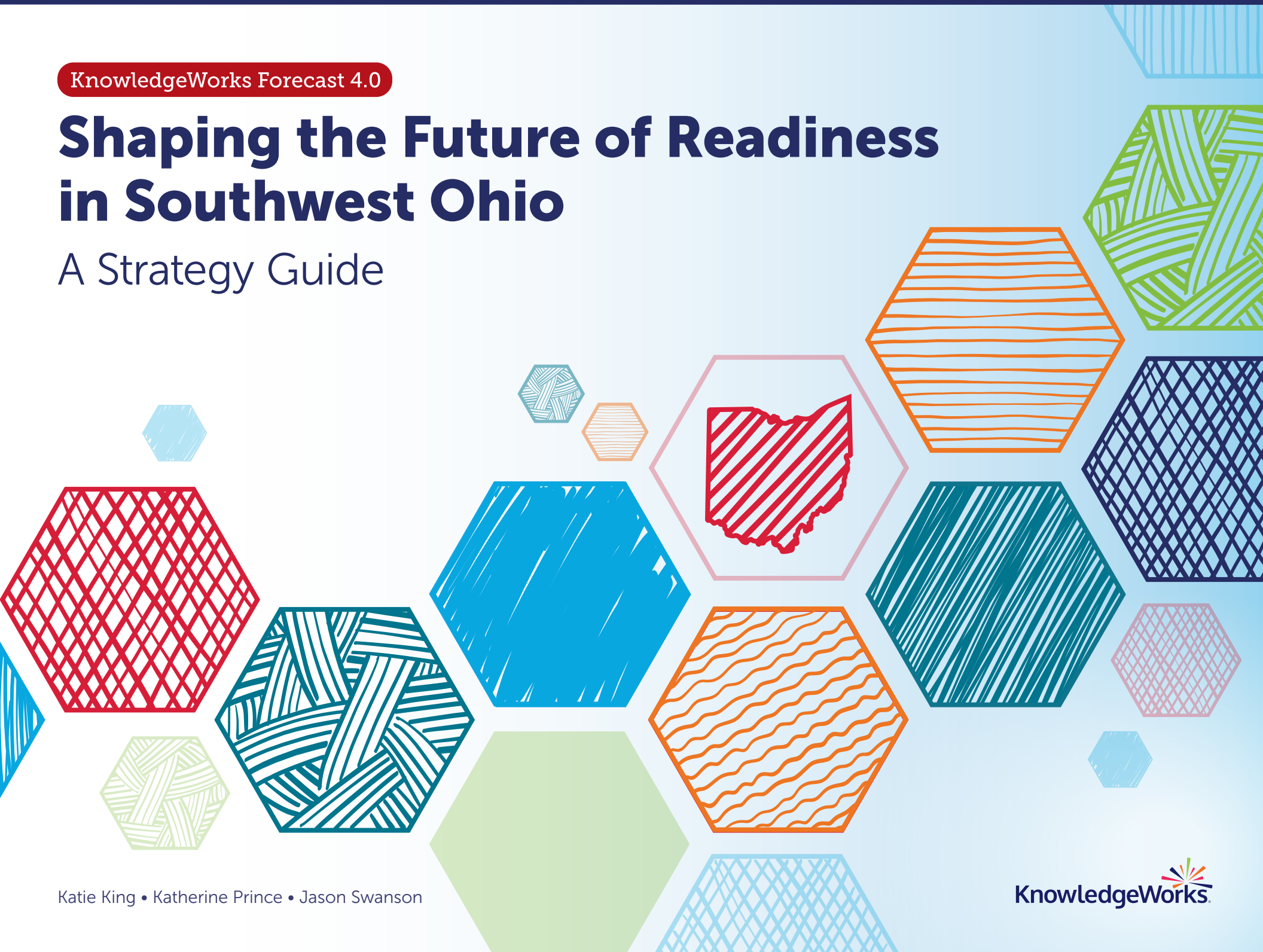
