NAVIGATING THE
FUTURE OF LEARNING

FORECAST 5.0

A NEW ERA IS UNFOLDING

People, smart machines and the code that powers them are interacting in new and deeper ways. Over the next decade, exponential advances in digital technologies will require us to redefine our relationships with one another, with our institutions and even with ourselves. Every facet of our lives, including how we teach and learn, will be touched by this new era of partners in code.

While many changes have the potential to influence education over the course of the next decade, five will be critical for understanding the profound challenges and opportunities facing it. Artificial intelligence and algorithms are automating many aspects of our lives. Engaged citizens and civic organizations are seeking to rebalance power. People have increasing access to tools and insights that are reshaping our brains in intended and unintended ways. Outdated and misaligned systems and metrics of success are contributing to chronic health issues. Communities are working to remake themselves in the face of deep transitions.

How these forces combine and interact will present a new context for education and a new landscape of choices for transforming teaching and learning.

Active engagement with the changes on the horizon is urgent. Many of the organizations, institutions and systems that structure our daily lives and support learning are increasingly out of sync with both existing and emerging needs. The new era could exacerbate the current misalignment and deepen existing inequities, or it could inspire new frameworks for how we live, work and learn. The choices we make today will determine not only whether people can thrive in the near term, but also who might be best positioned to thrive in the future.

Education – as both a cultural value and a system – is critical social infrastructure that can bolster our capacity for adaptation and evolution. During this period of transition, education's role in supporting the healthy development of young people, enabling effective lifelong learning and contributing to community vitality will be increasingly

crucial. K-12 schools and districts; postsecondary education institutions; community-based learning organizations such as museums and libraries; and the teachers, administrators and innovators who lead them will be at the center of a broad effort to generate new organizing principles for our time. They cannot do it alone, and society cannot do it without them.

Exploring the future of learning today is an act of stewardship to our future communities and to the young people who will live in them.

USING THIS FORECAST

This forecast identifies five **drivers of change** that will impact education over the next decade and imagines what those drivers of change could mean for learning. These major societal shifts are grounded in trends, patterns, plans and developments that are taking place today. Some of the drivers of change may feel relatively familiar, while others might feel entirely new. You might see in them exciting or daunting possibilities, or both at once. For each driver of change, two **key questions**, one general and the other specific to education, prompt initial reflection on its impacts.

After describing the drivers of change, this forecast presents a series of **provocations**, clustered by four themes, that depict possible features of the future teaching and learning landscape. These provocations aim to inspire thinking about what might be possible for learning — and what might

be necessary to ensure that education systems and organizations support individual development, effective lifelong learning and community vitality. Next, **signals of change** provide examples of how some of the future possibilities described in the provocations are beginning to play out today.

The forecast concludes by presenting **opportunities to respond** to the changing landscape today. A **poster** provides a visual overview of the forecast's core content, with the drivers of change summarized on one side and the provocations shown on the other.

As you grapple with the changes on the horizon, delve into what they could mean for learning and consider implications for your own context and practice, approaching the future with a spirit of exploration will help make it approachable. You might

find yourself dipping in and out of the material. For example, you might read part of the narrative, locate it on the poster, find something else that captures your attention and then locate more detail about it in the narrative.

We can never know how the future will unfold, but we can expand our ideas about what might be possible and necessary for learning. We can also identify where we might want to intervene, harness or adapt to shape a future of learning in which all students can thrive and to help steer society's transition from one era to the next.

5 DRIVERS OF CHANGE

Drivers of change are major societal shifts that will impact education over the next decade. They combine multiple trends, patterns, plans and developments to identify broad patterns of change. For each driver of change, two key questions, one general and the other specific to education, prompt initial reflection on its impacts.

AUTOMATING CHOICES

Algorithms and artificial intelligence are becoming increasingly 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 shaping how we partner with digital tools, relate with one another and engage with our surroundings.

TOXIC NARRATIVES

The narratives and 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 placed-based and cultural assets are combining to reshape community landscapes in response to economic transition and climate volatility.

