensure mastery of the highest standards possible."[6]

"The days of universal and prescriptive solutions have passed," said Gene Wilhoit and colleagues in Leadership for Learning. Policy prescriptions from afar haven't and won't work. Wilhoit suggests picking a focus, committing to a learning agenda and developing over time. "Meaningful and lasting advancement will come through local trial, informed by past innovation and deep exploration, and enriched by a rich exchange of ideas."[7]

The preparation gap between the schools we have, what young people need and the need to create what Wilhoit calls dynamic learning environments suggests three maxims for the new work: leadership starts with an innovation mindset, leadership must be distributed and the work is iterative.

LEADERSHIP THEMES FOR A PROJECT-BASED WORLD

To thrive, and to help students thrive, in the current environment, the most effective leaders are mindful of their approach to leadership and take ownership for their own learning. Leaders adopt an innovation mindset, promote a distributed model for leadership and are constantly iterating.

1. **Leadership starts with an innovation mindset.** Our three-year investigation of education innovation[8] identified innovation mindset as the most important leadership trait—one that must be shared by community leaders and can be taught classroom by classroom. In addition to being a foundational leadership train, innovation mindset may be the most important aspect of career readiness—being prepared to create one's own job and the curiosity, self-direction and commitment to add value in every circumstance.

INNOVATION MINDSET = **GROWTH MINDSET** + **MAKER MINDSET** + **TEAM MINDSET**

Effort   *Initiative*   *Collaboration*

» **Growth mindset:** Stanford professor Carol Dweck's research uncovered the importance of a "growth mindset," the belief that abilities can be developed through dedication and hard work. Dweck says that people with a growth mindset "believe that their most basic abilities can be developed through dedication and hard work."[9] PBL teachers and leaders can thrive with adopting a growth mindset.

» **Maker mindset:** A study from Deloitte Growth Enterprise Services suggests that entrepreneurially minded individuals and companies are essential to economic growth [97]. Matt Candler, 4.0 Schools, incorporates three big ideas into each leadership development experience—be user-centric, be curious and iterate. In other words, embrace the fact that most kids are being prepared for jobs that do not currently exist, try some new strategies and make many more smaller, faster bets.[10]

» **Team mindset:** The Partnership for 21st Century Skills reinforces the focus on creativity and adds collaboration. "Learning and innovation skills are what separate students who are prepared for increasingly complex life and work environments in today's world and those who are not. They include creativity and innovation; critical thinking and problem solving; communication and collaboration."[11]

2 **Leadership is distributed.** If it were ever possible to lead top-down—to "roll out" a strategic plan dictating actions for each role—that time has come and gone. Teachers have always supplemented the adopted curriculum, but the trend has accelerated since the mobile inflection of 2010. With hundreds of thousands of education apps and resources widely available, teacher leaders are developing mix and match curriculum. Because new learning models are a team sport, it is critical to identify and engage teacher leaders in the task of imagining and inventing the future.

There are two ways to create coherent schools where everything works together for students and teachers. The first is an enterprise approach—everybody across the system doing the same thing using the same systems. The other approach is a portfolio of schools and networks, each with a unique model and customized supports. The key to both approaches is distributed leadership where teachers are empowered and have role and goal clarity.[12]

3 **Leadership is iterative.** We are in the early innings of personalized learning—tools and learning models are rapidly evolving. The opportunity to engage students and accelerate learning improves every month.

Joi Ito, MIT Media Lab, said, "Artificial intelligence and machine learning is changing every year, we need an education system that is dynamic, that changes every year—and it's got to be lifelong learning."[13] While AI offers great opportunity, notes Ito, there is tremendous risk associated with an education system that is not keeping up with tools that empower people.

Given dynamic communities, tools and learning models, education leaders should support an iterative approach—one that promises personalized learning for all students but frequently updates short-term agreements on next steps. Effective education leaders remain firm on equity and engagement and nimble on tools and learning models. They balance courage and commitment with humility and curiosity.

HUMBLY CURIOUS

Kevin Jones, a cancer researcher, describes his work *"as taking a bath in uncertainty and unknowns and exceptions and outliers."* School administrators can relate. Dr. Jones suggests the two most important values, given the level of uncertainty, are **humility and curiosity.**

"...if I am humble and curious, when a patient asks me a question, and I don't know the answer, I'll ask a colleague who may have a similar albeit distinct patient with sarcoma. We'll even establish international collaborations. Those patients will start to talk to each other through chat rooms and support groups. It's through this kind of humbly curious communication that we begin to try and learn new things,"[14] reflects Dr. Jones.

NEXT-GENERATION LEARNING

As school communities adopt blended, personalized, project-based and deeper learning, the new work is to create a coherent and customized course of study for each student. Following is a summary of the differences between managed instruction (a top-down leadership approach popular over the last 20 years) and next-generation learning.