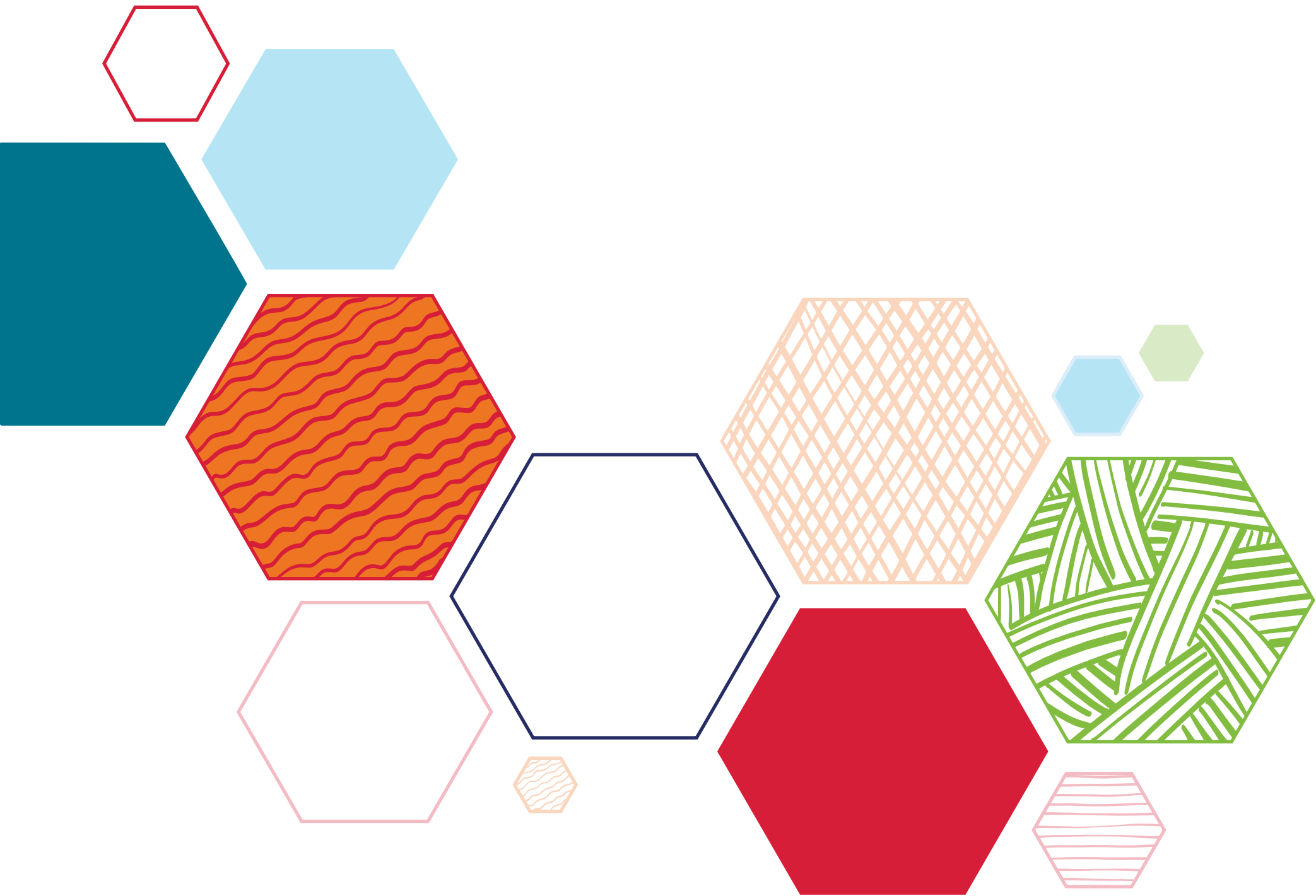