The next few pages describe these drivers of change in more detail and raise key questions about what they could mean for learning.

AUTOMATING CHOICES

Algorithms and artificial intelligence are becoming increasingly 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.

Automated interactions and transactions that are performed by artificial intelligence will become more efficient and will provide greater convenience and efficiencies in many areas of our daily lives, including city services, transportation, retail, professional services, health care, entertainment and education. Already, automated recommendation software provides individuals with suggested articles to read, products to buy, courses to take and vacations to consider based on past online purchases, location and search history, and other personal data. Municipal, business and consumer organizations are increasingly using artificial intelligence, along with predictive analytics, to anticipate individuals' needs and direct them toward services. Financial service robot-advisors are creating personalized investment portfolios. Deep learning applications are successfully reading radiology images to detect cancerous lymph nodes. Fire departments are making use of data analytics to recommend whether a medical emergency can be treated on site or must be treated at a hospital. Judicial and law enforcement departments are using algorithms and predictive analytics to recommend sentencing and to identify potential perpetrators of future crimes.

Though such tools are typically adopted in the name of efficiency, some uses have resulted in unintended negative consequences such as the over-monitoring of communities of color or the denial of claims by, or loans to, certain populations based on biased data.

Looking ahead, if potential biases in underlying data, interpretive models and the values of algorithm designers are not transparent, tradeoffs for gains in personalization and efficiency could include constraints on human agency in decision making and the illusion of free choice. Ethical frameworks developed by cooperative groups of interdisciplinary professionals, policymakers, community members, educators and learners will be critical for assessing the risks, benefits and challenges of living in a world embedded with algorithms and artificial intelligence.

KEY QUESTIONS

» What challenges and opportunities might arise from the widespread use of artificial intelligence and automated systems?

» How might education stakeholders develop strategies for using artificial intelligence in learning without sacrificing student and educator agency or deepening inequity?

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.

As the social safety net has frayed and as trust in government has waned, corporate influence has increased in areas of our lives that were once the exclusive purview of the public sector. Unsatisfied with the governance and solutions offered by any particular sector, engaged citizens and civic organizations are reasserting their power. They are using a range of technologies to develop more creative and empowering ways of raising awareness, mobilizing action and building relationships.

Citizens, nonprofits and volunteer organizations are increasingly working to expand their access to, and become more sophisticated in their uses of, participatory media, data analytics, artificial intelligence and mobile technologies. Their goals include expanding channels of citizen voice and influence, creating more transparency in the public and private sectors and widening participation in local and regional decision-making processes.

Already, citizens can leverage software bots to automate massive waves of constituent communication to elected representatives. For example, the free ResistBot service turns text messages into letters that are faxed to elected officials. Similarly, the Latinx community recently partnered with Magnify Progress, a social action application provider that uses automated web searching and machine intelligence to create personal action dashboards for individuals. These dashboards unpack complex ballot information, aggregate the voting records of local officials and recommend actions to create impact. In addition, the New York City Police Department is piloting Elucd, a mobile polling application that helps build trust with residents by rapidly capturing their feedback about law enforcement strategies and by giving residents an opportunity to report on police behavior in their communities.

Such tools have the power to supercharge the influence of the civic sector. Yet failure to develop inclusive civic ecosystems comprised of diverse organizations and populations will maintain an imbalance of power and an opening for the corporate sector to continue to shape conversations and solutions.

KEY QUESTIONS

» Who will create the guidelines necessary to ensure responsible use of, and equitable access to, civic engagement technologies?

» How might tech-enabled civic engagement reshape educational governance and decision-making?

ACCELERATING BRAINS

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

Technology developers and neuroscientists are working together to translate our expanding knowledge of the brain into accessible tools for augmenting its performance. Consumer entertainment technologies such as video games, wearables, virtual reality and augmented reality are being used to create opportunities to leverage brain plasticity and enhance cognition. For example, firms such as Akili Interactive are using these technologies to create therapeutic, interactive social environments that treat brain-based conditions, including anxiety, depression and post-traumatic stress disorder.

