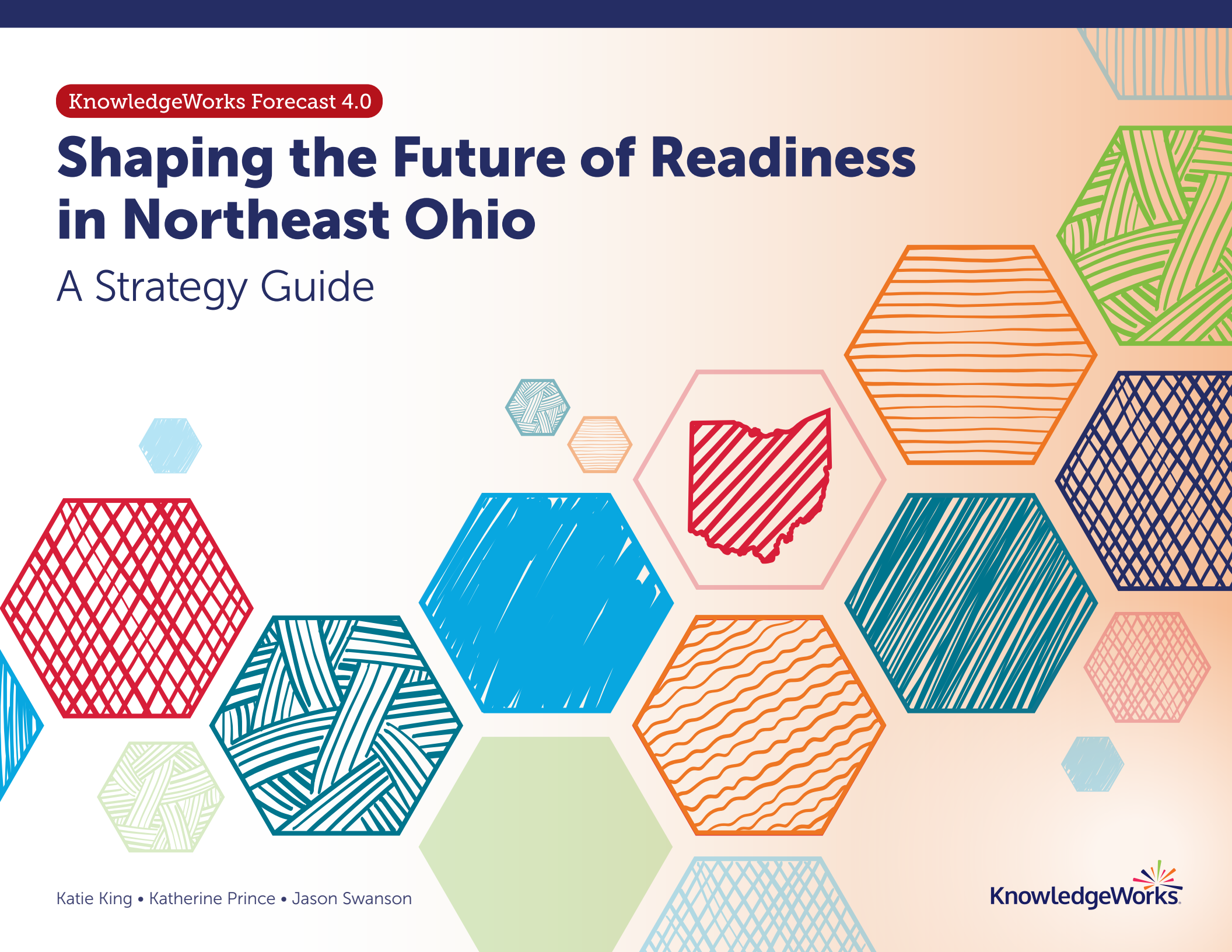
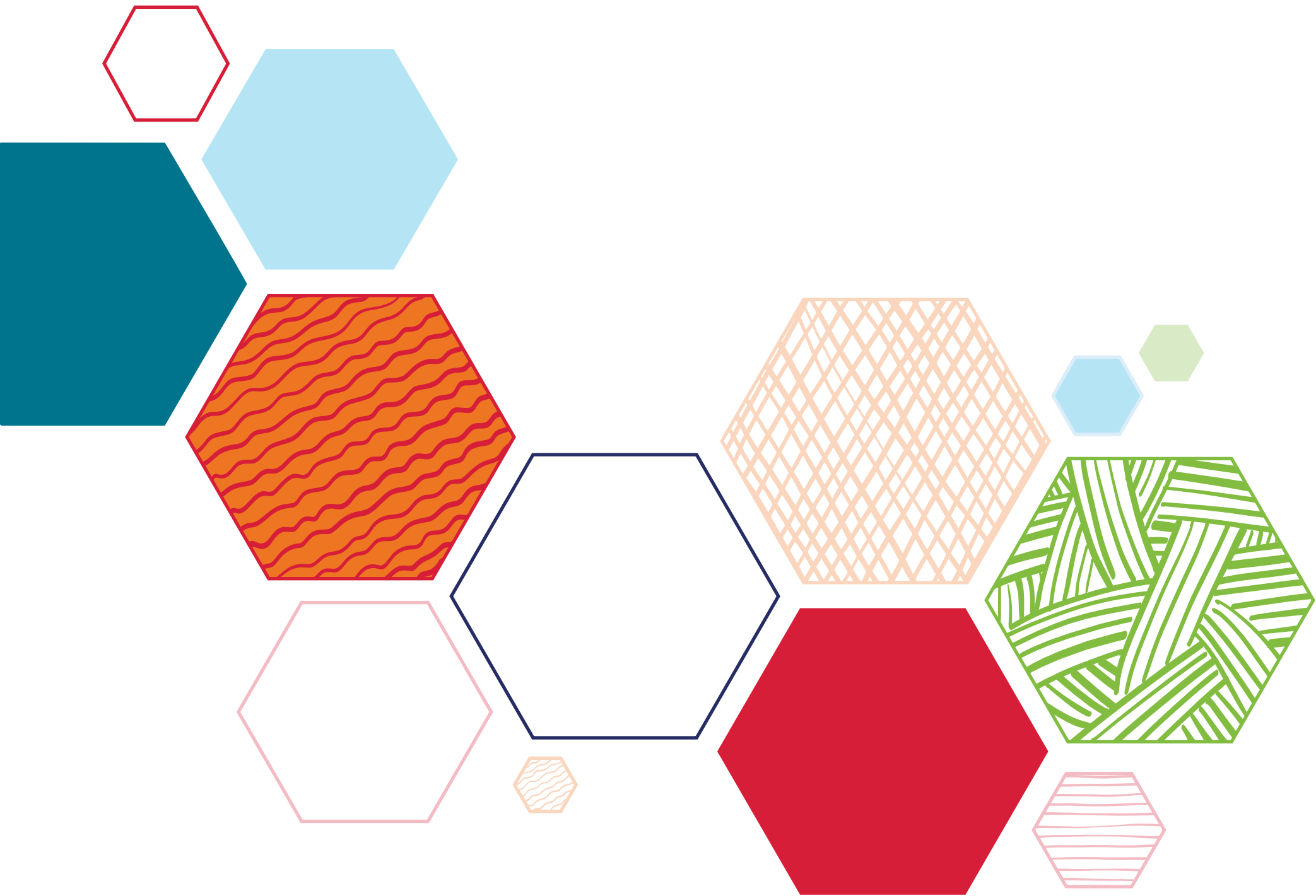


