KnowledgeWorks®

NAVIGATING THE
FUTURE OF LEARNING

FORECAST
5.0

STRATEGY
GUIDE

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EXECUTIVE SUMMARY

As explored in KnowledgeWorks' 2018 forecast, *Navigating the Future of Learning*, people, smart machines and the code that powers them are interacting in new and deeper ways that are requiring us to redefine our relationships with one another, with our institutions and even with ourselves. As we grapple with these advances, the next decade represents an opportunity to imagine new kinds of education structures, practices and programs that support the healthy development of young people, enable lifelong learning and drive community vitality.

Responding to that forecast, this strategy guide is designed to help K-12 educators, postsecondary education institutions and community-based learning organizations:

» Understand the drivers of change shaping the future of learning

» Consider potential implications and the kinds of opportunities and challenges they could present

» Uncover ideals for the future of learning that could help education stakeholders move toward a shared vision

» Explore five opportunity areas for building strategies that will help education stakeholders and institutions shape the future of learning, shepherd learning ecosystems toward more equitable futures and demonstrate leadership in revitalizing our democracy

"Every learner has the right to achieve."

FIVE OPPORTUNITY AREAS FOR BUILDING EFFECTIVE STRATEGIES

CE

CIVIC ENGAGEMENT FOR THE SMART AGE
How might we activate inclusive forms of civic engagement aligned to the realities of the twenty-first century?

LL

A LEARNING LIFESTYLE
How might we integrate schools into their environments to make learning a joyful, lifelong practice for all learners?

SI

SYSTEMIC INTERDEPENDENCE
How might we forge structural partnerships within education and across other sectors for the benefit of all?

ST

SMART TECHNOLOGIES FOR ALL
How might we ensure the ethical use of smart technologies in education?

MS

MANY SELVES, MANY STORIES
How might we value students' lived experiences and identities to help them craft purpose-driven pathways that motivate ongoing, engaged learning?

Within each of these opportunity areas, this guide offers three examples of strategies that stakeholders might adopt, along with associated tactics. These strategies and tactics are intended as starting points that can be modified, adapted and developed to suit the unique visions of individual organizations, communities and states. This strategic guidance reflects insights and issues drawn from workshops with current learners and education leaders, innovators and influencers of K-12 school-based education, postsecondary education and community-based learning programs.

To help education stakeholders realize their visions for the future, this guide closes with a series of broad insights that can inform how stakeholders talk to their communities about change and how they go about implementing their chosen strategies.

CRAFTING EDUCATION FOR THE FUTURE

Over the next decade, everyday life is going to change dramatically. The expansion and integration of digital technologies will touch all areas of our lives, forcing us to confront new ways of interacting, thinking, working — and learning.

Changes brought on by technology will be met with shifts in the social landscape, including revisions to our economy, our neighbors and neighborhoods, our politics and the stories we tell about them. With such extensive change coming, education stakeholders must decide how they want to position themselves and their institutions for the future, because these changes represent both threats and opportunities. If stakeholders elect to ignore them, they will risk widening the equity gap, leaving too many learners unprepared and undermining learners' agency. But if education stakeholders take hold of emerging trends, they could cultivate their institutions to be tomorrow's innovators, preparing their learning communities to thrive in a world of acceleration, complexity and uncertainty.

As KnowledgeWorks explored in its latest comprehensive forecast, *Navigating the Future of Learning*, current trends tell of impending changes to the way we make decisions, express ourselves, reflect upon the world and relate to one another. The forecast spotlights the following five **drivers of change** that will have sweeping cognitive, social, ethical and institutional consequences.

AUTOMATING CHOICES

Algorithms and artificial intelligence are becoming embedded in our lives. They are automating many of our experiences, services and interactions with one another to achieve efficiency and personalization and are raising questions related to trust, bias and individual agency.

CIVIC SUPERPOWERS

Individuals, nonprofits and volunteer organizations are flexing their civic muscles. They are using participatory media, machine learning and data analytics to fill a growing governance gap, with hopes of reweaving the social fabric and redefining civic engagement.

ACCELERATING BRAINS

Rapid advances in technology and neuroscience are combining to transform our cognitive abilities in intended and unintended ways. They are reshaping how we partner with digital tools, relate with one another and engage with our surroundings.

TOXIC NARRATIVES

The narratives and the metrics of success and achievement that shape people's aspirations, choices and behaviors are becoming increasingly detrimental to individual and social health and are contributing to growing toxicity in systems and institutions.

REMAKING GEOGRAPHIES

Migration patterns, small-scale production and efforts to grow place-based and cultural assets are combining to reshape local geographies in response to economic transition and climate volatility.

IMPLICATIONS OF THE DRIVERS OF CHANGE FOR EDUCATION STAKEHOLDERS

What are the stakes of the five drivers of change? Where might they lead us? While no one can predict the future, whatever directions the drivers eventually take, they will have enormous consequences for the ways we interact, reflect and organize our society. The five implications below offer a taste of the importance and scope of the drivers of change. From each driver, different benefits and dangers may emerge. As you weigh these implications, begin to consider how education could lead the public response to each one.

Our use of smart technologies will rewrite age-old assumptions about free will, consent and intention.