Similarly, neuro-stimulation wearables are transforming approaches to training and practice. Among them, Halo Sport stimulates the motor cortex to make sports training and practice more efficient. Other kinds of neuro-stimulation products such as Xana use electrical pulses to stimulate nerves in order to relieve stress, improve sleep and enhance attention and focus. Affordable consumer neuro-stimulation kits, such as those sold by Caputron, are also emerging, spawning a community of do-it-yourself brain hackers who are contributing to the expansion of access to cognitive enhancement.

Even as these approaches to intentional brain modification are growing, so too are practices that unintentionally change brain function and performance. The ubiquitous presence of digital tools and media is creating an environment filled with distracting alerts, notifications and automated nudges that shape users' behavior in both desired and accidental ways. For example, repeated use of Google Search has been shown to stimulate the use of short- over long-term memory in ways that may undermine critical thinking. As we learn more about how the brain works, immerse ourselves in smart environments and partner with digital tools to offload cognitive functions, we will continue to reshape our brains in intended and unintended ways. Learning how to anticipate and evaluate personal brain upgrades will lead people to redefine our notions of brain health, our ability to shape it and our sense of self.

KEY QUESTIONS

» What might be the ethical and long-term health implications of using neural enhancement technologies?

» How might learners retain their rights in deciding when and how to use new cognitive tools while also navigating new expectations of performance in education?

TOXIC NARRATIVES

The narratives and 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.

Current metrics of success in education, business and media often treat people as assets to be optimized and as data to be commoditized. As such, these sectors' economic models and underlying organizational assumptions are contributing to chronic health conditions, including hypertension, diabetes, fatigue, anxiety and depression.

Adults are struggling to adapt to demanding work schedules and to the uncertainties of a transitioning economy characterized by growing job insecurity and by more and more gig, task and project-based work. The mental health of teens and young adults is declining as they face wide-ranging pressures, including high-stakes testing, grueling college admission processes and student debt that may not lead to employment. Amid such challenges, people are inundated by fake news and harmful echo chambers as media companies measure success in monetized numbers of clicks rather than through authentic public discourse.

Given these stressors, people are susceptible to losing the positive social connections and in-person relationships that could provide buffers in times of transition and uncertainty. If left unchecked, current narratives and metrics of success will exacerbate an epidemic of social pollution that will have profound impacts on public health and economic productivity. Such effects may be felt more acutely by people of color, women and low-income individuals, as they are already experiencing structural inequities.

To counter that possibility, efforts to measure success in ways that emphasize connections and relationships will be instrumental in healing an increasingly sick population. The Vitality Institute works across sectors to develop better corporate reporting measures reflecting the health of workers. A growing number of colleges and universities are implementing test-optional admissions policies to reduce stress and increase equity, while the Mastery Transcript Consortium is developing a holistic alternative model for high school assessment, crediting and transcript generation.

For new metrics to be successful in creating well-being at a systemic level and not simply to reinforce entrenched inequities, persistent challenges such as racism, sexism and economic inequality will need to be addressed.

KEY QUESTIONS

» How might stakeholders from education, communities and businesses collaborate to create new definitions of success that ensure good health across diverse populations?

» How might educational accountability expand to support a broader perspective on learner development and well-being?

REMAKING GEOGRAPHIES

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

Demographic shifts, industry transformations and climate volatility are causing more and more people to migrate in search of stable opportunities and livable communities. Many places are experiencing population changes as their residents make relocation decisions or are forced to move based on housing costs; job availability; tax rates; public services; personal values; or climate disruptions caused by flooding, fire and extreme weather.

As circumstances shift, many cities, towns and rural communities are exploring strategies to reinvent a unique sense of place and to translate it into sustainable platforms for community viability, health and wealth. They are also looking for ways to attract or retain residents by providing financial incentives and creating welcoming environments. Though many communities are pursuing traditional economic and community development approaches, those efforts do not always lead to long-term revitalization and often deepen inequity and marginalization. In response, some communities are seeking to grow in more sustainable and inclusive ways.