KnowledgeWorks Forecast 4.0

Shaping the Future of Readiness in Southwest Ohio

A Strategy Guide





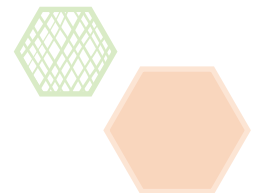
The Case for Redefining Readiness

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 Southwest 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.



THE FUTURE OF READINESS: PREPARING S.W. OHIO FOR A NEW WORLD



NOV 14, 2017
 KNOWLEDGE WORKS S.W. OHIO
 GRAPHIC RECORDING designbyleah.com



About This Strategy Guide

This strategy guide is the result of a convening of K-12, post-secondary and employment stakeholders across Southwest Ohio held on November 14, 2017. With support from the Martha Holden Jennings Foundation, KnowledgeWorks hosted this convening, along with two similar events held in Northeast and Southeast Ohio, to surface regional opportunities to redefine readiness for the emerging era.

This publication draws upon participants' insights to guide other 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 Southwest 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.

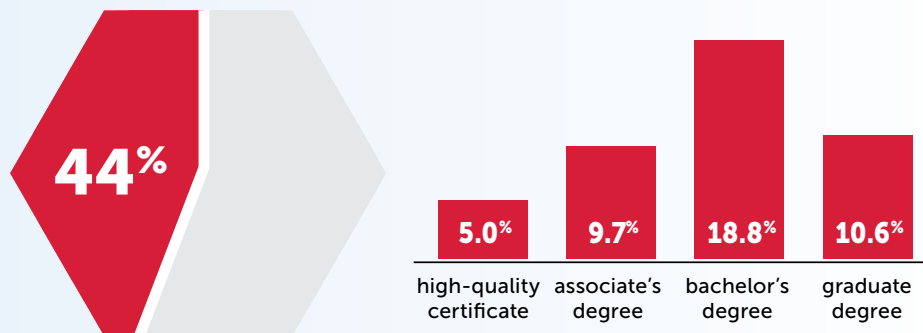
OPEN

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

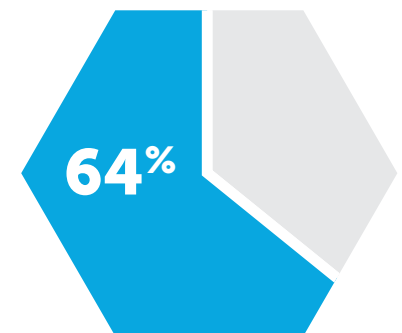
Ohio faces a credentials gap.



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

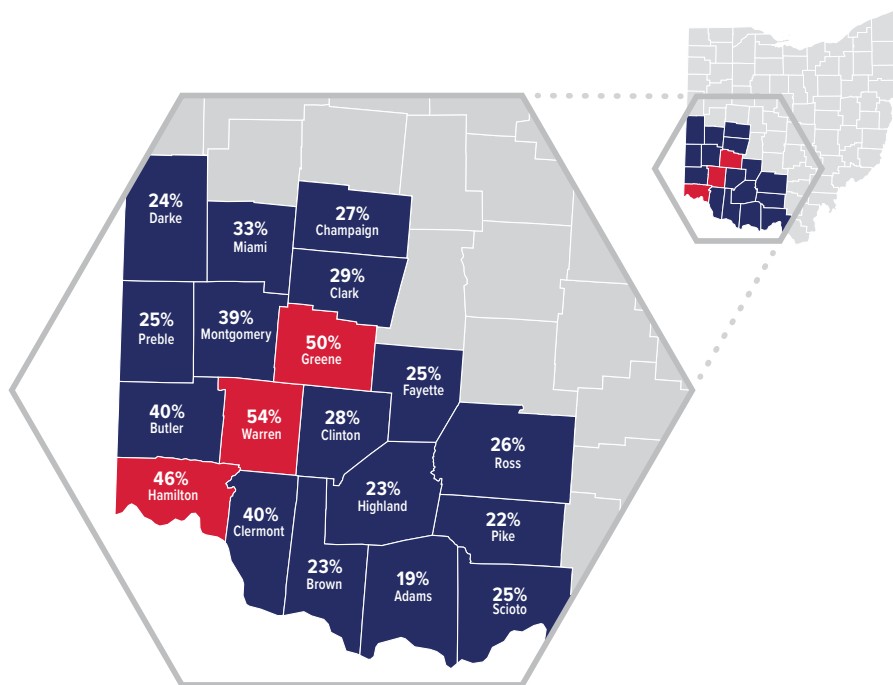


64 percent of jobs in Ohio are projected to require a postsecondary credential by 2020.⁵

Attainment of associate's or higher degrees in Southwest 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 Only **three** of Southwest Ohio's nineteen 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



"IT'S TIME TO CONNECT THE DOTS. WE'RE AT A TIPPING POINT."