Automation enables many possibilities related to saving time and energy. When fewer hours are spent in drudgery, more time can be dedicated to harnessing the uniqueness of human creative potential and fashioning innovative responses to our society's deepest problems in health, labor, education and other sectors. Similarly, when we have more decision-making support, it can be easier to personalize goods and services for individuals. Yet as we outsource more of our decision-making, we may not always be aware that we are doing so. When more of our personal and organizational decisions are informed by machines, our lives will be increasingly dictated by opaque processes beyond our control.

Young people could become vocal agents of change or silent passengers to the changes happening around them.

Faced with widespread transformations and public institutions offering slow, tepid responses to change, learners may be overcome by cynicism and distrust. As a result, they may resign themselves to passive viewership of the shifts happening around them. However, emergent trends suggest that this response need not be a foregone conclusion. Even before they can vote, learners are proving themselves to be among the savviest users of digital technologies and other tools for expressing their political wills. If this trend continues, tomorrow's learners may translate their shared voice into tangible social and policy gains.

The cognitive profiles of tomorrow's learners will look like no prior generation's.

With the support of more and better-connected digital technologies and neuro-enhancement tools, tomorrow's learners will increasingly be trained to think quickly, to make connections across disciplines and to communicate in more ways than ever before. But the gains that may emerge from this kind of thinking may come at the expense of other patterns of thought and action. Future learners may struggle to foster empathy, confront ambiguity and pause for self-reflection.

"We all need to be willing to be challenged and uncomfortable."

How we gauge success will either deepen or shrink systemic inequities.

Cultural narratives and metrics of success are central to the way we organize and conduct our lives. Yet our current metrics are rooted in long-departed social and economic conditions. In the absence of those enabling factors, clinging to outdated narratives of success puts learners on a course with fewer and fewer opportunities to fulfill their aspirations. If we do not begin telling new stories of success that are alert to the realities of the twenty-first century, we will deepen equity gaps by empowering only those students with the means to achieve twentieth-century dreams. But if we reimagine narratives and metrics of success, we may be handing learners the pens with which to write their own, more equitable futures.

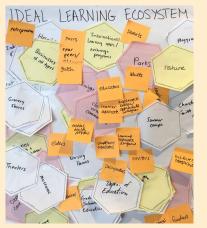## Our streets, neighborhoods and communities may look as they never have before.

New waves of migration, changing labor structures and environmental volatility will all affect what people see when they step out their front doors. For example, they may feel that their homes and communities are losing their unique attributes and histories. Such disruptions, however, may provide the conditions for social rejuvenation. Alongside large-scale changes to the way we work and live come opportunities to craft new identities, forge new practices, build new relationships and adopt new forms of interdependence.

"These drivers of change offer the chance to rebalance social and political power and to fill governance gaps."

METHODOLOGY

In winter 2019, KnowledgeWorks convened two workshops inviting learners, along with leaders, innovators and influencers from K-12 school-based education, postsecondary education and community-based learning, to explore what *Navigating the Future of Learning* might suggest for their organizations and others like them. The groups represented diverse perspectives within each of the three sectors, broadly defined. They included rural, urban and suburban stakeholders, including administrators, current and former educators, nonprofit and community-based learning leaders, policy experts, thought leaders and innovators.

Each workshop followed a similar format, which involved:

» Diving deep into the content of KnowledgeWorks' forecast

» Surfacing and analyzing major issues on the horizon

» Identifying top opportunities and challenges

» Prototyping possible solutions

» Clarifying participants' visions for the future of learning

» Considering ways of beginning to shape the future today

Insights from these activities informed this strategy guide's vision and recommendations.

A NOTE ON TERMINOLOGY

Throughout this strategy guide, the phrases "education stakeholders" and "education leaders, innovators and influencers" are used to name a broad range of agents who play parts in our learning ecosystems. Among others, this group includes K-12 teachers, principals, superintendents and school board members; post-secondary administrators, faculty and staff; policymakers, education nonprofit organizations and activists; and community-based educators and administrators.

The term "education institutions and organizations" denotes the many buildings, locales and systems in which learners find themselves, including, for example, K-12 school systems, community-based learning venues, community colleges, universities and continuing education programs.

AN EQUITY FOCUS

Historically, education has largely been designed by white, middle-class leaders for white, middle-class students. The needs and conditions of other cohorts, such as students of color, rural communities and immigrant families, have not informed the dominant design of education systems, institutions and organizations. Gaps in resources and opportunities are not simply a feature of our current education landscape; they are a direct consequence of inequities built into the frameworks that drive our present systems.

As we approach the next decade's shifts and face the challenges and opportunities brought about by accelerating technologies, particularly by automation and artificial intelligence, the gaps will widen if we fail to prioritize equity in all that we do. Equity — defined in this strategy guide as *each* learner having access to all the resources and opportunities they need to discover and reach their full potential — is a necessary starting point and design criteria for any strategic initiative for education transformation. The intention of this guide is to help education leaders, innovators and influencers generate strategic responses to the drivers of change shaping learning in ways that promise to close gaps across the diverse groups who rely upon our education systems, institutions and organizations. Every child can learn and be held accountable to the same locally defined competencies, yet each child may require a different combination of resources and supports to achieve their education goals and attain their fullest potential.