	Managed Instruction	Next-Generation Learning
Design	Centralized	Bottom up, top down, inside out
Goal	Protocol compliance	Dynamic personalization
Pedagogy	Direction instruction	Personalized and project-based
Materials	Print on seven-year cycle	Dynamic modular digital library
Pacing & progress	Uniform by cohort	Individualized by mastery
Assessment	Periodic benchmark	Continuous and adaptive
Teacher experience	Compliance, observation	Co-creation, networked learning
Mngt competencies	Instructional design, pedagogy	Learner experience, EdTech, data
Desired outcomes	Math and reading test scores	Agency, communications, critical thinking, creativity & collaboration

The differences in strategies, systems, structures and desired outcomes are significant. Supporting next-generation learning and aiming at deeper learning outcomes requires a community effort. Developing talent, supporting new and transformed schools, provisioning powerful work-based learning experiences and providing youth and family services all require collaborative leadership and community partnerships.

COLLECTIVE ACTION

In his forward to Smart Cities, Sacramento mayor Kevin Johnson said, "Alongside mayors, faith leaders, civil rights advocates and business executives, all have a role to play to level the playing field and extend opportunity to all children."[15] If we expect our educators to create a demanding but supportive environment for students, we need to create the same sort of high-demand, high-support environment for education leaders.

"To achieve improvement at scale and create better and more equitable systems, we need a host of partners across sectors working in alignment to meet the unique needs of a child," said Jeff Edmondson, StriveTogether. To reach every young person cradle to career, added Edmondson, "we have to strengthen the connections and partnerships across a community in smarter ways to anticipate needs and respond accordingly, continuously improving and implementing strategies that intentionally accelerate outcomes and narrow disparities."[16].

COLLECTIVE ACTION FOR PROJECT-BASED LEARNING

StriveTogether, a subsidiary of KnowledgeWorks, supports dozens of communities that share four pillars of collective impact. Each pillar has a role in ensuring a high-quality project-based learning environment for all young people:

➕ **Shared Community Vision:** All participants have a shared vision for change, as well as a common understanding of the problem and how they will work collectively to solve it.

➕ **Evidence Based Decision Making:** Partnerships make decisions based on local data that show areas of need and promising practices that are already working for kids.

➕ **Collaborative Action:** Community members come together to use data to collectively move outcomes.

➕ **Investment and Sustainability:** Partnerships initiate or redirect resources (time, talent and treasure) toward data-based practices on an ongoing basis, and engage the community to ensure long-term sustainability.

Effective project-based learning that is accessible to all students requires strong community connections, shared vision and collaborative action.

In order to advance the new work, promote next-generation learning, and to spur collective actions, leaders need to assume new roles for a project-based world.

10 LEADERSHIP ROLES FOR A PROJECT-BASED WORLD

What should EdLeaders know and be able to do, particularly in a personalized, project-based context? Numerous thought leaders have weighed in on this.

In Leadership for Learning, Gene Wilhoit and colleagues name five key leadership deliverables—shared vision, values, culture, capacity building, accountability and trust—and the associated knowledge and skills, supporting dispositions and contextual understanding of each.[17]

Similarly, Lyle Kirtman and Michael Fullan include seven competencies for whole system change in their book, *Leadership: Key Competencies for Whole-System Change*. They emphasize competencies focused on building trust, challenging the status quo, establishing partnerships, a sense of urgency and more.

Building upon Wilhoit, Kirtman, Fullan and our 2015 Deeper Learning research[18], we identified ten roles that are required to foster deeper learning experiences, including project-based work. Although the examples largely pertain to leaders in the education sector (and result in schools that value engagement and inquiry), we think the roles below pertain to leaders in many different fields and types of organizations.

Below is a description of each education leader role in more detail, with illustrative insights from current practitioners and innovators in educational leadership preparation and development that advance project-based learning.

1. CONVERSATION LEADER

The leader brings in community members, students, business partners and invites them to co-construct the work. They create a positive social media presence and make it easy for people to contribute to the work. They embrace the paradox of creating powerful learning experiences through project-based learning. They listen well and know their community. They construct agreements that balance improvement and innovation.

> **Outcome**: A series of community agreements including graduate profile and next steps

2. VISION BUILDER

Leaders share pictures of powerful learning. They name current realities and challenge the status quo. They lead conversation about how the world is changing and what graduates should know and be able to do. They make the case for challenging project-based work. They build shared commitments for difficult work in phases and a reallocation of resources. At Bulldog Tech, a project-based learning school in San Jose, there is a belief that leaders should be firmly committed to vision and mission and flexible on how teachers (and students) get there.[19]
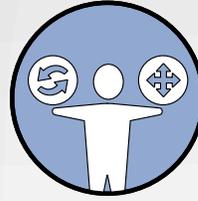
> **Outcome**: Shared vision

3. DESIGN THINKER

Leaders focus on learning for both educators and students. They model a growth mindset and learn from mistakes. They stay aware of new developments and emerging trends. They think about systems that support educators and students. They identify, according to the National Center for Innovation in Education, as lead learner and "chief curiosity officer." They use a structured approach to identifying, testing and refining new strategies.[20]
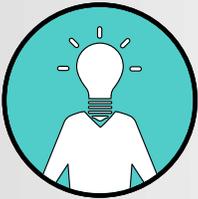
> **Outcome**: Learning organization

4. CHANGE MANAGER

Leaders build systems that improve educator effectiveness. The leaders break the change agenda into manageable projects. They assign projects to emerging leaders in the system as a developmental opportunity in a distributed system of leadership. The leader acknowledges when something is successful (working) and when something is not. They celebrate successes and failures. They produce a system that exhibits openness, trust, responsiveness, fairness and inclusion.