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

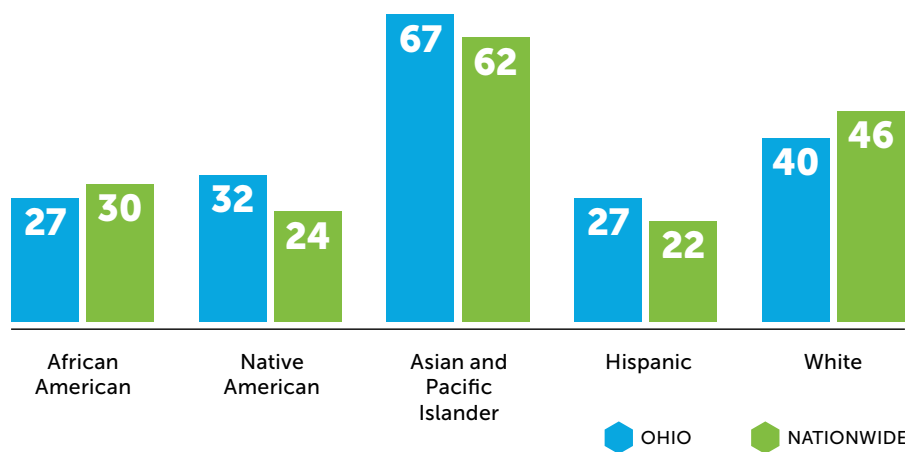
Since 2000, the non-white population increased 30 percent in Ohio and 43 percent nationwide.⁸

Non-white population growth

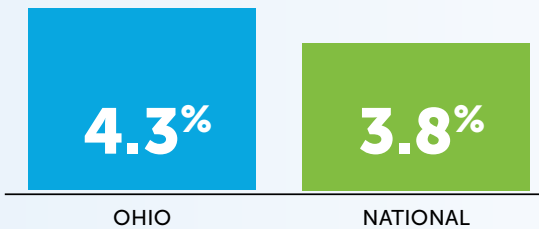


Meanwhile, educational attainment gaps persist.⁹

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

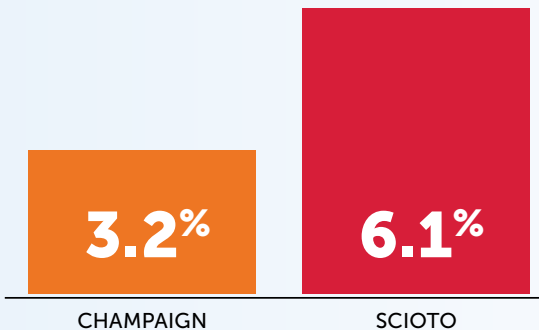


EMPLOYMENT LANDSCAPE



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



Southwest Ohio's unemployment rate varies by county.

As of April 2018, it ranged from 3.2 percent in Champaign County to as high as 6.1 percent in Scioto 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 Southwest Ohio's top five industries are expected to add jobs through 2024.¹⁵

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

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

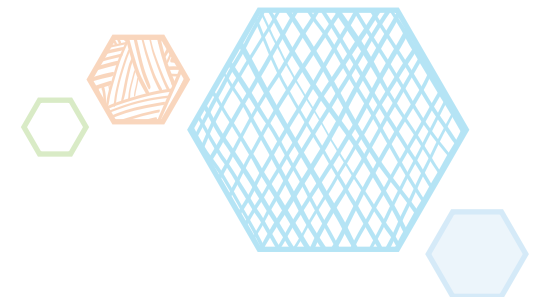
Though **manufacturing employment** is expected to decline in the region and nationwide, certain occupations — namely those associated with maintaining, repairing, troubleshooting, and programming increasingly complex machines — will be in demand, and additional job openings could result from the retirement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

"READINESS IS LOCAL."



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?