An equity focus prioritizes the following:

» **Structures and cultures** that are inclusive

» **Processes** that clarify assumptions and surface bias

» **Language** that builds bridges and understanding across differences

» **Funding models** that deliver equitable opportunities for learners regardless of location

» **Principles and policies of universal design** that explore how to meet specialized needs in ways that benefit all

"We need to keep in mind that we don't know everyone else's story."

A FOCUS ON THE HORIZON

All strategy is guided by a vision of what success looks like in the future. A vision reminds us of what we value. As they address the many implications of the drivers of change, education leaders, innovators and influencers will need to formulate bold strategies that are specific to their contexts, but which reflect some broader sense of what is desirable for the future of learning. Their shared visions will help define both the horizon and the scope of change. These shared visions will also dictate the precise choices and approaches used to transform education systems, institutions and organizations to meet the demands of the new era that is unfolding.

When we asked workshop participants to imagine what they wanted for the future of learning, the following qualities emerged as key elements of a shared vision:

» **Learning is *human-centered.*** It prioritizes healthy human development, joyful experiences and positive relationships. It supports individual practices of resilience and adaptation. All these hallmarks are foundational for encouraging lifelong learning and for navigating uncertain, complex futures.

» **Learning is *equitable*, comprehensive and inclusive.** Education promotes meaningful teaching, learning and development across life stages for all community members through equitable access to resources, relationships and opportunities.

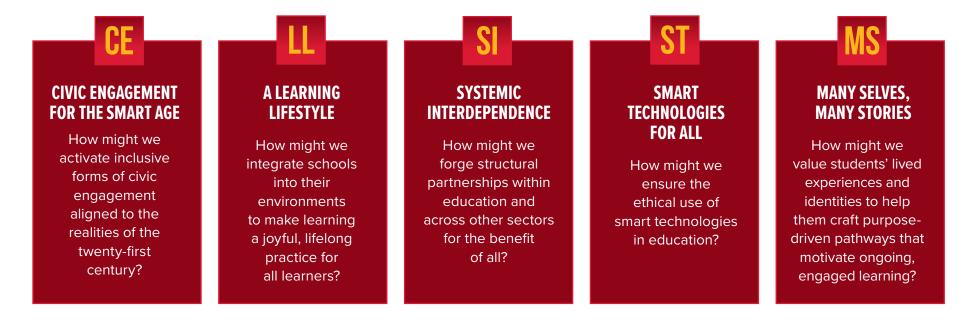» **Learning pathways are *limitless.*** Recognizing learners' diversity, distinct needs and aspirations, learning pathways are as varied and valid as students. No learners reach dead ends, and no single pathway represents the only path toward success.

» **Education is structured and governed as *an ecosystem.*** It is comprised of diverse actors and stakeholders interacting with one another through robust, adaptive networks and exchanging resources and expertise to produce meaningful, sustainable learning opportunities for *all* its members.

» **Education decision-makers *balance short-term needs with long-term aspirations.*** Stewardship of the learning ecosystem recognizes the immediate needs of learners and institutions while building capacity for future adaptation and relevance.

» **Education is *capable of systemic transformation.*** Because it is adaptive, flexible and responsive, education can be not only continuously refined and reformed but also systemically transformed to meet the needs of *all* learners.

While these elements may not represent a complete vision for the future of learning, they suggest values and attributes that workshop participants felt were integral to achieving more dynamic learning ecosystems and organizations that are aligned to the changing social, technological, economic, environmental and political realities of the next decade and beyond. Although the strategies in this guide were developed in response to this vision, these qualities are intended as springboards for you to modify, adapt and develop to suit your own vision for the future of learning in your organization, community or state.

OPPORTUNITIES FOR MOVING TOWARD A SHARED HORIZON IN EDUCATION

The five opportunities below identify areas in which education stakeholders could respond to the drivers of change and their implications to create meaningful strategies for navigating the future of learning while addressing their own needs and moving toward the vision elements highlighted above. These opportunity areas, synthesized from workshop insights, promise to help education leaders, influencers and innovators shape the future of learning, shepherd their learning ecosystems toward more equitable futures and demonstrate leadership in revitalizing our democracy.

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For each opportunity area, this strategy guide offers a set of recommendations exemplifying the kinds of actions that education leaders, innovators and influencers can take to support the healthy development of young people, enable effective lifelong learning and contribute to community vitality.

STRATEGIES FOR MOVING TOWARD A SHARED HORIZON IN EDUCATION

Organized by the five opportunities to move toward a shared horizon in education, the strategies below present a framework for actions and initiatives that education leaders, innovators and influencers can use to develop their own strategic agendas for change. For each opportunity area, three sample strategies are presented, along with associated tactics. These strategies cut across K-12 school-based education, postsecondary education and community-based learning.

CE CIVIC ENGAGEMENT FOR THE SMART AGE
How might we activate inclusive forms of civic engagement aligned to the realities of the twenty-first century?

It has long been commonplace for politicians to say that every election year represents a crucial moment for democracy. But the civic sphere of our age feels different; every day seems like a crucial moment for democracy. Not in recent decades has the shape and experience of the civic sphere felt so vulnerable or so subject to change. In the face of these perils, education institutions can empower learners to tackle challenges to democracy directly. If learners of all ages and backgrounds were trained to use their voices and to express their own visions for the future, our society would better reflect the aspirations of its entire populace. As the intellectual infrastructure of society, education is well positioned to take the lead in revitalizing a proactive citizenry and in developing the transformative voices needed for our time.