For example, the National Main Street Center and the Project for Public Spaces are partnering to support diverse placemaking efforts that integrate an appreciation for towns' and communities' deep historical and cultural heritage alongside modern creative production networks, with a focus on inclusion and collaboration. In addition, Reimagining the Civic Commons is working in five U.S. cities to revitalize and connect civic assets, with the goal of increasing civic engagement, socioeconomic mixing, environmental sustainability and value creation.

In the future, communities working to remake themselves will be able to tap into diversifying economic models and small-scale production networks. They will have the opportunity to engage both their traditional and diversifying workforces in new ways; to integrate traditionally siloed industries such as transportation, health and entertainment; and to connect with other communities to form relatively flexible regional economies that provide greater resilience to residents and increase opportunities for personal and professional growth. Ongoing, inclusive dialogue and decision-making will be necessary to avoid further marginalizing vulnerable residents, who are often left out of plans for economic development and community revitalization.

KEY QUESTIONS

» How might new ways of creating economic value in communities and regions change what it means to be ready for work?

» How might education play a leadership role in helping cities, towns and rural communities find new signature identities?

PROVOCATIONS
FOR THE FUTURE OF LEARNING

As the drivers of change unfold and combine over the next decade, they will present opportunities to imagine new kinds of educational practices, programs, structures and roles that respond to the changing landscape.

The provocations on the next few pages describe future possibilities for supporting the healthy development of young people, enabling effective lifelong learning and contributing to community vitality. They cluster into four themes. Within each theme, four provocations illustrate specific future possibilities. Many others could also emerge.

FUTURE POSSIBILITIES:
SIGNATURE LEARNING ECOSYSTEMS

Situate learning in place in ways that integrate technology, culture and learner and community identity to enhance and extend opportunities for learning.

COMMUNITY NETWORK BUILDER

Community network builders foster multi-stakeholder partnerships and cross-cultural understanding by drawing on their community knowledge and by using social media, data analytics, predictive modeling and other smart tools to map and model community networks, shared interests and goals and potential collaborations.

NESTED LEARNING

Diverse community organizations — including museums, parks, zoos, art and science centers and businesses — host clusters of students, facilitating place-based learning experiences that are rich with feedback-driven assessment and reflection and that provide the opportunity for students to develop social learning networks comprised of community members, mentors, peers and trusted adults.

EDUCATIONAL PLACEMAKING

Designers specializing in place-based learning help revitalize and energize communities by working alongside educators, local municipalities, residents and regional governing bodies to address community issues and to support community identity. They curate resources and catalyze the development of long-term learning projects, helping to coordinate among the partners involved in carrying them out.

MIXED-REALITY LEARNING PARKS

Intentionally designed learning theme parks extend the range of experiences publicly available to regional learners by merging physical infrastructure with augmented and virtual reality. They create embodied, immersive and highly contextualized learning experiences that include real-time learner feedback along with systematic processes for observation by educators and for student reflection.

FUTURE POSSIBILITIES:
HUMAN-CENTERED LEARNING

Reorient teaching and learning systems, expectations and experiences to put a holistic view of human development at the center.

DESIGNING FOR THE CORE

Educational design principles for crafting learning cultures, experiences, assessments and physical environments guide educators in supporting learners' healthy development and in meeting core needs such as secure attachment, creative expression, self-discovery, social belonging and meaningful purpose.

FULL-SPECTRUM ASSESSMENT

Standards and assessments expand beyond a quantification of academic performance to reflect a broader range of human development. Formative assessments support students in developing their full intellectual, emotional, social, physical, creative and civic potential and in building the foundation for lifelong learning. The more comprehensive approach bolsters stakeholders' belief in, and support for, education institutions.

COGNITIVE FITNESS PROTOCOLS

Educators support learners' neurological health and cognitive performance through a scope and sequence of diagnostic and therapeutic activities and vetted tools that facilitate developmentally appropriate cognitive health and address the neurological impacts of factors such as of trauma.