KnowledgeWorks Forecast 4.0

Shaping the Future of Readiness in Northeast Ohio

A Strategy Guide





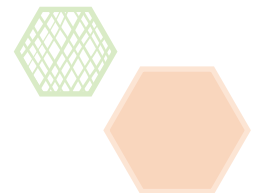
The Case for Redefining Readiness

The next decade represents a critical window of choice. As explored in KnowledgeWorks' forecast, *The Future of Learning: Education in the Era of Partners in Code*,¹ we are rapidly entering a new era in which our economy, our institutions and our societal structures – indeed, the very bedrock of our lives – are shifting at an accelerating pace. Exponential advances in digital technologies are combining with new social norms, organizational approaches and economic models to usher in a future that could look dramatically different from today's realities. By 2040, we could find ourselves living, working and learning in ways that can be hard to fathom today.

In particular, work is changing rapidly. KnowledgeWorks' deep dive into that topic, *The Future of Learning: Redefining Readiness from the Inside Out*,² highlights how the rise of smart machines is reshaping the role of people in the workplace and the decline of full-time employment is changing the role of work in our daily lives. These drivers of change could present both new opportunities and new challenges for organizations that seek to prepare people for further learning, work and life in an increasingly complex future.

Leaders and innovators in the K-12, postsecondary and employment sectors understand the urgency of ensuring that everyone is ready for college, career and life. In Northeast Ohio and beyond, a wide range of stakeholders are already pursuing many efforts to close gaps in academic achievement, educational attainment, skills and employment. Yet those gaps will not be closed if we view readiness only through today's lenses.

To prepare young people for the changing nature of work and help them thrive amid rapid change and significant uncertainty, we need to redefine readiness for the emerging era. A new foundation for readiness needs to include not only academic and job-related knowledge and skills, but also social-emotional development to help students be resilient, reflective and able to form positive connections and relationships. Redefining readiness for the emerging era begins with discussion and consideration about what it will mean for people to be ready for further learning, work, and life in the year 2040 and what opportunities exist today to begin ensuring that they are.





About This Strategy Guide

This strategy guide is the result of a convening of K-12, postsecondary and employment stakeholders across Northeast Ohio held on November 16, 2017. With support from the Martha Holden Jennings Foundation, KnowledgeWorks hosted this convening, along with two similar events held in Southwest and Southeast Ohio, to surface regional opportunities to redefine readiness for the emerging era.

This publication draws upon participants' insights to guide other education, employment and civic stakeholders in considering how they might shape the future of readiness. Their reflections and insights are quoted throughout. The insights and action steps are meant to spark ideas, conversation and first steps toward new approaches to learning that will help stakeholders in Northeast Ohio meet the needs of the next generation entering a new world of work. The opportunities highlighted here could also inspire action in other places.

As you read this strategy guide, look for:

? Prompts to help you apply the content to your own context.

QUOTES FROM CONVENING PARTICIPANTS THAT SHARE KEY INSIGHTS.

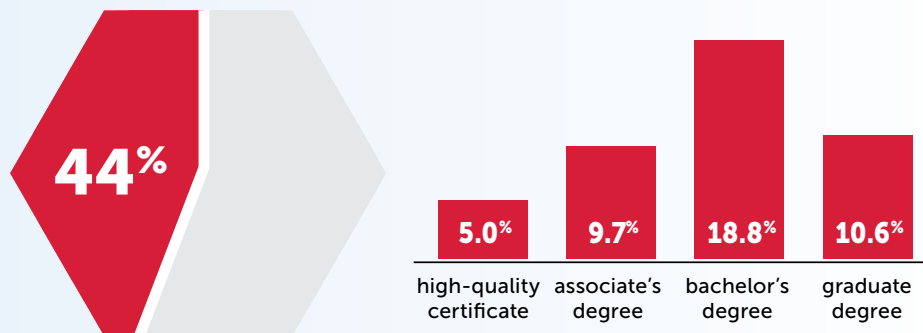
Download the full illustration created during the event. [OPEN](#)

Snapshot of Educational Attainment and Employment Landscape

This snapshot of statewide and regional educational attainment levels and employment landscapes provides a starting point for considering opportunities to shape the future of readiness, including reflecting on what other measures of readiness and economic vitality might need to emerge in the future.