CREATE CULTURES OF ANTI-BIAS

If young people are to articulate their shared social and political aspirations for the future, there must first be environments of possibility where all learners' voices can be expressed and heard. To create these inclusive environments, education leaders, innovators and influencers must first have the courage to admit how their own systems and organizations have contributed to inequity, whether intentionally or not. In revisiting the past to move toward the future, stakeholders can build cultural competency and can take the lead in progressively closing gaps that block out some learners' voices, recognizing that the depths of inequity can only be corrected through iterative improvement.

» **Codify self-critique.** Education leaders, innovators and influencers can normalize measures for evaluating their offerings, curricula and organizational decisions for systemic bias, embracing policy initiatives that make anti-bias a core competency in all programmatic and procedural reviews.

» **Establish a common language.** Recognizing the difficulty of discussing systemic bias, education leaders, innovators and influencers can convene discussions to create a transparent, inclusive discourse designed to surface bias and to confront the histories that anchor us in inequity. Such a discourse can be treated as a work-in-progress, one that is continuously updated in response to emerging social and demographic changes.

CHAMPION SOCIAL RESPONSIBILITY

What are the rights and obligations of civically engaged people in the twenty-first century? Now more than ever, learners need support in developing the habits of self-governance and self-determination while also reflecting on how they relate to the broader society — and education may be the only domain capable of lending that support. Providing all learners with a framework to navigate the relationship between the self and the world can empower them to see obligations to their communities as being vital to their own development. Cultivating a sense of social responsibility can also help learners empathize with the needs of others even as they take greater pride in their own voices.

» **Expand governance roles for learners.** Including learners in education governance and policymaking can offer them direct experience in the challenges and opportunities of social participation. Boosting learners' voices can also lend education leaders, innovators and influencers the benefit of learners' and end users' perspectives.

» **Cast a light on shortcomings.** Smart technologies can amplify voices, but they can also broadcast the basest forms of politics. Rather than shying away from those digital low points, education leaders, innovators and influencers can explore how they can be used to enliven learners' discussions on responsible civic engagement.

GRAB THE MEGAPHONE

Innovations in smart technologies have recently amplified the voices of those who have long struggled to enact their political aspirations. Both learners and education stakeholders can benefit by adopting and extending these emergent models of digital activism and civic action toward more equitable and effective education. Helping learners develop the capacity to expand their digital literacy into political efficacy could help them realize the power they already possess to enact their civic visions. As they work to foster learners' agency, education leaders, innovators and influencers can adopt the tools of amplification themselves to build support for equitable structures that ensure all learners can be heard.

» **Partner with local activists.** Local grassroots leaders and activists have long set the trends for using available technologies for political and social gains. Learners and education stakeholders could explore partnerships with such local activists, pursuing strategies for disseminating their visions for education as well as for cultivating public support.

» **Teach digital civic leadership.** All students would benefit from effectively articulating issues that matter to them and from using smart digital media to amplify their voices. Requiring competencies that include these skills represents an important early step toward a more equitable and active civic sphere.

"Learners themselves have the power to counteract their toxic narratives."

LL A LEARNING LIFESTYLE

How might we integrate schools into their environments to make learning a joyful, lifelong practice for all learners?

If learning is to become a lifelong practice, it must be embedded in the community fabric in ways that allow learners to experience an array of learning opportunities and to discover the joys of continuous personal growth. To realize this goal, education leaders, innovators and influencers can reconsider the relationships that learning institutions have with their surrounding communities. On the one hand, in some places, learning systems and organizations have not always had the kinds of interactions with their communities that allow for working relationships between the two. On the other hand, stakeholders can uncover the promise of new education opportunities that currently exist in communities and that could emerge from their ongoing social, demographic and cultural changes. To find means of inspiring joyful, lifelong learning practices and achieving system-wide equity, education stakeholders can further explore ways for their institutions to join hands with surrounding communities, organizations and constituencies.

REIMAGINE EXPERTISE

Traditionally, education institutions have only recognized the expertise codified in the credentials of their instructors. While educators' subject and grade-level expertise continues to matter, rethinking who counts as an expert, and for what reasons, is essential to incorporating voices beyond traditional academic subjects and grade-level specialization. Recognizing the expertise of, for example, neighbors, artisans and small-business owners can bring new perspectives and knowledge into the classroom, helping learners discover new value in the community around them. Changing the face of the expert can also encourage learners and educators to rethink their own roles and obligations, urging them to embrace positions of agency and leadership in their communities.

» **Rethink know-how.** While maintaining high standards for expertise, education stakeholders can expand the frameworks for credentialing educators and education administrators. Alongside the place of established degrees and licenses, stakeholders can recognize the value and learning inherent in life experiences, organizational memberships and other metrics.

» **Pave a two-way street.** When we reshape the contours of expertise, we can see that all members of our communities can support learning lifestyles in interesting ways and work arm-in-arm with traditional educators to provide meaningful learning. Educators can also play new parts in this redefined landscape, conveying their knowledge about their communities and helping learners to become leaders in those issues of greatest importance to their communities.