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

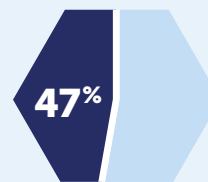
13 **Dayton**
17 **Cincinnati**

Among the 100 largest cities in the U.S., Dayton and Cincinnati rank 13th and 17th, 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

6% ↑

The Cincinnati area is projected to experience a 6 percent increase in the number of self-employed workers and unpaid family workers by 2024.²⁵

Possible Futures of Work for Southwest 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 Southwest Ohio. In considering such developments, convening participants envisioned a range of future scenarios:

- What if Southwest Ohio built upon the state's high ratio of industrial robots to human workers to become a global leader in robotics development and innovation?

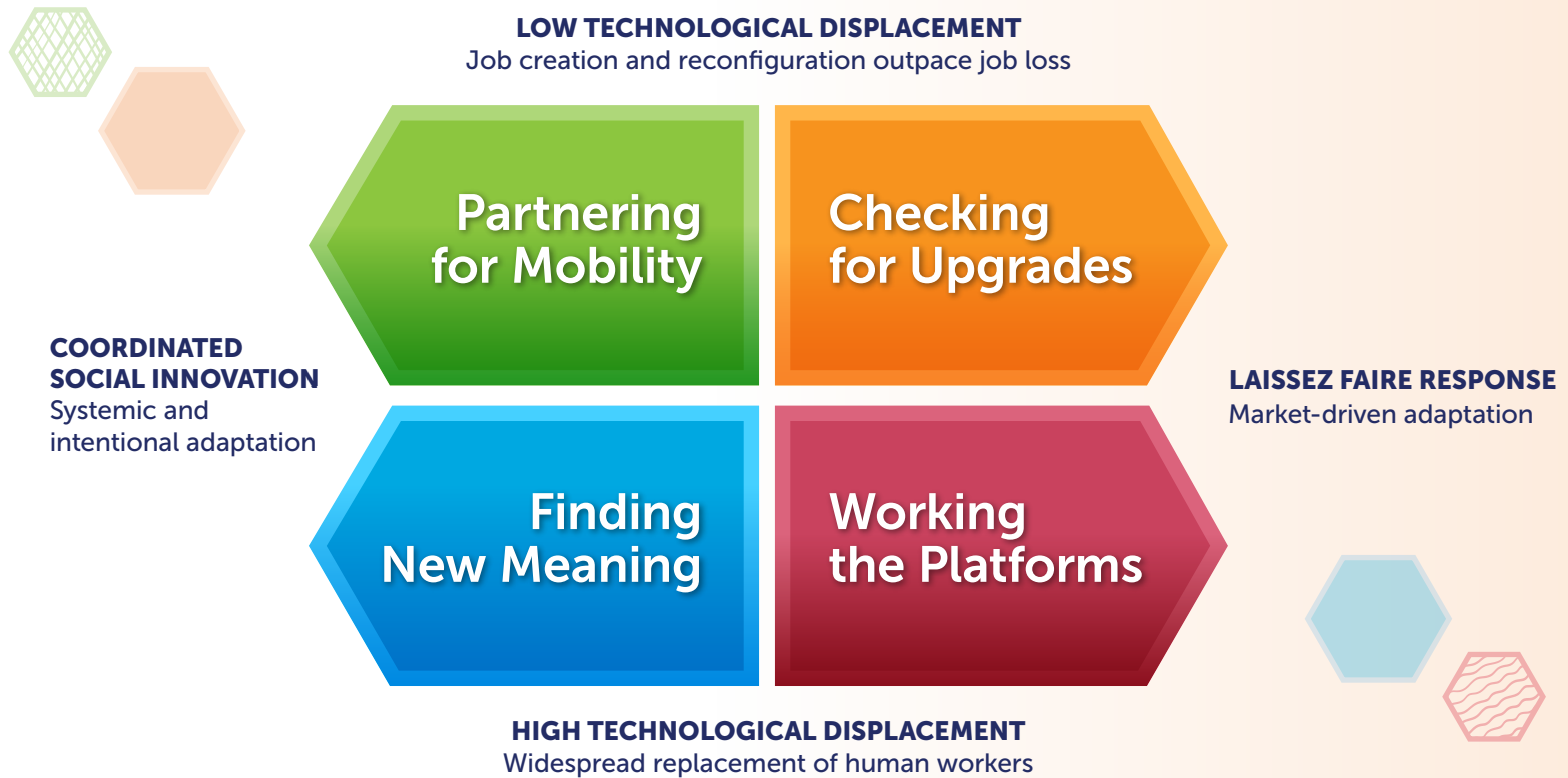
- What if Southwest Ohio, which is within 500 miles of 75 percent of the U.S. population, became a hub for providing for people's basic needs, such as food and health services?
- What if, due to automation, farming became a profession that people could do from anywhere, making it an important second job for city workers and their families?
- What if the changing nature of work led to a rethinking of human development stages and the supports that people need at each stage?