EDUCATIONAL ATTAINMENT

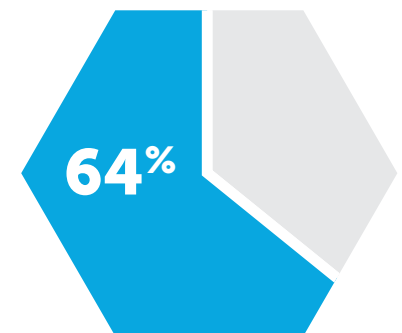
Ohio faces a credentials gap.



Roughly 44 percent of working-age Ohioans have some form of postsecondary credential (a percentage that has been increasing since 2008). 5.0 percent have a high-quality certificate, 9.7 percent have an associate's degree, 18.8 percent have a bachelor's degree, and 10.6 percent have a graduate or professional degree.³



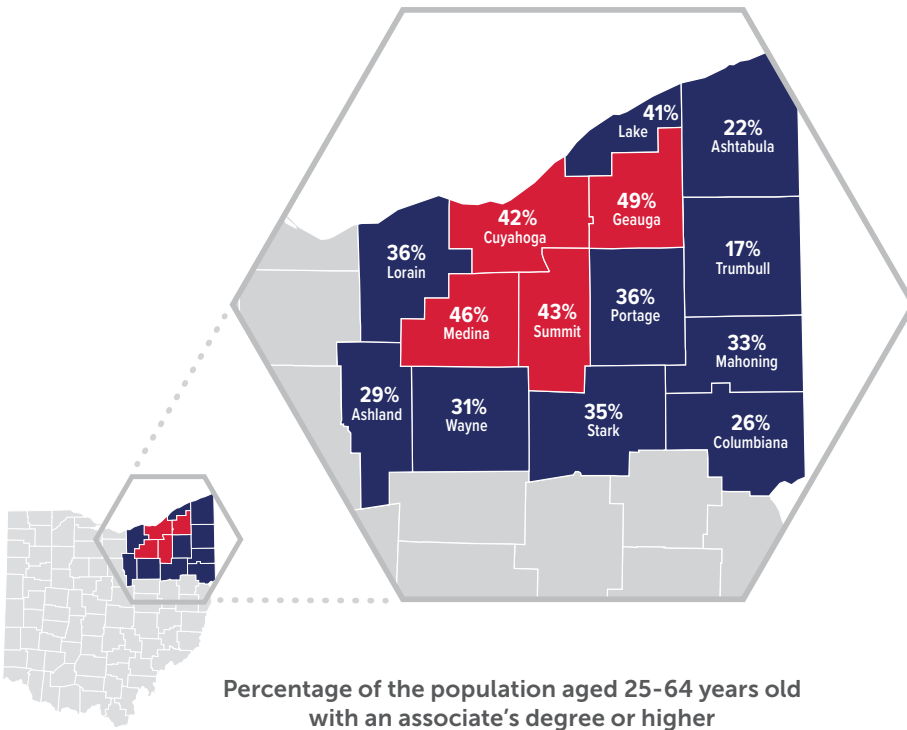
56 percent of today's "in-demand jobs" require a postsecondary credential.⁴



64 percent of jobs in Ohio are projected to require a postsecondary credential by 2020.⁵

Attainment of associate's or higher degrees in Northeast Ohio varies significantly by county.

42 percent of the U.S. population over the age of 25 has an associate's degree or higher.⁶ **Four** of the region's thirteen counties meet or exceed that level of attainment.⁷

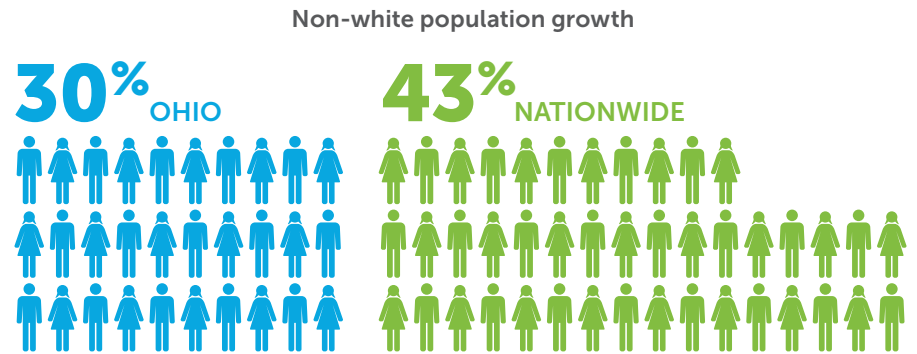


Percentage of the population aged 25-64 years old with an associate's degree or higher

"MANY OF THE PEOPLE MOST LIKELY TO BE ADVERSELY AFFECTED BY THESE TECHNOLOGICAL ADVANCES ARE NOT AWARE OF THEM AND THEIR POTENTIAL IMPACT."