RECHARGE MENTORSHIP

Throughout their education journeys, learners need helping hands who can offer personal experiences and reflection on the situations and decisions that they face. Because the challenges confronting learners are rarely confined to formal learning experiences, they need partners and guides who can shepherd their social-emotional development. Placing community members into expanded mentorships with learners — premised upon greater communication, social and emotional growth and personal warmth — can tighten the bonds of interdependency for both learners and their guides and can help learners build necessary social capital. It can also help students reimagine themselves as lifelong learners.

» **Bridge past and present.** Acting as mentorship hubs, education institutions can draw from their wealth of prior relationships to support mentorships. If they maintain contact with successful graduates, they could facilitate connections between past and present learners. Stakeholders in these institutions can also connect learners with community elders to forge intergenerational mentorships.

» **Move beyond traditional advice.** New models of mentorship could prioritize social-emotional support over academic or career counseling. Learners are more likely to succeed in all arenas of their development if they each have someone they can identify as "their person," someone whom they know will provide them with an emotional safety net.

ELEVATE THE EDUCATOR

When community members are revalued as experts or when approaches to learning shift, there is a danger that the status of traditional educators might fall in turn. To prevent such a loss of status, education leaders, innovators and influencers can take intentional steps to reassert the importance of traditional educators at the same time that they expand the bounds of expertise. Reinvesting in the wisdom of educators can yield benefits for both the community and its learners, strengthening their shared vision for education by empowering educators to be the beacons of creativity, enthusiasm and curiosity.

» **Promote the profession.** Although the consequences of education could not be higher, the status of educators often does not match the importance of their work. Education stakeholders could rectify this disjunction through sustained public awareness and engagement campaigns that aim to deepen understanding of educators' impact and elevate the status of the profession. Doing so could open new terrains for, and forms of, collaboration between educators and their communities.

» **Create avenues for trust.** Trust between educators and community members is not always assured, especially when educators' backgrounds and identities differ from those of their learners or when educators do not live in the communities where they work. To overcome these hurdles, education stakeholders can prioritize sustaining trust between educators and community members by, for example, refining educators' awareness about the lives, conditions and histories of the locales in which they work.

"How can schools be the place around which students can build a local identity?"

SI SYSTEMIC INTERDEPENDENCE
How might we forge structural partnerships within education and across other sectors for the benefit of all?

Every day, our education institutions and organizations confront stumbling blocks to their success. Among other obstacles, they stare down the prospects of diminishing funding, political stasis and complacency from portions of the public. With narrowing forms of support from traditional sources, education stakeholders can turn to the broader webs of interdependency in which they are already enmeshed. When they begin recognizing themselves as part of a learning ecosystem, they can better leverage existing — and build awaiting — partnerships with diverse institutions and organizations from across their communities, states and countries. Rather than holding their breaths for policy to reform or funds to materialize, stakeholders can draw upon the strengths of these webs of exchange to create innovative responses to challenges at home and to support their partners throughout the broader education landscape. If they embrace their position as part of a learning ecosystem, education institutions and organizations can lead the way toward writing their own futures.

BREAK DOWN SILOS

Education institutions and organizations often operate in silos, looking only to familiar faces who share common circumstances and contexts. This tendency can narrow the odds of formulating creative answers and can discourage institutions from addressing imminent change. By adopting an ecosystem approach, education stakeholders can seek common ground across boundaries and can discover pathways to develop mutual support. Institutions and organizations can design new channels to exchange distinctive strengths and assets and to elevate the learning conditions and experiences of all learners. Sharing diverse perspectives could also expand mindsets and open potential partners to new shared opportunities.

» **Bridge the public-private divide.** Many of the challenges facing learners cut across social and economic divides. Education leaders, innovators and influencers from both public and private institutions could convene to strategize on issues of mutual concern, such as college access, teen stress and anxiety, and growing income divides.

» **Facilitate interdisciplinary work.** The changing workplace increasingly demands interdisciplinary thinking and problem solving. To prepare learners for those demands, education institutions and organizations can identify ways to forge connections between traditional disciplines. For example, they could explore integrative curricula and assessments, or they could collaborate with partner organizations from across the community to incorporate a range of perspectives and experience and to ensure all learners' competency in future-focused knowledge, skills and dispositions.

CULTIVATE INSTITUTIONAL NEIGHBORS

Working alone, education institutions and organizations cannot keep up with the pace of change nor with the full scope of learners' and educators' needs. However, they can draw strength from working with other vital community systems. Successful natural ecosystems owe their stability and adaptability to the interconnecting roles and functions of the many species within them. Likewise, learning ecosystems can augment their resilience and expand their services and functions by linking to nearby systems with diverse expertise. Sectors adjacent to education such as housing, food, health, law enforcement and transportation could be fruitful partners in addressing and preventing structural and systemic inequities in education.

» **Identify leverage points in other systems.** Learners who leave home hungry, cold or scared cannot entirely shed those realities when they sit down to learn. But cross-sector collaboration can begin to help. The broader pursuit of partnerships between, for example, foodbanks and education institutions could ensure that learners can focus on learning instead of empty stomachs or other challenging circumstances.