> **Outcome**: Coherent change agenda, distributed leadership opportunities, effective educators and systems that support them

5. SMART INNOVATOR

The leader expects he or she will have to take risks and maybe even break rules. Jeff Petty, director of Puget Sound Consortium for Secondary Innovation, a Big Picture Learning initiative, said, "The prevailing structure of rules is obviously not working well enough." School leaders making real equity breakthroughs have figured out how to innovate and push the systems they are in without getting fired. Emerging leaders need to be exposed to those very different approaches to school design (the innovaTIONS) as well as mentors who are skillful rulebreakers (the innovaTING), so they can develop this mindset. Instead of finding out what the rules are, the leaders we need are guided by a strong vision of what is best for kids."[21]
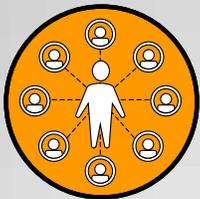
> **Outcome**: Successful innovations taken to scale

6. DEEPER LEARNING INSTRUCTIONAL LEADER

After facilitating agreement on deeper learning outcomes, learning leaders craft agreement on what should be common across the system including platforms, support services, professional development and community partnerships. Promoting deeper learning through project-based learning and related strategies leads to the following questions: What model of project-based learning (e.g., Buck Gold Standard PBL)? How many projects? Integrated how? Assessed how? Presented how? How will personalized learning support projects?

> **Outcome**: Role and goal clarity, strong aligned supports for teachers and students

7. DISTRIBUTIVE LEADER

Leading for deeper learning means sharing and distributing leadership roles and responsibilities across the system. It means moving beyond positional authority as "the leader" to creating a "system of leadership" that acknowledges leadership at the classroom, grade and school level. They demonstrate and value empathy.[22]

Outcome: Organization of leaders and a recognition that everyone in the organization is on a leadership development plan

8. ADVOCATE FOR ALL STUDENTS

Leaders commit to deeper learning for all students, regardless of background or skill. Bob Lenz, executive director of Buck Institute for Education (BIE), writes, "With quality Project-Based Learning, we do not have to choose one group of students over another to focus our efforts. Quality Project-Based Learning provides equity for students furthest from opportunity while enhancing the opportunities of those who already have it. We call that a win/win."[23]

Outcome: Shared values and a commitment to equity

9. COMMUNITY CATALYST

Leaders align the work of partners around a common goal and metrics for increased collective impact. Success is created through shared transparency, shared responsibility, collaboration and interdependence. This leader has a solid grasp of the public systems, organizations, groups and engages learning partners.

Outcome: Partnerships that support the work

10. POLICY ADVOCATE

Advocate for the context and conditions that will support educator and student success including broader aims (embracing deeper learning outcomes), authentic assessment and demonstrations of learning, weighted funding that reflects actual challenges, and investment in quality preparation and capacity building for teachers.

Outcome: Policies and resources that support educator and student success
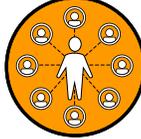
SCHOOL AND BUSINESS PARTNERSHIPS FOR PROJECT-BASED LEARNING

"We want students to be ready for the workforce and we want business to be part of the solution. In order for those two items to happen, we must create opportunities for businesses to "have skin in the game" and work collaboratively with educators in developing worthwhile, meaningful work. This changes the conversation from a blame game to a team game. When businesses are part of creating and implementing meaningful work, they become part of the process, and business has an invested interest in making sure student work is quality," said Tony Donen, principal of STEM School Chattanooga.

Donen coined the term "Business Partner PBL" to refer to a project sponsored by a community organization established for students that helps address a current issue that organization faces. He concludes, *"When businesses and schools work together to create meaningful Business Partner PBLs, students, educators and businesses all win."*[24]

EDUCATION AND COMMUNITY LEADERS: COMPLEMENTARY ROLES GENERATE OUTCOMES

In a project-based world, it is not enough to have education leaders working in isolation; it is critical that education and community leaders work hand-in-hand. The following table illustrates the complementary roles of education and community leaders and the outcomes they produce.