NEUROLEARNING INTEGRATOR

Specialists work with other educators to integrate insights from neuroscience, learning science and cognitive technologies into learning experiences that support brain health, enhance cognitive function and improve learner wellness. They also help evaluate the quality and relevance of emerging tools and practices for specific educational contexts.

FUTURE POSSIBILITIES:
SAFEGUARDS FOR EFFICACY

Provide vision and stewardship for implementing effective data strategies and for embracing emerging technologies for intentional learner support.

FOLLOW-ME SCHOOLS

Students experiencing educational disruption due to family instability, mobility challenges, homelessness or climate dislocation achieve learning continuity through flexible, self-organizing schools comprised of place-based learning opportunities, mentor and coach networks and digital resources. These schools use smart contracts, learner resource accounts, and searchable and customizable repositories of vetted educational options to configure themselves around students wherever they are.

DATA ASSET ADVISOR

As students gain the rights to own their own data, data asset advisors help students and their families manage, present and exchange data related to students' learning, locations and device and platform usage. In addition, these trusted data stewards have fiduciary responsibility to safeguard the integrity of educational data systems by collaborating on security and defense mechanisms to prevent unauthorized third-party data collection.

AI ETHICS COOPERATIVES

Diverse groups of education stakeholders, community members and artificial intelligence and data experts work together to establish robust ethical frameworks and standards governing the uses of artificial intelligence and machine learning applications in education. These groups also develop and pursue anti-bias strategies.

MACHINE LEARNING AUDITS

K-12 schools, postsecondary institutions and other learning organizations regularly undergo systemic technology audits by trusted professionals. These audits examine uses of machine learning to determine whether the algorithms driving decisions and experiences are interpretable, are based on unbiased data and reflect fair assumptions about specific local communities.

FUTURE POSSIBILITIES:
AMPLIFIED VOICE AND IMPACT

Reconfigure engagement and outcome frameworks and communications channels to bolster individual capacity and to increase community impact.

EDUCATION SOCIAL IMPACT SCORECARDS

Communities develop cross-sector, locally relevant, social impact metrics and scorecards that assess education organizations' impact on reducing social pollution, improving mental health and stimulating positive economic and cultural conditions.

MACHINE LEARNING OPEN EDUCATIONAL RESOURCES

Open educational resource communities engage educators in using straightforward tools to develop, share, rate and modify machine learning algorithms that address their unique teaching and learning needs. The communities emphasize machine learning applications created by educators, for educators.

AI EDUCATOR SUPPORT BOT

Personal digital partners for educators help them vet curricular resources, manage classroom and student data and coordinate with other educators. The support bots also augment educator-directed professional development by making recommendations and by providing access to just-in-time training.

AMPLIFIED STUDENT GOVERNMENT

Empowered learners transform the role of student government by exercising their civic voice and influence. They leverage digital tools to create community coalitions beyond school that monitor governing bodies, work to influence political candidates and shape policy issues that impact their lives.

If we used these provocations to spark new thinking about teaching and learning, what might be possible for education — and for all learners?

SIGNALS OF CHANGE

The following present-day programs, practices and initiatives show glimpses of what future education landscapes could look like. These signals of change illustrate how some of the future possibilities described in the provocations are beginning to play out today.

SIGNATURE LEARNING ECOSYSTEMS

CÍRCULOS

This high school, which has no fixed location and is part of the Santa Ana Unified School District, groups students in tight-knit learning circles comprised of peers, teachers and community members and embeds them in co-working spaces, mobile labs and the offices of partner organizations.

comejoinourcircle.org

DUBAI'S MIXED-REALITY THEME PARK

Combined virtual experiences and physical thrills blur the lines between perception and reality in this recreational park in a shopping mall that creates novel, immersive environments.

www.vrparkdubai.com/

GIVE AND TAKE PROJECT

This project from Real World Scholars supports students in partnering with local businesses and community organizations to build meaningful relationships and to "add their brilliance to the collective genius helping communities thrive."