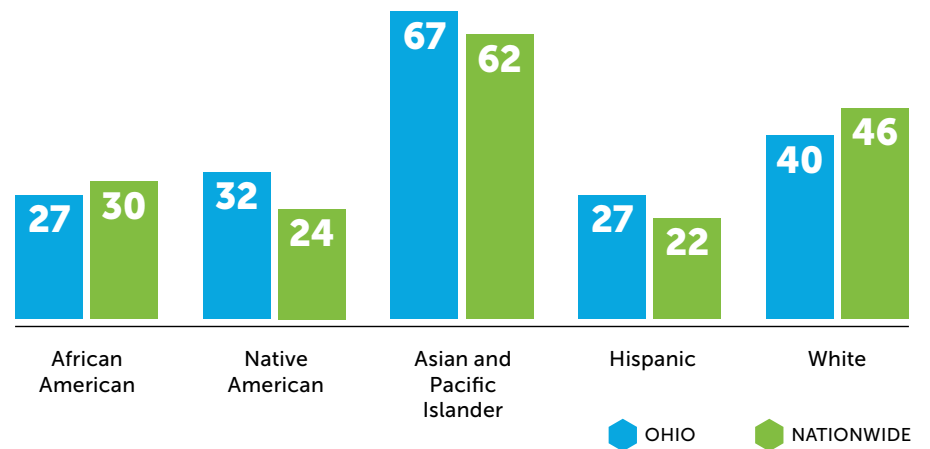
Ohio's and the nation's population are diversifying.

Since 2000, the non-white population increased 30 percent in Ohio and 43 percent nationwide.⁸

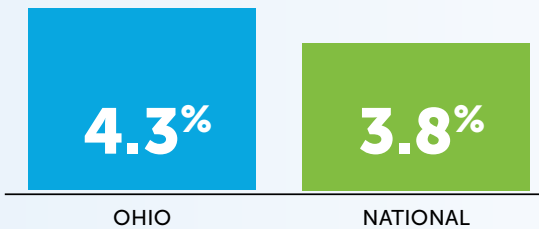


Meanwhile, educational attainment gaps persist.⁹

Percentage of people aged 25-64 with at least an associate's degree

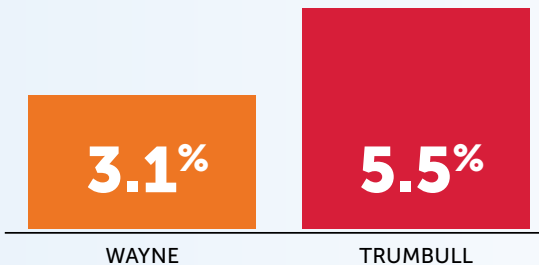


EMPLOYMENT LANDSCAPE



Though it has been declining, Ohio's unemployment rate remains slightly higher than the national average.

As of May 2018, Ohio's unemployment rate was 4.3 percent, compared to the national rate of 3.8 percent.¹⁰



Northeast Ohio's unemployment rate varies by county.

As of April 2018, it ranged from 3.1 percent in Wayne County to as high as 5.5 percent in Trumbull County.¹¹

39.3 Ohio's median age is slightly higher than the nation's.¹²

Three of Ohio's five top industries lost jobs between 2007 and 2017.¹³

Increase or decrease in jobs between 2007 and 2017

- Manufacturing
- Transportation and Trade
- Professional and Business Services
- Government
- Education and Health Services

Four of Northeast Ohio's top five industries are expected to add jobs through 2024.¹⁵

Projected increase or decrease in jobs in Northeast Ohio between 2014 and 2024

- Education and Health Services
- Transportation and Trade
- Manufacturing
- Professional and Business Services
- Leisure and Hospitality

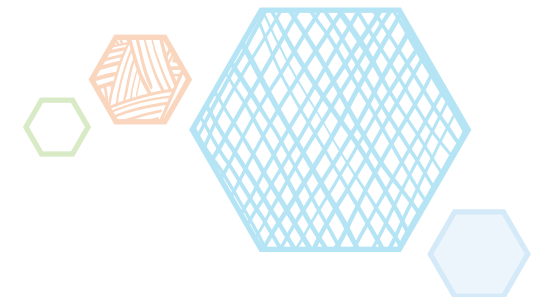
Though **manufacturing employment** is expected to decline in the region and nationwide, certain occupations — namely those associated with maintaining, repairing, troubleshooting, and programming increasingly complex machines — will be in demand, and additional job openings could result from the retirement of older workers.¹⁶



What do these statistics reveal about what young people might need in order to be ready in the future?

What other data points would be helpful for stakeholders to consider?

"BUSINESSES ARE MOBILIZING AND ANXIOUS FOR EDUCATION TO RALLY AROUND THEIR NEEDS."



Most employment and educational attainment projections assume that the economy and approaches to readiness will stay fundamentally the same in the future. However, **additional statistics** invite new lines of inquiry into how the economy might shift and what people might need in order to thrive in a new employment landscape.

Smart machines are on the rise. Ohio already has a high incidence of industrial robots.

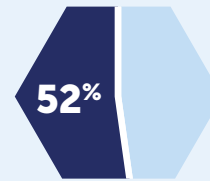
9%

At 9 percent, Ohio has the nation's second-highest percentage of industrial robots.¹⁷

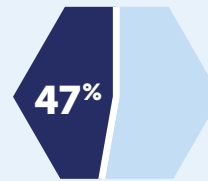


Among the 100 largest cities in the United States, Youngstown, Cleveland and Akron rank 6th, 16th and 20th, respectively, in the number of industrial robots per 1,000 workers.¹⁸

Expert opinion about the future impacts of workplace automation is divided.



In a Pew poll of technology experts, 52 percent of respondents asserted that technology will create more jobs than it will displace by 2025.²¹



However, a University of Oxford study suggested that 47 percent of current U.S. middle-class jobs are at risk due to automation by 2033.²²

More and more jobs are requiring increasing levels of digital skills.