» **Expand peer-to-peer support across sectors.** Like learners, stakeholders in education and adjacent systems can benefit from maintaining positive relationships to support their performance. As part of a broader effort to revive our social landscape, experts across systems could participate in multilateral professional development engagements and collaborations to spur their partners toward new methods and kinds of problem solving.

GROW PARTNERSHIP CAPACITY

Working across sectors may be difficult, but it is far from impossible. Developing and sustaining healthy partnerships and interdependent relationships is a competency that can be learned and honed. Furthermore, it is a competency that can pay enormous dividends. The solutions that emerge from partnerships between organizations and institutions can harness the same creativity and energy for imaginative, interdisciplinary thought that educators hope to instill in learners. To realize this potential and other systemic gains, education leaders, innovators and influencers need to hone their skills in creating a shared vision across diverse groups, in cultivating trusted relationships among stakeholders and in identifying sustainable financial models.

» **Take Partnering 101.** Everyone in the learning ecosystem can benefit from knowing how to partner and connect more productively. Education institutions and organizations could identify and share best practices from their partnerships that work toward mutual benefit, or they could sponsor professional development opportunities to build partnership capacity. Lessons in partnering may also come from outside the education sector.

» **Establish new roles.** Education institutions and organizations can establish new roles oriented toward participation in a broader learning ecosystem. Positions such as a learning ecosystem steward responsible for coordinating contributions and monitoring outcomes across contributing organizations could help solidify ecosystem structures and provide continuity across leadership change. Creating new roles could also signal the ongoing priority of ecosystemic approaches and their value for all education stakeholders.

"If we do not have those structures in place to push our vision forward, it is too easy to relapse into the status quo model of education."

ST SMART TECHNOLOGIES FOR ALL
How might we ensure the ethical use of smart technologies in education?

For education stakeholders, advances in smart technologies such as artificial intelligence (AI) and neuro-enhancement tools promise to enable new approaches and efficiencies defined by greater access to education resources, greater personalization and stronger supports for learners. These technologies extend the real possibility that our aspirations for the future of learning might be realized more quickly than we ever thought feasible. Yet smart technologies are only as good as the code that powers them and as practices that guide their use. If education stakeholders do not intentionally manage the ethical considerations related to these codes and procedures, they might unknowingly introduce into their institutions and organizations unintended consequences that could deepen structural inequities or otherwise undermine their core values. But if education stakeholders accept their obligations as stewards of these tools and practices, they can design and integrate smart technologies into the delivery and administration of learning in ways that not only enhance the experiences of all learners, but which also chip away at the inequities lurking within our institutions, systems and policies.

SPOTLIGHT DIGITAL RIGHTS

Even though smart technologies are increasingly pervasive in our daily lives, most of us do not realize the consequences that these technologies might have for our ethical principles. As education stakeholders explore how they can use artificial intelligence and neuro-enhancement tools effectively, they also need to pursue options to counteract the lack of public awareness about digital technologies and their implications. When learners and community members understand the ethical stakes of digital technologies, they will be better informed to decide on their own uses of technologies and to express their ethical expectations for digitally enhanced tools and practices.

» **Prioritize digital literacy.** Recognizing that many constituencies do not understand current data use and privacy, let alone the prospects raised by smart technologies, education stakeholders can host ongoing information and training sessions to teach the broader community about topics such as digital literacy, informed consent and data mining. They can also support learners in being wise consumers and co-creators of these technologies.

» **Co-author a Bill of Data Rights.** As digital technologies play ever-greater roles in our lives, we vitally need to articulate what rights we expect protected when we participate in digital life and employ digital tools. Education stakeholders can lead the charge, joining with community members, learners and policymakers to formalize a Bill of Data Rights governing the use of smart technologies in education.

PARTNER TO INTERVENE

If education stakeholders want to ensure that smart technologies run on ethical algorithms and data, they need to develop processes that allow them to input into their logic and assumptions. Because most education stakeholders are unfamiliar with smart technologies, they must depend on new partnerships that can enable them to study AI, neuro-enhancement tools and other smart technologies indirectly. While also pursuing professional development opportunities to hone their own understanding of smart technologies, education stakeholders can leverage their authority and purchasing power to rewrite their roles as not simply passive consumers of smart technologies but rather as stewards and co-authors of the code powering them.

» **Set the terms.** Without the technical knowledge to understand the code behind smart technologies, education stakeholders need plain-language explanations of how it works. As a condition of purchasing these technologies, stakeholders can require companies to provide them with insight into the assumptions and risks underlying their smart code.

» **Pursue long-term dialogue.** Because the code used by smart technologies is not static, education stakeholders cannot be content to know that smart technologies follow ethical guidelines when they are first implemented. Instead, stakeholders could pursue ongoing and mutually beneficial dialogues about ethics with the smart technology companies with which they do business.

CHOOSE OPEN GOVERNANCE MODELS

When evaluating smart technologies for consistency with their ethical principles and communal values, education stakeholders must have support. On their own, stakeholders simply cannot anticipate all the challenges and opportunities that smart technologies pose for their shared visions of education. Recognizing this reality, they can turn to the power of open governance models to assist them in implementing and protecting their values in their use of AI, neuro-enhancement tools and data-driven processes. Doing so will not only demonstrate transparency and enhance public trust but also will ensure that education governance reflects the diversity of learner populations.