"HOW DO WE AVOID A BIGGER GAP BETWEEN THE 'HAVES' AND 'HAVE-NOTS'?"



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 Southwest 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.

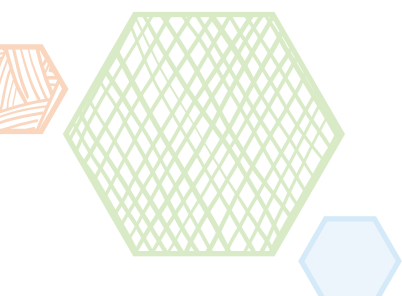
Finding New Meaning: Though machines now do much of the work previously done by human workers, paid work is just one of many ways to earn a living and contribute to society, thanks to a new social support infrastructure that fuels a human-centered economy. Career planning has become life planning, with 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 KnowledgeWorks new foundation for readiness²⁷ shown right describes future work characteristics, along with skills and practices that promise to help people adapt to changing circumstances.



“PEOPLE NEED AN EXTREME SENSE OF PURPOSE.”

A New Foundation for Readiness



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

- **Continuous learning:** As the shelf life of skills shortens, people will need to know when and how to engage in ongoing learning.
- **Cultural awareness:** As work settings become more diverse, people will need to understand different perspectives, norms and points of view.
- **Change expertise:** As the pace of change increases, people will need to be able to notice change as it is happening and adapt accordingly.
- **Adaptable communication style:** As work begins to take new forms, involve new communication channels, and take place in multiple settings, people will need to be able to transition seamlessly among many styles and types of communication.

~~~~~  
"WE NEED TO BALANCE REAL-LIFE EXPERIENCES AND FORMAL EDUCATION."  
~~~~~



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 those 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

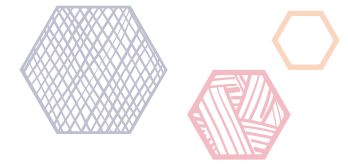
While redefining readiness can seem like a daunting and far-reaching endeavor, education and employment stakeholders can begin that work today. Identifying key opportunities and challenges can help stakeholders critically and creatively examine, revise or reinforce their current efforts and plans and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

In exploring future opportunities and challenges, convening participants identified potential change efforts that could position Southwest 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.

“WHAT GETS US THERE IS SOCIAL AND EMOTIONAL, EVEN THOUGH THE MAIN CHANGES ARE OFTEN ASSOCIATED WITH TECHNOLOGY.”



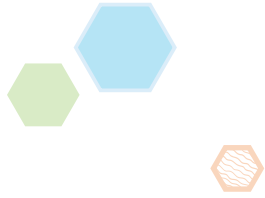


People: Empower Educator and Curriculum Innovation

Some of the knowledge, skills and dispositions that will help people thrive in the future workforce — including metacognition, social-emotional skills and self-direction — are often not emphasized in today's curricula and measures of success even though many educators have long advocated for them. When equipped with the appropriate data, time, partnerships and support to engage in their own experiential learning, explore novel pedagogical approaches and develop curricular innovations, educators are uniquely equipped to design learning experiences that will increase students' readiness for work and life.

Action Ideas

- ✓ Analyze data about outcomes for students who follow certain pathways and use that analysis to support both innovation within existing approaches and the creation of new programs.
- ✓ Provide educators with personalized professional development — such as sabbaticals and experiential learning opportunities — that will support their own future readiness and their development of innovative instructional practices and curriculum.
- ✓ Connect legislators and industry experts to educators through listening tours or cross-sector convenings that aim to elevate teacher voice and expand each group's understanding of the others' needs and challenges.
- ✓ Expand career exploration opportunities for students, using incentives and supports to provide policy flexibility for districts and to encourage employer involvement.