26% ↑

From 2002 to 2016, the share of jobs requiring medium or high levels of digital skills rose by 26 percent.¹⁹

Projections indicate that jobs requiring low levels of digital skills are most likely to be automated.²⁰

Full-time employment for a single organization is declining.

54-68^M

54 million to 68 million people in the United States are already estimated to work in the project-based economy,²³ and some projections estimate that the contingent workforce will exceed 40 percent by 2020.²⁴

5.7% ↑

Northeast Ohio is projected to experience a 5.7 percent increase in the number of self-employed workers and unpaid family workers by 2024.²⁵

Possible Futures of Work for Northeast Ohio

The future is uncertain, and many possibilities could emerge. Thinking through a range of scenarios can challenge our assumptions in useful ways and surface opportunities in need of attention.

KnowledgeWorks' paper, *The Future of Learning: Redefining Readiness from the Inside Out*,²⁶ developed scenarios for work and readiness in the year 2040 by exploring two critical uncertainties about how the rise of smart machines and the decline of full-time employment could play out in the future:

- Will there be high or low technological displacement of workers?
- Will the societal response be systemic and intentional or market driven?

The four scenarios at the intersections of these uncertainties are summarized on the next page.

Beyond these scenarios and the drivers of change that they reflect, other regional trends and potential events could influence the future of work and readiness in Northeast Ohio. In considering such developments, convening participants envisioned a range of future scenarios:

- What if Northeast Ohio built new social infrastructure that sustainably supported independent contractors in navigating a new "free-agent economy," similar to the ways in which pensions, unions and Social Security transformed support for workers in the 20th century?

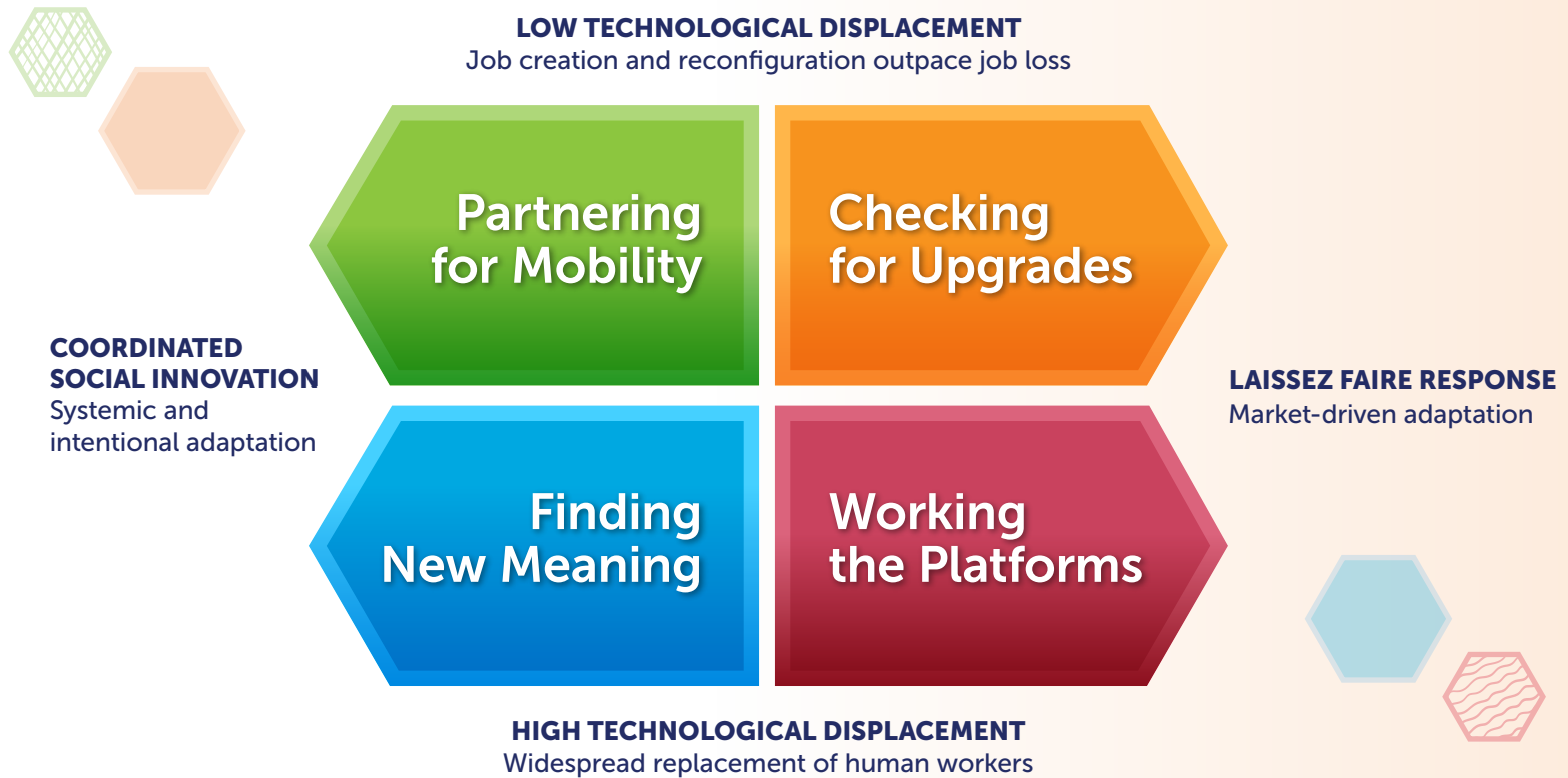
- What if the Northeast Ohio communities facing economic, health and educational challenges were entrusted to lead change in their communities and were empowered with the resources to bring it about?
- What if basic services such as health care were available through apps and kiosks, removing health and wellness barriers to educational and economic opportunity?
- What if learning were integrated throughout a community, with trusted adults in schools, workplaces and community spaces supporting students' academic and social-emotional learning?