SET AND CONVEY VISION FOR DEEPER LEARNING

CONVERSATION LEADER

Education Leaders: Invite community to consider learning outcomes and experiences
Community Leaders: Establish employer and civic view of readiness
➜ **Outcome**: Community agreement

VISION BUILDER

Education Leaders: Share pictures of powerful learning, describe how system should work
Community Leaders: Describe how the world is changing, build vision for future through learning culture
➜ **Outcome**: Shared vision

INNOVATE & MANAGE SHIFTS TO DEEPER LEARNING

DESIGN THINKER

Education Leaders: Serve as "chief curiosity officer"
Community Leaders: Suggest, support and model structured design/testing process
➜ **Outcome**: Learning community

CHANGE MANAGER

Education Leaders: Phase work, distribute projects
Community Leaders: Provide project management training/tools
➜ **Outcome**: Coherent agenda, effective systems

SMART INNOVATOR

Education Leaders: Balance improvement and innovation
Community Leaders: Advise and support innovation
➜ **Outcome**: Better outcomes at scale

LEAD FOR DEEPER LEARNING OUTCOMES

DEEPER LEARNING INSTRUCTIONAL LEADER

Education Leaders: Support assignment and assessment of PBL
Community Leaders: Provide work-based experiences, mentors
➜ **Outcome**: Role and goal clarity, strong supports

DISTRIBUTIVE LEADER

Education Leaders: Distribute leadership roles across the system
Community Leaders: Serve as trustee of district and support organizations
➜ **Outcome**: Empowerment of/for youth

ADVOCATE FOR ALL STUDENTS

Education Leaders: Support more time/support for struggling students
Community Leaders: Support commitment for all students
➜ **Outcome**: Shared values, equity commitment

ENGAGE & SCALE DEEPER LEARNING

COMMUNITY CATALYST

Education Leaders: Align partners around common goals and metrics
Community Leaders: Mobilize and support partner organizations
➜ **Outcome**: Youth/family services

POLICY ADVOCATE

partnerships
Education Leaders: Advocate for conditions that support educator and students
Community Leaders: Build local and state support for quality learning
➜ **Outcome**: Policy/funding support

Leaders facilitate answers to big questions. As DePree points out, that starts by defining reality. Addressing big questions is what creates a legacy, momentum and effectiveness. How those questions are addressed defines values and culture. Leaders build capacity for effective solutions. They invest in people and systems that move an organization toward the desired future state.

> The first responsibility of a leader is to define reality. The last is to say thank you. In between the two, the leader must become a servant and a debtor...The art of leadership requires us to think about the leader-as-steward in terms of relationships: of assets and legacy, of momentum and effectiveness, of civility and values. —Max DePree[25]

DEVELOPING LEADERSHIP

While leadership development in education traditionally has relied on a linear path—from teacher to master's degree candidate to intern to assistant principal to the principalship and so on—the story has changed.

» Leadership options have grown exponentially in the learning space (school leadership, network leadership, EdTech non-profit and community leadership).

» There are multiple entry points and pathways to leadership.

» The traditional path typically does not prepare leaders for the novelty and complexity in schools today.

As a result, the best prepared leaders are those who take initiative and assume responsibility for their own development. Rather than simply enrolling in a graduate program and enrolling in a prescribed sequence of courses, aspiring leaders are best served to create and pitch their own learning and work experience. In essence, they create their own personalized learning plan with a rich set of complementary learning experiences.

Certification and degrees are part of the equation, but they are not enough. In addition to the best formal preparation available, rich and broad work (and life) experiences are the most important preparation for school and systems leadership. This collective set of experiences should be aligned to leadership competencies.

Taking a competency-based, job-embedded and proactive approach to leader preparation and development would improve the current outdated system of certification and professional development and would expand the pool of qualified leaders in the same way that "a system of teacher development linked to the needs of hiring entities that award licenses based on demonstrated competence could inform personalized development pathways for teachers."[26]

How do we make that vision a reality? We believe there are 7 keys for leadership development and that each professional ought to plot his or her own course, strategically seeking out the support of others.

7 KEYS TO LEADERSHIP DEVELOPMENT FOR PBL

1. VISIT GOOD SCHOOLS.
2. GAIN WORK EXPOSURE.
3. SEEK CHALLENGING ASSIGNMENTS.
4. PRACTICE COMMUNITY BUILDING.
5. KEEP GOOD COMPANY.
6. GAIN CERTIFICATION.
7. SHOW WHAT YOU KNOW.

1 VISIT GOOD SCHOOLS.

Prospective school and system heads should visit many schools to build context, increase exposure to new models and gain an appreciation of options. Visiting at least 50 schools in different systems or networks provides a healthy base of comparison. (See 100 Middle and High Schools Worth Visiting and 85 Elementary & Middle Schools Worth Visiting.)

Recognizing the life-changing benefits of school visits, the Ewing Marion Kauffman Foundation has sponsored trips for over 300 educators and community leaders from Kansas City. Their example may inspire other local philanthropies to sponsor school visits.

In addition to Kauffman's "field trip" style of visits, other options include volunteering, joining a board of a local school or attending school exhibitions or events.

TRAVEL AND SCHOOL VISITS AS VALUABLE PREPARATION

Democracy Prep operates seventeen high-performing schools in New York, New Jersey, Washington D.C and Baton Rouge, educating over 5,000 citizen-scholars. Reflecting on his leadership preparation, founder Seth Andrew found his $60,000 Harvard degree the least valuable investment. "It failed on every level," said Andrew. It was philosophy and theory and nothing specific about running great schools. More practical was his Building Excellent Schools fellowship, especially the mentorship of CEO Sue Walsh and Chief Academic Officer Linda Brown.[27]

"Experience was most important," said Andrew. He visited 30 different schools including KIPP, Northstar, and Frederick Douglas Academy to see what "good" looks like.[28]

Based on the value of his own travel-based learning, Seth incorporated the opportunity to visit as many as five continents before graduating.