www.realworldscholars.org/our-programs/

I PROMISE SCHOOL

The LeBron James Family Foundation and Akron Public Schools are pioneering a complete community wraparound service model of schooling for K-8 students that will focus on whole child development, rigorous inquiry-based academics, social emotional supports, trauma-informed practices and basic supports for students' families.

www.lebronjamesfamilyfoundation.org/page/ipromiseschool

PLACE NETWORK

This initiative of Teton Science Schools works with rural K-12 schools in Idaho and Wyoming, connecting learning and communities to increase student engagement, academic outcomes and community impact. Its learning model puts both the learner and the local place at the center of a rich competency-based, whole-child educational experience that leverages the distinctiveness of each community.

www.tetonscience.org

HUMAN-CENTERED LEARNING

FAIRTEST

The National Center for Fair and Open Testing works to end the misuses and flaws of standardized testing and to ensure that the evaluation of students, teachers and schools is fair, open, valid and educationally beneficial. It also publishes a list of "test optional" colleges and universities.

www.fairtest.org/university/optional

HOMIES EMPOWERMENT SCHOOL

This afterschool empowerment program for youth who have been involved in gangs is becoming a school that reframes students' hardships in a positive light and that helps youth harness their unique power and potential by prioritizing culture as healing, independence, attention to students' full range of needs, careers as purpose, self-expression in the arts and mind-body connections.

www.homiesempowerment.co

MAKING CARING COMMON PROJECT

Harvard University's Graduate School of Education aims to change schools' and families' conversations about healthy definitions of success and to create ways of infusing kindness, concern for others and the common good as core components of the educational process, including college admissions.

mcc.gse.harvard.edu

THE SCIENCE OF LEARNING AND DEVELOPMENT

In order to accelerate healthy development and academic success, the nonprofit Turnaround for Children, along with partner organizations, created a "Building Blocks for Learning" framework that translates neuroscientific research into tools and strategies for schools serving students impacted by adversity.

www.turnaroundusa.org

SAFEGUARDS FOR EFFICACY

DATA STEWARDS

This GovLab project facilitates collaboration across private-sector organizations, public agencies and researchers to promote responsible data leadership and analytical expertise in service of the public good.

datastewards.net

NEW LAWS FOR DATA PROTECTION

California's AB 375 law puts in place a variety of powerful protections against consumers' having their data collected and sold without their knowledge, while the European Union's General Data Protection Regulation aims to give citizens more control over their data.

www.focusonthedata.com/2018/06/california-privacy-new-normal-ca-ab-375-signed-law

www.zdnet.com/article/gdpr-an-executive-guide-to-what-you-need-to-know

THE RIGHT TO DISCONNECT

Countries such as France and Germany have been introducing anti-stress laws to protect employees from the damaging health impacts of 24/7 connectivity.

newatlas.com/right-to-disconnect-after-hours-work-emails/55879

SOCOS LAB

Research by theoretical neuroscientist and entrepreneur Vivienne Ming describes the financial and social inequities resulting from racial and gender bias in recruiting and hiring processes and suggests how to use artificial intelligence to develop smart talent acquisition tools that can prevent bias.

www.hrmagazine.co.uk/article-details/the-hidden-tax-on-being-different

AMPLIFIED VOICE AND IMPACT

AI4ALL
This nonprofit is dedicated to cultivating a diverse group of future artificial intelligence leaders and to promoting a humanistic view of the artificial intelligence field through summer education programs in artificial intelligence and computer science for under-represented high school students.

ai-4-all.org

OPEN SOURCE AI
A range of artificial intelligence developer tools for building and sharing open source machine learning applications is currently available, enabling educators to create meaningful solutions to their own teaching needs.

opensource.com/article/18/5/top-8-open-source-ai-technologies-machine-learning

#NEVERAGAIN MOVEMENT
This growing movement of students aims to end gun violence in communities.

blogs.edweek.org/edweek/rulesforengagement/2018/05/student_activists_gun_violence.html

REINVENTING COMMUNITY SCORECARDS
Some groups have begun to explore new ways of measuring community impact. Among them, Harvard's Transparency for Development Study explored whether a community-led transparency and accountability program could improve health outcomes and community empowerment, and Metrics for Healthy Communities helps evaluate cross-sector efforts to improve community health.

ash.harvard.edu/files/ash/files/citizen_voices_community_solutions.pdf

metricsforhealthycommunities.org

Additional resources relating to the content of this forecast are available from **KnowledgeWorks.org/Forecast5**.