**"THESE AREN'T INDIVIDUAL ISSUES.
THEY ARE STRUCTURAL ISSUES."**



What changes can you envision, and what other futures of work might those changes cause?

What might be the implications of any of these possibilities for Northeast Ohio, its economy and residents' future readiness?



Partnering for Mobility: Individuals partner with machines to carry out project-based work, developing mosaic careers. Employers, communities and governments partner with one another to anticipate workforce needs and design adaptive career pathways and other supports that help workers as they keep pace with rapid reskilling and upskilling.

Checking for Upgrades: People shoulder the responsibility of navigating a highly fluid landscape of independent, contingent employment, using digital assistants and continually looking for ways to build connections and upgrade their skills. “Always-on” workers blur the lines between work, learning, play and social life as they strive to stay relevant to organizations’ needs.

Finding New Meaning: Though machines now do much of the work previously done by human workers, paid work is just one of many ways to earn a living and contribute to society, thanks to a new social support infrastructure that fuels a human-centered economy. Career planning has become life planning, with education shifting its focus toward personal growth.

Working the Platforms: In an extremely competitive and fragmented employment landscape, most workers access tasks through digital dispatching platforms, managing their reputations to make successful matches. Individuals are responsible for developing their own strategies to find enough work and persist through challenges.

Future-Ready Knowledge and Skills

Considering the knowledge, skills and dispositions that people will need to thrive in 2040 can clarify what the aims of the region’s readiness efforts could be and how current approaches to, and measures of, readiness might need to shift.

Even as employment structures are changing, smart machines are becoming increasingly capable of performing tasks that people carry out today — including many tasks associated with professional and knowledge-based work. To thrive in the emerging employment landscape, people will need to focus on developing our uniquely human attributes and on developing flexible skills that we can apply across settings. The new foundation for readiness²⁷ shown right describes future work characteristics, along with skills and practices that promise to help people adapt to changing circumstances.

A New Foundation for Readiness



“WE NEED TO EMBRACE AND CULTIVATE OUR HUMANITY AT THE SAME TIME THAT WE’RE EMBRACING MACHINES.”

Convening participants worked with the new foundation for readiness, identifying which elements, along with additional knowledge, skills and dispositions, seem most important to the Northeast Ohio economy in 2040. Those readiness factors included:

- **Finding resources to solve problems:** As the range of learning and employment pathways diversifies, people will need to know when and how to find support.
- **Reflective leadership:** As the pace of change accelerates, people will need to have the skills and space to reflect on and adjust their approaches.
- **Time and project management:** As work becomes more fluid and open, people will need to manage their time and projects more carefully, balancing discipline with flexibility.
- **Sense of responsibility to the broader community:** As work and learning landscapes become more complex and interconnected, people will need to understand their place as a part of a whole and see how their actions affect others.

“WHEN CONSIDERING COMPETENCIES THAT EMPLOYERS WANT, ASSUME SOMEONE HAS DONE THAT WORK LOCALLY. EDUCATORS NEED TO TALK TO EACH OTHER BEFORE GOING BACK TO BUSINESSES TO ASK WHAT THEY WANT AND NEED AGAIN.”



What other knowledge, skills and dispositions might enable all young people to thrive no matter what future of work emerges?

How might K-12, postsecondary and employment organizations and institutions support the development of such knowledge, skills and dispositions?

In contrast, what knowledge, skills and dispositions might be replaced or downplayed to make room for future-ready preparation?

What new measures of readiness might need to emerge?



Opportunities to Shape the Future of Readiness

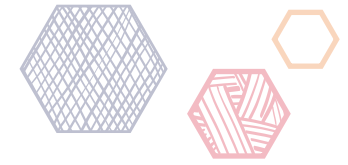
While redefining readiness can seem like a daunting and far-reaching endeavor, education and employment stakeholders can begin that work today. Identifying key opportunities and challenges can help stakeholders critically and creatively examine, revise or reinforce their current efforts and plans and identify promising new approaches.

In exploring future opportunities and challenges, convening participants identified potential change efforts that could position Northeast Ohio and its young people to thrive in the future. Their ideas targeted:

- How **people** could be empowered to bring about change,
- How **structures** could be reorganized to align with future needs, and
- How **society** could be encouraged to rethink approaches to readiness.

“DATA IS USEFUL, BUT EMOTION IS WHAT COMPELS ACTION.”





People: Build Capacity for Navigating New Relationships and Experiences

Given the changes on the horizon, both young people and working adults are likely to need to spend more time navigating a wider range of opportunities for learning and employment than they currently do. Similarly, educators and employers are likely to need to spend more time supporting their students and employees in connecting with and pursuing the right experiences. Today, readiness stakeholders can cultivate these competencies and support agency and choice by beginning to rethink how they are using their time and to what ends, viewing the coming years as a time of transition toward a more fluid world of work.

Action Ideas

- ✓ In workplaces, incorporate mentorship or other learning-support responsibilities into job descriptions at every level and prioritize the pursuit of, and support for, ongoing learning and professional development.
- ✓ Give K-12 students space in their schedules to discover, navigate and select among a range of opportunities and options — and work with local- and state-level decisionmakers to ensure that policies allow students to earn credit when pursuing those options.
- ✓ At postsecondary institutions, involve more stakeholders — including students, employers and community leaders — in determining schedules and offerings, collectively identifying opportunities for students to participate in work- and community-based learning that aligns with their classroom experiences.
- ✓ Provide competency-based educational opportunities at both the K-12 and higher-education levels so that students can pull from real-world learning experiences to show that they have mastered desired skills.