2 GAIN WORK EXPOSURE.

Before leading a school, EdLeaders should have the opportunity to visit a dozen organizations and serve several internships in the private and public sector. Participating in community leadership organizations is a particularly good way to connect with a community, build a network and engage in work-based projects.

BUSINESS VISITS EXTEND INSPIRATION AND PREPARATION

Joseph Erpelding, principal at Poway USD's innovative Design39 K-8 school, said that making about 30 school visits with two other administrators was his most valuable preparation experience. "But now," said Erpelding, "it's visiting businesses." As a result, his student-centered, design-focused, project-based school has the look and feel of a San Diego startup.

Like high school students, prospective EdLeaders would benefit from several job shadows and short internships with local employers. According to Dave Rattray of Unite LA, "The best way to connect the hopes and dreams of students to learning experiences of today is to live in the world that is the hopes and dreams of their students."[29]

The industrial model of education we inherited isolates schools and leaders from the world of work. According to David Rattray, "Principals, teachers, counselors—they need to be seeing their subjects going to work every day and get familiar themselves."[30]

To truly understand how projects work today in a professional environment, leaders ought to not only visit schools, but also businesses in a variety of industries. Project processes, outcomes and leadership will have many commonalities—and also differences—across industries such as healthcare, financial services, IT, construction management or more.

Even if access to work exposure is limited due to time or travel restraints, virtual simulations or even "good old-fashioned role play scenarios," provide an immersive professional development experience that allows school leaders to better prepare for real-time challenges. Examples of topics include decision making in crisis, meeting management and instructional models. Attempt sample simulations that have been created by administrators.

SEEK CHALLENGING ASSIGNMENTS & PROJECTS.

The possibilities for aligned and valuable work assignments and projects are endless. Some of the work experiences should be full time posts and others temporary schoolwide or systemwide projects such as facilitating an improvement plan, leading an innovation pilot, managing an outreach campaign.

Consistent with the theme of this paper, spearheading projects may be one of the very best ways to prepare leaders for a project-based world.

Valuable and varied work experiences can be constructed inside a school district or network. Assigning project management to emerging leaders is a great way to distribute leadership, manage change and develop leadership. Projects can be staffed by people internal and external to the organization. Add people to the project team if they bring a required skill or perspective. If you want broader input, hold focus groups, conduct surveys or interview people.

PROJECT BASICS

Project plans should include:
- Clear goals and well-defined deliverables
- Timeline with major milestones, team meetings and scheduled sponsor reviews
- Staffing estimates for internal and external resources (especially paid contractors)
- Budget including discretionary budget and allocated time
- Dependencies with other projects or policies

Project roles include:
- Executive sponsor: owns the outcome and can approve a change in the budget or timeline
- Project manager: responsible for team effectiveness and final deliverable
- Team member: contributes to team goal, makes requested contributions
- Advisor: internal or external resource providing project-related advice
- Contractor: paid advisor with specific deliverables (e.g., develop and conduct a survey)

Sample school projects:
- A school committee to review and select a grade span blended learning model
- A faculty conversation about extended reach strategies
- A community conversation about social emotional learning
- A district conversation about competency-based progressions
- A chamber of commerce partnership to secure student internships
- A grant writing team to secure digital conversion funding

HOW TO SEEK CHALLENGING ASSIGNMENTS AND PROJECTS
Project-based work and development from Santa Ana School District

On assigning projects as a developmental strategy, David Haglund, deputy superintendent in Santa Ana Unified School District, said, "It is a very cool way to spread the message about managing a 21st-century workflow in the organization, and resets the thinking of the adults to be aligned to the instructional shifts tied to project-based learning implementations." Haglund provided five examples of using projects to execute strategy and develop leaders:

➕ **ACADEMIC PROGRAM DESIGN**. Kim Garcia, Curriculum Specialist, was charged with developing the Advanced Learning Academy's academic program. She was given a huge amount of freedom and support to "build the school" and has since become the school's first principal. That school expands into high school in the fall as an early college program and will share space with Santa Ana College.

➕ **HYBRID COURSE DEVELOPMENT**. Wes Kriesel, Program Specialist, was charged with developing our new hybrid courses for high school students. He recruited a team (Team 21C) to tackle that work and has been engaging crowd-sourcing and other innovative strategies to drive the workflow. They have used blogging and "live" community sessions to engage a wider set of stakeholders in the development process.

➕ **SOLVING PROBLEMS OF PRACTICE**. Daniel Allen, Executive Director, was charged with coordinating the work of district management team members to address six "problems of practice" identified during a student panel at the annual manager's symposium. Those groups have been working collaboratively this school year to address issues related to growth mindsets, personalized learning plans, the use of technology to support personalization, expanding access to meaningful extracurricular programs, critical thinking and restorative practices. He blogs about his learning experiences to demonstrate his learning progression.