» **Co-create frameworks.** Education stakeholders can assemble coalitions of diverse sources of authority, experience and expertise to assess the uses of AI, neuro-enhancement tools and other smart technologies in their learning ecosystems. These standing coalitions could not only oversee the initial implementation of these technologies but could also compose guidance for their maintenance, management and review.

» **Anticipate cognitive divides.** AI-based education applications and neuro-enhancement tools are already changing learners' cognitive profiles. Education stakeholders can convene panels to illuminate the consequences of these changes and to determine what policies, practices and oversight can best ensure that emerging differences in learners' cognitive profiles do not exacerbate nor introduce new inequities.

"As educators, we need to expose the biases in smart algorithms."

MS MANY SELVES, MANY STORIES

How might we value students' lived experiences and identities to help them craft purpose-driven pathways to motivate ongoing, engaged learning?

Authentic engagement in learning is a key factor for student achievement. It can be realized when learners have opportunities to bridge their lived experiences and identities with their learning, introducing relevance and aspiration to their educational journeys. However, standardized curricula and assessments often prevent learners — especially non-white, economically disadvantaged learners — from engaging fully with the issues and identities that they hold most dear. These obstacles are reinforced by outdated narratives of success that privilege certain pathways and kinds of knowing and provide few opportunities for learners to integrate their authentic identities in meaningful ways. To address these concerns, education stakeholders can prioritize what matters most to learners and recognize the many versions of success in life while also preserving high expectations for student learning. When learners can draw value from their own experiences, cultivate personal resilience through self-discovery and craft their own narratives of success, education will not only honor learners' diversity but will also invest all learners with the voice and agency necessary to create their own senses of purpose.

EXPAND NARRATIVES OF SUCCESS

Narratives of success are not always born of official channels, but they are often embedded within them. Even when education policymakers are guided by best intentions, they tend to codify assessment and accountability frameworks built upon assumptions about what paths learners ought to follow and what lives they should be envisioning for themselves. Too often, these assumptions have closed the doors of success on many populations, especially non-white and non-middle-class learners. Without lowering the benchmarks of achievement or relinquishing high expectations, education stakeholders can reappraise how they define success in learning institutions and can broaden what kinds of pathways they support learners in pursuing.

» **Co-author new narratives.** Disconnects between education stakeholders' expectations and learners' experiences and aspirations will inevitably emerge when the former determines narratives of success without the input of the latter. To minimize this danger, education stakeholders can invite families, communities and learners of all ages, identities and backgrounds to rewrite narratives of success alongside them, ensuring that success metrics and accountability systems reflect the aspirations of those whose learning they measure.

» **Advocate for alternatives to "college for all."** Working with their counterparts in the broader learning ecosystem, education stakeholders can adopt measures to promote the range of options that all learners have for postsecondary learning and growth. Among other opportunities, stakeholders might highlight the value, self-development and promise that learners can discover through apprenticeships, micro-degrees and gap years.

TEACH FOR SELF-DISCOVERY AND HEALING

The currency for success in the future is choice — the ability to survey options for personal and professional mobility. While education stakeholders can institute new measures of achievement, learners can build resilience and self-awareness by articulating their own personal accounts of the values and attributes of success based on their unique lived experiences. Education leaders, innovators and influencers can help learners catalyze engaging learning journeys by facilitating personal interpretations of success that link their learners' histories and identities to future visions of wellness and growth while also addressing the impacts of factors such as trauma.

» **Step back and step up.** Prioritizing learner agency, education stakeholders can position themselves as aides who help all learners attain healthy social-emotional development and articulate visions of themselves and their dreams. Without imposing their own ideals, stakeholders can provide the tools and supports for learners to imagine how their values and histories can empower them to achieve their goals and to engage in lifelong growth.

» **Link the social and the self.** Learners who know the value of their heritages and identities are better prepared to understand their obligations and debts to others. While remaining cautious not to override learners' pathways, stakeholders can encourage students to articulate how their identities and backgrounds can equip them to act on their values, participate in their communities and contribute to the world.

BROADCAST BENEFITS

Our metrics of achievement manifest in education because they reflect deeply rooted cultural narratives and social norms. Learners hear these stories repeated far beyond the walls of their education institutions. For all learners to chart their own pathways by embracing their lived experiences and identities, education stakeholders must foster change in the ways in which the broader public understands metrics of achievement. Without such changes, the narratives that learners craft for themselves may be overridden by the outdated narratives of the broader culture, reinstating the same forms of inequity that education stakeholders sought to redress.

» **Talk history – and the future.** While metrics of achievement arise from distinct moments in time, eventually we universalize them by forgetting how they came to be. Education stakeholders can remind the public how the enabling conditions behind our dominant narratives of success have long since departed and will soon be even further out of sync with the realities that learners will face.

» **Offer proof.** Because our metrics of achievement are deeply engrained, we are prone to question alternatives and those who propose them. Education stakeholders can combat this recalcitrance by highlighting the consequences of grasping at unrealistic stories and by publicizing stories about learners who have found fulfillment and success under new paradigms.

"We are all craving a sense of identity rooted in place in a rapidly changing and divisive world."