RESPONDING TO THE CHANGING LANDSCAPE

Transformational shifts in education are possible, and the drivers of change identified in this forecast could enable them. However, a bright future of learning is not a given. The changes on the horizon present as many challenges to navigate as they do opportunities to seize.

As the emerging era ushers in ever-greater complexity, education stakeholders will need to take action with those future challenges and opportunities in mind. To begin responding to the changing landscape in ways that will support the healthy development of young people, enable effective lifelong learning and contribute to community vitality over the coming decade and beyond, critical education institutions and influencers will need to address the areas below. For each area, strategic actions suggest possible starting points.

DESIGN FOR EQUITY

New educational practices, programs, structures and roles can go a long way toward dismantling the inequitable systems that have traditionally marginalized some students and communities based on race, gender, income or ability. However, education stakeholders cannot assume that equity will automatically be a byproduct of adopting new approaches; institutional and cultural barriers are too strong. Instead, equity must be an explicit aim and a core design principle of all efforts and reforms. It will often require strategies that focus on specific populations and on individual students' needs, along with frank and inclusive conversations about how and why inequities in learning persist.

STRATEGIC ACTIONS:

» Reflect on current approaches to equity and to closing achievement gaps, engaging members of your learning community or organization in inclusive conversations about how they define equity, how it manifests in diverse issues, where efforts to address equity have fallen short, how equity might be prioritized and what aspects of education need to evolve.

» Evaluate how decisions about learning and organizational climate are made, who is involved in those processes and whose vision for the community is prioritized.

PRIORITIZE HUMAN DEVELOPMENT

Educators will have new opportunities to implement humane and student-centered approaches to learning. Those opportunities will be fueled by emerging tools and practices that can support relationship-driven interactions, as well as by new insights into mind-body connections and by new research on the impact of trauma and other external pressures on learning. As emerging technologies and workforce needs continue to influence many conversations about the future of learning, stakeholders will need to keep learners' fundamental human needs at the center of their decisions.

STRATEGIC ACTIONS:

» Consider how to integrate more social-emotional skill development and stronger cultivation of trusted learner-educator relationships within new and existing learning experiences, especially those that are oriented toward academic achievement and career development. Re-imagine teacher preparation and ongoing professional development to put human development and social-emotional skills at the center.

» Alongside your community's or organization's stakeholders, consider the longer-term outcomes that you would like learners to achieve beyond test scores, college admission or job placement. Then assess your offerings, approaches and professional development with those outcomes in mind.

DISTINGUISH BETWEEN EFFICIENCY AND TRANSFORMATION

Education already faces pressure to adjust rapidly and already operates in an environment where increased efficiency is often touted as system transformation. Those circumstances are likely to intensify. While many education systems and institutions would benefit from the increased flexibility that can result from greater efficiency, there is also a role for guides who understand that using new tools to make tasks easier does not necessarily improve student learning and that pursuing major changes often leads to unintended consequences. Sometimes increased efficiency will be an important aim, but it should not be confused with transformation.

STRATEGIC ACTIONS:

» When considering a new tool or approach, evaluate how the time or resources that would result from any gains in efficiency might be re-invested in students, educators, the community or the system in support of deeper transformation.

» Explore what transformation could mean for your learning community or organization, prioritizing the perspectives of students, parents, colleagues and other stakeholders. Then assess new initiatives and potential changes through the lens of that vision.