Structures: Promote Collaborative Governance and Resource Sharing

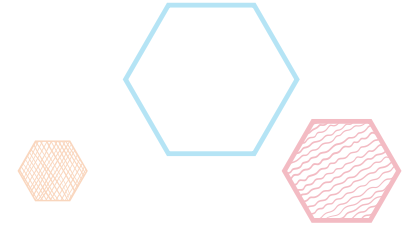
A community's resources can be used most effectively when its governance processes involve a diverse set of stakeholders and when it promotes partnerships that allow for resource sharing. Given the importance of readiness to all stakeholders, intentionally seeking a range of perspectives in decision-making processes can help ensure that redefining readiness is the collaborative and cross-sector effort that it should be. In addition, effectively utilizing all existing community assets — and being willing to work across traditional boundaries to address inequities — can help the region strengthen its supports for residents' future readiness.

Action Ideas

- ✓ Explore existing models of more collaborative and inclusive governance structures, such as participatory budgeting or similar processes that intentionally and explicitly involve representatives from a range of ZIP codes and prioritize the involvement of traditionally marginalized communities.
- ✓ Reach stakeholders who have not been involved in decision-making by using familiar and accessible communication channels, such as social media and partnerships with community organizations.
- ✓ Evaluate possibilities for sharing resources, spaces and services across neighborhoods in ways that build and maintain communities' identities, reduce inequities and demonstrate the benefits of new partnerships and collaborations.

**"I AM INSPIRED AND MOTIVATED BY
THE CHALLENGES UNCOVERED TODAY!"**



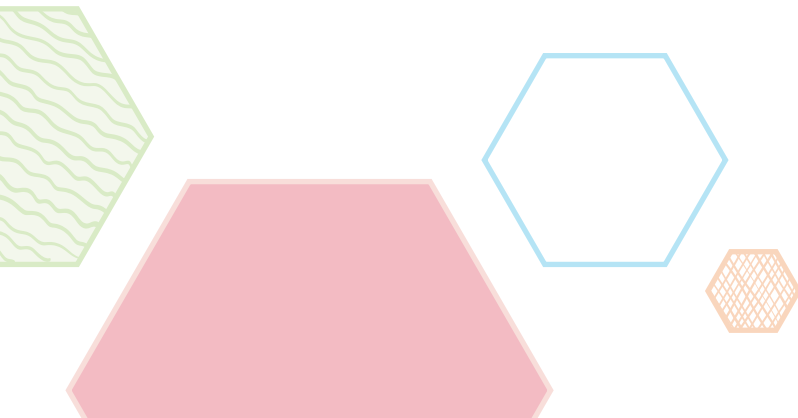


Society: Treat Readiness as a Social Issue

Too often, a person's race, income level or ZIP code determines their outcomes in life. As the nature of work, employer-provided benefits and opportunity changes, disparities and inequities could increase unless regional stakeholders take coordinated action to adjust the social infrastructure to reflect the new reality. Implementing supports that intentionally and equitably protect and expand the middle class promises to lay crucial groundwork for helping the region and its residents thrive in the emerging era.

Action Ideas

- ✓ Adopt asset-based, human-centered and inclusive approaches to addressing the social factors, beyond education and employment that affect readiness (for example, transportation, health and wealth creation). Ensure that communities are co-creators and leaders in efforts to foster community change.
- ✓ Incentivize relationships and exchanges across communities and settings, particularly among teachers and with school and district leaders, so as to build understanding, share experiences and identify possibilities for mutual benefit and support.
- ✓ Use lessons from past major social innovations such as the New Deal to inform consideration of how to foster widespread social change today and how to grow the middle class in a sustainable way that is appropriate for the emerging era.

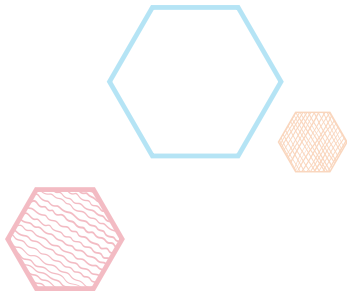


Opportunities in Action: Local and Regional Examples

Efforts to shape the future of readiness in Northeast Ohio are already underway. Stakeholders can learn from, connect to or adapt them as they work to leverage these opportunities. The examples below represent just a sampling of what leaders in the region are currently doing to shape the future of readiness.

Wickliffe City Schools' workforce and career development program engages all 7th- through 12th-grade students in an intentional process of exploration and goal setting. Throughout middle and high school, students receive guidance, develop plans and participate in site visits. In addition, the majority of high school seniors and some juniors have paid internships at companies in Lake and Geauga Counties to help them gain skills in, and exposure to, in-demand manufacturing careers while receiving advice and **mentorship**. When other districts demonstrated interest in starting similar programs in their own communities, Wickliffe partnered with the Alliance for Working Together, the Manufacturing Advocacy Group, the Geauga Growth Partnership and Lakeland Community College to launch NextWork, a platform that allows schools and businesses to **connect and collaborate** to provide such learning opportunities for students.²⁸

A major investment in workforce development and higher education, the **U.S. Department of Labor's Trade Adjustment Assistance Community College and Career Training (TAACCT)** grant program exemplifies a **coordinated social response** to the changing nature of work that is yielding benefits in Ohio and nationwide.²⁹ The grant program has led to efforts such as Ohio TechNet, a **cross-sector consortium** that aims to align education and training with industry needs related to advanced manufacturing and to increase employment and wages. **Ohio TechNet** involves 11 Ohio community colleges (including four in Northeast Ohio), more than 430 employers, workforce partners in 71 of Ohio's 88 counties and the state.³⁰ TAACCT also funded the creation of SkillsCommons.org, an open online library of free courses and job-training materials created by more than 700 community colleges across the country.³¹