PRINCIPLES FOR SETTING A STRATEGIC COURSE

As described earlier in this guide, the next decade will see major shifts in key factors affecting how we organize society, relate to one another and conduct our daily lives. Education leaders, innovators and influencers can lead the public response to these shifts by honing shared visions for the future and pursuing strategies related to the key opportunity areas described on the previous pages. As you deliberate over the contents of this strategy guide, the insights below can also help you tailor a unique vision and plan for your contributions to navigating the future of learning.

LEADING WITH A VISION IS LEADING WITH INSPIRATION.

For some learners, community members and education stakeholders, the prospect of impending change will be difficult to swallow. Some people will inevitably retreat to more comfortable, familiar – and unsustainable – terrain. Likewise, some will deny that the strategies and tactics presented in this guide are viable. As education stakeholders prepare for the changes coming over the next decade, they will no doubt face similar resistance in their own communities. They can preempt those challenges by first working with local stakeholders to craft a collective vision for the future that is attentive to the unique attributes of their own learning ecosystems. If education leaders, innovators and influencers empower their stakeholders to come together constructively in the face of enormous difficulties, those stakeholders will rise to the challenge. When they can see this moment as an opportunity to dream anew, they will be less likely to let the obstacles of the past or present dictate the possibilities of the future.

LEAPFROGGING CAN LEVEL THE FIELD.

Throughout its pages, this strategy guide assumes that systemic inequities pervade our learning ecosystems, that they can only be rectified with aggressive responses and that anything short of total and complete equity is a sign that more work remains to be done. Yet the sheer difficulty of correcting these systemic flaws can make the task feel insurmountable. While this strategy guide maintains that structural inequities can be eliminated with time, intention and perseverance, present learners cannot wait for learning systems and organizations to be healed. As education stakeholders pursue strategies to close structural equity gaps, they can simultaneously ensure that all current learners receive the best opportunities by helping them leapfrog over present inequities. Instead of attempting to introduce underprivileged learners to the same present opportunities as privileged ones – which will always yield equity lags as privileged learners continue advancing forward – education stakeholders can focus on getting all learners to the future horizon of human-centered, equitable and limitless learning.

INCLUSION IS NOT A ZERO-SUM GAME.

Too often, some among us assume that calls for greater inclusion of more diverse voices are euphemisms for raising up non-white and non-middle-class learners at the expense of their white and middle-class counterparts. Rather than engaging with the motivations for this fear, education stakeholders can deny the proposition that equity, inclusion and diverse participation are zero-sum games. When presented with resistance to these ideals, stakeholders can highlight the benefits that principles of universal design impart to all learners throughout a learning ecosystem. Among other things, adopting varied perspectives – that is, practicing empathy – can reveal shortcomings in the effectiveness or relevance of certain systems, opportunities or practices. At other times, using empathetic frames can unveil latent needs. If education stakeholders remind dissenters that equity, inclusion and diverse participation can rejuvenate a learning ecosystem, all stakeholders will have a greater chance of recognizing the ways in which these attributes enliven conditions for all members of a learning ecosystem.

YOU CAN SEIZE THE OPPORTUNITY.

The visions and strategies articulated in this guide are not designed for the select few. All education leaders, innovators and influencers can stand to gain by using them to inform their directions and to guide their systemic transformations for the future. Even the best learning ecosystems will fall behind if their stakeholders do not adopt conscious, intentional maneuvers to prepare for emerging trends that will affect the education landscape over the next decade. For all other learning ecosystems, the stakes of action or inaction are even higher. But if any people can answer the call of the future, it is those charged with stewarding education. Now is the moment to become an active agent of change. You can lead the way in navigating toward new horizons for the future of learning.

"We have the opportunity to start over using what we have learned from our mistakes."

TAKING ACTION NOW

If education stakeholders wish to lead the way toward the future of learning, they must develop approaches that foster civic engagement; broaden the boundaries of learning; build bridges across systems; prioritize equity in the use of smart technologies; and value the social, cultural and emotional identities of learners. Even as they are entrenched in systems that can be slow or reluctant to confront change, stakeholders have the power to begin moving their learning ecosystems toward the future.

To get started, they can begin by answering the following questions:

» What is your vision for the future of learning?

» What implications do the drivers of change from KnowledgeWorks' forecast have for your learning ecosystem?

» What strategies in this guide seem most relevant to your learning ecosystem's vision and circumstances?

» How might you modify these strategies to reflect your organization's or learning ecosystem's vision, values and context?

» What role should equity play in your organization or ecosystem, and how does it align with your other values and strategies for the future of learning?

» What resources — time, personnel, influence or partnerships — could you find or redirect to implement your chosen strategies?

» Where might you begin? What are the first steps toward change for your organization or learning ecosystem?

ABOUT KNOWLEDGEWORKS

KnowledgeWorks is a nonprofit organization dedicated to advancing personalized learning that empowers every child to take ownership of their success. With nearly 20 years of experience exploring the future of learning, growing educator impact and working with state and federal policymakers, our passionate team partners with schools and communities to grow a systemwide approach to sustain student-centered practices so that every child graduates ready for what's next. Learn more at KnowledgeWorks.org.

To obtain print or digital copies of KnowledgeWorks' 2018 forecast, *Navigating the Future of Learning*, visit KnowledgeWorks.org/resources/forecast-5.

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