LEAD WITH INCLUSIVE GOVERNANCE

Education stakeholders will have powerful opportunities to promote student and community agency, to make decision-making processes more transparent and inclusive, to foster more meaningful and relevant learning and to recognize and form connections among the many people and places that support learning. However, current education governance models are often hierarchical and exclusive. Creating new systems, structures and talent pathways that empower educators and that prioritize the leadership of people of color and other traditionally marginalized groups will be a critical step.

STRATEGIC ACTIONS:

» Assess current governance structures and processes to determine how authentically learners, parents, community members and other nontraditional leaders are engaged in governance and what barriers to their involvement may exist.

» Adjust leadership development pipelines and pathways to ensure that current and future leaders represent the communities they serve.

PROTECT STUDENT DIGNITY AND COMMUNITY WELL-BEING

As educational authority becomes more distributed and as more avenues for influence open, individuals or groups that seek to oppress or marginalize others will have access to powerful tools to make their voices heard. Education stakeholders will need to collaborate to ensure that appropriate safeguards protect the dignity and well-being of all students and community members.

STRATEGIC ACTIONS:

» Collaborate with representatives of other education organizations to explore what guidelines or frameworks might help the field navigate and work with an increasingly engaged civic sector and build trust with previously marginalized or disengaged groups.

» Ensure that your educational organization maintains a welcoming environment for all learners and families, explicitly affirming your belief in their humanity and in their potential for learning and addressing disrespectful behavior and speech when it occurs.

DEVELOP NEW TERMS AND CONDITIONS FOR TECHNOLOGY USE

As technology continues to evolve, education stakeholders can take a leadership role in establishing new ethical frameworks and in shaping the design of new education technology tools. Key priorities include privacy protection, unbiased data systems, transparent algorithms, data ownership and usage protocols and equitable access to high-quality technology solutions that enable students to take ownership of their learning.

STRATEGIC ACTIONS:

» Evaluate the education technology currently being used in your learning community or sphere of influence, taking into account whether the tools are transparent, how they collect and use data and the degree to which they promote student agency and ownership of learning.

» Support learners' creation of a student bill of rights regarding ethical data collection and use and include learners as equal contributors to ongoing and inclusive discussions about how artificial intelligence, machine learning and other emerging technologies might be used responsibly in education.

IDENTIFY YOUR ORGANIZATION'S ROLE IN SOCIAL REGENERATION

Few individuals or institutions are better equipped to understand and respond to the needs of a community than its educators and learning organizations. With their many existing assets and relationships, education organizations can serve as critical leaders in efforts to define new narratives of success and to improve individual development, social cohesion and community well-being. While any organization's capacity is limited and while leading such efforts would represent a major expansion of education's social responsibility, identifying what role your organization and potential partners might play in regenerating the health and vibrancy of your local community can help guide your responses to the changing landscape.

STRATEGIC ACTIONS:

» Assess your community's most pressing needs as it transitions into the new era of partners in code. As you do so, consider where education organizations might leverage their existing assets and relationships to support learners, families and the broader community.

» Identify opportunities for education organizations to play new roles in meeting your community's needs or to broker relationships with other stakeholders involved in social regeneration. As you do so, examine existing and potential partnerships and consider what new roles and services might be needed from them.

SHAPING THE FUTURE OF LEARNING

The changes on the horizon offer a chance for education institutions, community organizations, students and families to put human fulfillment and people's mutual well-being at the center of learning. Redefining human agency and celebrating our creative potential will enable critical education institutions and influencers to navigate the uncertainties on the horizon in intentional ways, leading the way toward a bright future for everyone.

This forecast was created by Katherine Prince, Jason Swanson and Katie King of KnowledgeWorks and by Andrea Saveri of Saveri Consulting, with contributions from Kimberly Daniels and Anne Olson and review by additional colleagues. Todd Garvin created the design, and Kate Westrich managed the forecast's production and release.

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 system-wide approach to sustain student-centered practices so that every child graduates ready for what's next.

Learn more at **KnowledgeWorks.org.**

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