➕ **COMMUNICATIONS REDESIGN**. Suzie Lopez, Community Relations Specialist, was charged with resetting the District's image in the community and improving efforts to "tell our story." She and a team of teachers and administrators worked to promote school choice by helping principals brand and market their schools in ways that were meaningful to the community. Their most recent School Choice Fair in October drew in several thousand community members to a festive event held in Downtown Santa Ana. The city closed off three blocks for the day, and every school hosted booths and highlighted student performers at a central stage.

➕ **MENU MANAGEMENT**. Mark Chavez, Director of Food Services, heard students' frustrations about food quality during student Local Control and Accountability Plan (LCAP) sessions and responded by creating a food-tasting event during which vendors were able to share their recipes, and students/parents voted on what to add to the school lunch menu.

"In each case, the issues were identified as needs in our LCAP, and the efforts were geared at driving a collaborative approach to problem-solving that included managers, staff, parents, students and community members," added Haglund.[31]

PRACTICE COMMUNITY BUILDING.

4

Leading—or even participating in—an engagement that results in a community agreement is a great experience for every prospective school head. Improvement plans require facilitation of internal agreements while plans for innovation often require broader community agreement (because they involve risk, investment and support).

Other examples include leading campaigns, uniting others for service projects and forging partnerships. Regardless of the context, all EdLeaders must be empathetic listeners, skilled communicators and capable facilitators.

KEEP GOOD COMPANY.

5

While attending conferences has been a long-standing education tradition (and one that remains a viable option for learning new schools and networking), there are now infinite ways to seek out cohorts of others aiming to improve their craft. Examples include mentorships, institutes, residencies, grant programs and even temporary commitments to judge grant or conference applications.

Whether formal programs or informal relationships that serve to promote growth, keeping good company is critical not only for leadership development, but also for navigating projects and learning opportunities.

Systems heads benefit from immersion in complex systems and exposure to different change theories and developmental pathways. Examples include attending a Santa Fe Institute event to experience system thinking. To learn with a smart cohort, seek nomination to be a Pahara-Aspen Fellow or join EdLeader21. And take the IDEO Leading for Creativity course.

Networks provide great opportunities to interact with colleagues with common goals. With the challenges of project-based learning, personalized learning and the proliferation of school models, more schools will join or form networks of like-minded schools (like HTH, EL Education, NAF and New Tech Network), and an increasing amount of preparation and ongoing development (signaled by micro-credentials) will be network specific.

LEAST OR BEST PREPARED?

Juan Cabrera grew up on the border and began his career as an English as a Second Language teacher in California. But his path to superintendent in El Paso took a nontraditional route that included law school, supporting the legal needs of Texas school districts and serving as an international software executive. Initially, Cabrera could have been considered less well prepared than other candidates, but in other ways he was remarkably well prepared having run large organizations, traveled the world and supported the governance of dozens of school boards. Since starting in 2013, Cabrera has added formal training to his credentials, but it is clear that his work experiences and the learning experiences associated with them provided valuable breadth and change-leadership experience.

School and system heads would benefit from broader professional experiences that build perspective, change-management skills, organization development know-how and facility with community development.

6 GAIN CERTIFICATION.

Most states require formal certification for school and system leadership. Most traditional programs that meet these requirements offer an assortment of courses that provide broad exposure to historical concepts in education and human development, but many are only weakly linked to current practice. There is some benefit to a survey approach, but it often does not add up to preparation to lead a great school or district particularly in an integrated, project-based world.

There are seven trends in educator preparation and development that align with the skills needed to serve as leaders in a project-based world:

» **Purpose-built**. School districts and networks are increasingly forming preparation partnerships around specific leadership and teaching competencies. Formed a decade ago by leaders of Achievement First, KIPP and Uncommon Schools, Relay Graduate School of Education provides preparation "that emphasizes the teaching and instructional leadership skills that have the greatest impact on student learning. The course of study is well aligned to the school models of the founding partners.

» **Problem and project-focused**. Schools like Gonzaga University's Leadership Development Program (which includes certification for principals, program leaders and superintendents) meets competencies through an ongoing simulation of a fictitious school district. Instructors present problems and projects such as passing a community levy, handling a lawsuit around a parent complaint, leading a staff training and more.

» **Online and blended**. The largest provider of math and science teachers in the country, Western Governor's University (WGU), offers online credentialing and master's programs.

» **Competency-based**. Like K-12 schools, preparation programs are increasingly focused on helping educators develop and demonstrate specific competencies. WGU and Relay are examples.

» **Subsidized**. Most aspiring educators pay for expensive preparation and certification programs. Not only is there an increasing emphasis on efficiency and effectiveness; there is some movement toward subsidized preparation for high-potential candidates including Americorps awards, district/network contributions and debt forgiveness.