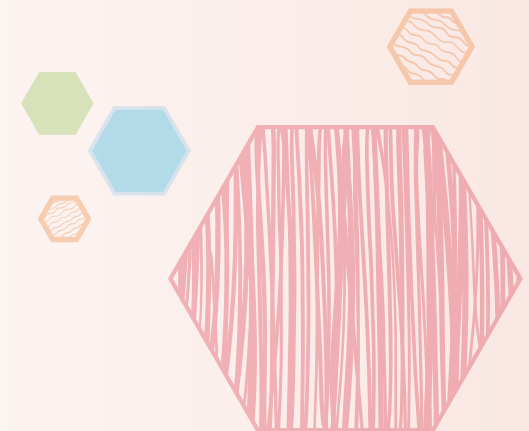
Having been addressing the **social-emotional aspects of readiness** since 2007, **Cleveland Metropolitan School District** has seen student gains in critical areas, including social awareness and self-management. The district's interventions have included curriculum to build social-emotional skills and dedicated staff, such as conflict mediation specialists. High school students also have an authentic role in the district's decision-making: in twice-yearly **Student Advisory Committee** meetings, they review their schools' data, discuss their ideas with peers and offer feedback to district leadership.³²



How might you begin addressing these opportunities or pursuing these action ideas in your context?

What other opportunities might exist, given the existing partnerships, efforts and interests in your community?

**“COMMUNITIES ARE EXPERTS
IN THEIR OWN LIVES AND
OFTEN HAVE THE SOLUTIONS.
WE SHOULDN'T PROBLEMATIZE
THEIR LIFE EXPERIENCES.”**



Redefining Readiness Begins Today

Ensuring future college and career readiness for all young people is in some ways a technical challenge that stakeholders across the education and employment sectors are already addressing by aligning education and training with in-demand skills, increasing student and employee access to new technologies and exposing young people to various career options, among many other important approaches.

However, preparing young people for an uncertain future is also an adaptive challenge that requires taking a deeper look at the values, systems and mindsets that surround education and employment. In addition to exploring how to improve alignment of current systems, stakeholders have the opportunity to consider questions such as:

- How might we engage people in considering the changes ahead in inclusive and meaningful ways?
- To what extent are our education and social systems currently oriented toward efficiency over effectiveness, and how might we increase their future effectiveness?
- How might education institutions meaningfully partner with businesses without allowing job training to become the primary focus of learning?
- How might employers increase their capacity to anticipate and communicate future workforce needs?
- How might we need to rethink how resources are allocated within and across communities to ensure equity?
- How might communities become their own centers of wealth creation so they are not reliant on others?

The reflection questions below can be a starting point for applying insights from this action guide to your context.

- What stands out to you most from the strategy guide?
- What feels hopeful? What feels challenging?
- What questions about shaping the future of readiness do you still have? Which feel most important to address?
- To what year is your organization or effort aiming its readiness work? 2020? Beyond? How might longer-term thinking shift your goals or approaches?
- What are your own next steps in shaping the future of readiness?

Work and education form the bedrock of society. They are key ways in which people learn to understand the world around them, make a living, organize their time and connect with others. By anticipating shifts in that foundation today, education and employment stakeholders can begin to recognize and address the emerging opportunities and challenges and to prepare not only young people, but also ourselves, for the changes on the horizon.

Related Resources

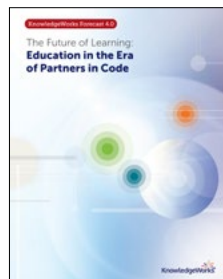
These and other future of learning resources can be downloaded by visiting [KnowledgeWorks.org](https://www.knowledgeworks.org).



[DOWNLOAD](#)

The Future of Learning: Redefining Readiness from the Inside Out

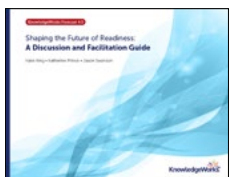
This publication explores how readiness for further learning, work and life may be redefined to better prepare students for an uncertain future. By proposing a new foundation for readiness based on core social-emotional skills, it offers education stakeholders a framework for helping all students develop the skills needed to succeed in possible employment landscapes of 2040.



[DOWNLOAD](#)

The Future of Learning: Education in the Era of Partners in Code

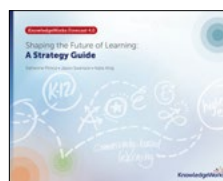
This forecast provides an overview of the era shift that is underway, exploring how five drivers of change might impact people, structures and society and identifying potential opportunities and challenges on the horizon.



[DOWNLOAD](#)

Shaping the Future of Readiness: A Discussion and Facilitation Guide

This guide provides activities and discussion guidance to help cross-sector groups of stakeholders consider their own paths forward in shaping the future of readiness.



[DOWNLOAD](#)

Shaping the Future of Learning: A Strategy Guide

This resource explores five foundational issues facing education and suggests strategies to help K-12 schools; informal and community-based learning organizations, such as museums and libraries; and higher education institutions create a future that serves all learners well.

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Appendix

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Acknowledgements

Many thanks to the Martha Holden Jennings Foundation for its funding support for this publication and the related convening; to convening participants for their contributions and insights, with special acknowledgement of Holly Harris-Bane, Celena Roebuck and Terri Burgess Sandu for participating in the review process; to KnowledgeWorks colleagues Nancy Arnold, Tyler Barnett, Kimberly Daniels, Anne Olson, Judy Pepler and Matt Williams for their feedback on this paper; to Todd Garvin and Stephanie Smith for creating the design; and to Kate Westrich for managing the paper's production and release.



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