PURPOSE BUILT: HIGH TECH HIGH GRADUATE SCHOOL OF EDUCATION

Good schools are coherent—everything is mission-aligned to benefit teachers and learners. A example of coherence, High Tech High (HTH) in San Diego, was formed around four design principles: personalization, adult world connection, common intellectual mission and teacher as designer. Everything at the school—structure, schedule, staffing, systems—works together for students and teachers.

"Most of life is a project and exhibition," said High Tech High founder Larry Rosenstock. Trained as a lawyer, Rosenstock taught high school carpentry. Larry's maker ethic is baked into the frequent exhibitions of authentic work at HTH. Rosenstock thinks we should ask students to use their head, use their hands, make things and think about things; that students should spend more time on production technology than consumption technology. Rosenstock thinks school should be about be revealing and uncovering—not just covering content. He thinks students should do field work and demonstrate their learning. Students in the 13 school HTH network cover less material than traditional schools, but they trade superficial knowledge for deep understanding. Scan HTH projects and you'll appreciate that these learning experiences are memorable for a lifetime.

In 2006, HTH was the first charter network to launch a graduate school of education. Like the school network, the High Tech High Graduate School of Education (HTH GSE) attacks three standard practices: tracking, isolation from the adult world and separation of thinking and doing. HTH GSE "prepares educators to design and to assume leadership in programs with a parallel commitment to equity, rigor and relevance for all students." Network schools serve as clinical sites for learning "an opportunity to take risks, reflect on practice and shape their own vision for effective teaching, learning and leadership."

The HTH GSE offers a one-year hybrid online leadership academy program, two-year teacher credentialing program (while teaching) and a masters degree in education (one year full time or two years part time). HTH GSE also offers three-day institutes, workshops, online courses, tours and a journal.

- » **Immersive**. Video is increasingly used to promote deliberate practice. Developments in virtual reality and immersive environments will make applications like ASU's Quest2Teach a common practice environment supported by a social-professional network.
- » **Personalized**. Design-built programs will increasingly incorporate artificial intelligence to fully personalize the learning experience, drawing on comprehensive learner profiles and assisting advisors in crafting customized sequences and simulations.
- » **Job-embedded**. Formal preparation and work experiences should be aligned, providing highly relevant just-in-time support for real challenges and setting the stage for extended impact.

The proliferation of personalized and project-based school models suggests that a greater percentage of preparation—formal and informal—should be linked to specific school models to provide a high degree of readiness.

SHOW WHAT YOU KNOW.

Along the way, leaders should document their professional experiences and credentials in a variety of ways—including but not limited to a portfolio, a public profile (LinkedIn), a resume and a personalized learning plan.

A key feature in any profile will be articulation of microcredentials—a practice that is gaining momentum. Relay provost Brent Maddin thinks it will be common to earn degrees and microcredentials simultaneously. Post certification growth will increasingly be signaled with stackable microcredentials. This will encourage more just-in-time learning from several different sources.

The following list is an example of the badges we think EdLeaders should earn through demonstrated competence.

Team Leadership	School Leadership	System Leadership
» Performance coaching » Personalized learning » Project management » Continuous improvement » Advising youth » Communications	» Human development » Learner experience » Competency-based learning » Teacher development » Facilitating community agreements	» Servant leadership » Information systems » Responsive support services » Community partnerships » Effective advocacy campaigns » Public finance » System improvement

PLOTTING THE COURSE: TAKING CHARGE OF YOUR OWN DEVELOPMENT

In order for learning to be deeper and project-based, there needs to be individual ownership. Given the speed of change, it is critical to take responsibility for your own learning and development. What you know and can do is up to you.

What Do You Believe?

Start by deciding what you believe about learning and youth development—write it down, share it in a blog. If you believe that deeper learning experiences, including project-based learning, are critical to prepare young people, make them central to your own development. Visit student-centered schools known for quality preparation.[32] Visit a variety of work settings to fully appreciate the demands of the automation economy. Seek or create projects that stretch your knowledge and skills.

LEADERS TAKE THE LEAD TO DEVELOP THEMSELVES

The concept of integration of experience and learning is perhaps best summarized by Gia Truong, Envision Schools, who said, "Students and educational leaders need similar learning conditions in order to grow, develop and succeed in their very different paths; they both need learning experiences that [are experiential, relational, and sustained.]" When asked the question about how a shared experience allow us to build community, think more deeply and meaningfully discuss learning and equity, Truong added, "It makes sense that effective leadership development mirrors effective classroom instruction, as all education is really a human development endeavor."[33]

What's Your Plan?

Creation of a personalized learning plan can move the seven keys to developing leaders from "things to do someday" to action steps.

A personalized plan reflects aspirations and is a combination of on-the-job and "extracurricular" learning; formal and informal; short-term and long-term experiences and leadership preparation go hand-in-hand and are competency-based.

Plans are important—and ultimately, a great personalized learning plan, along with targeted projects, evolve into a great resume.

What are Your Resulting Credentials?

Ultimately, the collective set of experiences and preparation can be wrapped up in a resume or online profile that is a condensed way of "showing what you know."

Each individual's path will be unique. For illustration we have included one example of a resume with an international, entrepreneurial project-based focus that combines experience with certifications.

PERSONALIZED PLANS FOR LEADER DEVELOPMENT

Every educator should seek to understand the leaning landscape and have a learning plan that answers the following questions:

- ➕ What do I need to learn to do my job better tomorrow?
- ➕ What do I need to know to get my next job?
- ➕ What do I need to learn to achieve my career objectives?

The plan articulates goals and includes parallel pathways of certification and formal preparation with aligned projects and experiences. Such experiences can result in credentials—or a resume as indicated below.

ALIGNED PROJECTS & EXPERIENCES

CERTIFICATION & FORMAL PREPARATION

PATTY LIDERAZGO
Deeper Learning Leader

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EDUCATION

Master of Education in Instructional School Leadership, Relay GSE, **2014**

Microcredentials:

- blended learning
- team leadership
- project management
- project-based learning
- community partnerships

BS, Universidad de Chile, **2004**

2016

2014

2013

2010

2009

2005

PROJECTS & EXPERIENCE

GLOBAL ACADEMY, *Principal, 2016-present*
Lead a global studies school community serving 400 high school students

MAYOR'S GLOBAL TRADE COUNCIL, *2015-present*

PARTNERSHIP DEVELOPMENT TEAM LEAD, *Progressive School District, 2013-15*
Led a project team focused on partnership development in support of the school district strategic plan

PARTNERSHIP DEVELOPMENT, *XYZ Software, Santiago, Chile, 2013*
Three-month internship with a private software vendor serving the education market

WORK-BASED LEARNING COORDINATOR, *Progressive School District, 2012-14*
Led a community team focused on internships and work-based learning

FOUNDING TEACHER, *Global Academy, 2011-12*
Founded and taught in this global studies microschool

GLOBAL STUDIES CURRICULUM LEAD, *Progressive School District, 2010-present*
Led district curriculum team focused on global studies. Team recommended learning outcomes, experiences, materials, assessments, and professional learning.

GLOBAL STUDIES SUMMER SCHOOL LEAD, *Progressive School District, 2009*

TEACHER, *Progressive School District, 2006-10*
Taught global studies in two secondary schools

PEACE CORPS VOLUNTEER, *Quito Ecuador, 2005*
Supported the development of a new dual-language school

"collaborative"　　"great"　　"innovative"

CONCLUSION

The rapidly changing landscape that has emerged from exponential technology has created a new set of realities, roles and responsibilities for leaders. What follows is a summary of what leaders ought to recognize as they prepare to plot their own course in a project-based context:

> Great cities take sustained leadership, impact-focused partnerships and aligned investments. What may be most important in the long run is that great cities will feature great learning opportunities. Great cities help everyone learn.
> —Adrian Fenty, Smart Cities

» **THE WORLD IS CHANGING—FAST.** Work is dynamic and often gig (short assignment) or project-based. People live, learn, work, shop on platforms. Automation is reshaping the employment landscape. Building and leveraging smart machines are new value-add opportunities. Education will need to stay nimble in terms of desired outcomes as well as practices, structures and communication

» **AN INNOVATION MINDSET IS KEY.** Today's world requires a mindset that emphasizes effort, initiative and collaboration.

» **LIFELONG LEARNING IS KEY—FOR EVERYONE.** Leaders need to be knowledgeable about gold-standard and high-quality project-based learning. Leaders should embrace deeper learning outcomes and hold community conversations leading to agreement on deeper learning outcomes. One tangible outcome for students could be to support frequent public presentations (exhibition nights) and publication.

» **LEADERSHIP IS NO LONGER A TITLE.** It is a distributed function or necessity within an organization to create optimal learning environments for all stakeholders (students, teachers, families and the organizational structures of schools). Leaders can help set the stage and improve or transform their organizations by managing change as a system of projects. Deeper learning requires community partnerships for place-based and work-based learning

» **COLLECTIVE ACTION BUILDS COMMUNITY AND DRIVES RESULTS.** Leaders lead conversations that result in a shared vision of a better future. They work with all community members towards common goals. Those who model working together with the community will also be modeling the social and emotional skills required to interact in society.

» **CHANGE IS HARD.** Leaders balance improvement and innovation by crafting community agreements for progress. They break change into doable chunks of work backed up by support and resources. They test big ideas in small safe places.

» **DIVERSE WORK EXPERIENCES BUILD BREATH.** They recognize the many and varied leadership roles and create their own path.You can't rely solely on formal preparation or what's provided by an organization. Take responsibility for your own path. Draw a bigger sphere of influence. Apply for or create learning experiences and seek out coherent leadership preparation.

» **PROJECTS ARE INTEGRAL TO A LEADERSHIP AND TALENT DEVELOPMENT STRATEGY.** Leaders construct developmental experiences for themselves and others who carry out the organization's change agenda and grow talent. Make available real-time learning resources.

Leadership preparation and leadership professional learning can (and should) be aligned to and modeled after the types of project-based and deeper learning environments we seek to create for students.

When leaders understand the implications of new technologies, assume diverse roles to lead collective action and spearhead their own growth, their capacity to lead communities toward powerful impact can be realized.

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