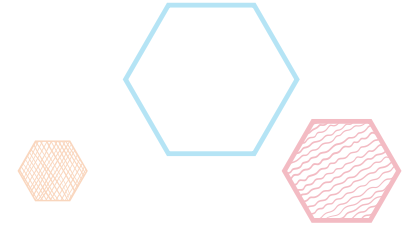
Structures: Incent Partnership and Alignment

Many financial and accountability incentives currently reinforce organizational siloes and disconnected human support systems. As the employment landscape changes and people need new types of education, training, reskilling and social supports, education and employment stakeholders must be able to engage in long-term collaborative relationships and find ways to increase readiness and well-being for people across their lifetimes.

Action Ideas

- ✔ Explore what kinds of infrastructure, both within and among stakeholder organizations, might be needed to support collaboration.
- ✔ Create a regional or statewide cross-sector readiness committee.
- ✔ Consider possibilities for creating new social safety nets and what roles each sector might play.
- ✔ Revise educational institutions' funding and assessment structures to align with emerging readiness needs (for example, by separating seat time from attendance as a way to allow for competency-based, work-based or service-learning experiences and by developing additional measures of readiness beyond traditional test scores and transcripts).
- ✔ Strengthen state-level policy alignment among, and investment in, innovations such as competency-based education, personalized learning and career pathway development.



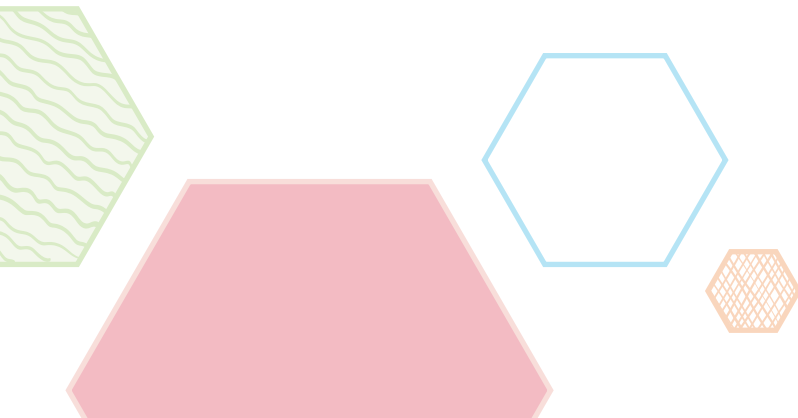


Society: Build Engagement in the Collective Future

Any effort to transform our current approach to readiness will require public will for change, which in turn requires public understanding. Engaging people in broad and inclusive conversations about the changing nature of work and how education and employment stakeholders might prepare young people for that new reality promises to help lay the foundation for meaningful change.

Action Ideas

- ✓ Address public perception and mindsets about what success might look like in a new employment landscape and collaborate to find ways of ensuring quality of life.
- ✓ Create campaigns that communicate the changing nature of work and build a sense of urgency.
- ✓ Reframe issues of readiness through open dialogue and voter engagement.
- ✓ Create local or regional coalitions of students charged with helping the public understand the importance of redefining readiness, including regularly scheduled opportunities for students to present to school, district and municipal leadership.



Opportunities in Action: Local and Regional Examples

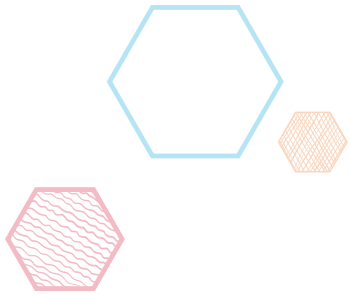
Efforts to shape the future of readiness in Southwest Ohio are already underway. Stakeholders can learn from, connect to or adapt them as they work to leverage these opportunities. The examples below represent just a sampling of what leaders in the region are currently doing to shape the future of readiness.

Cincinnati Preschool Promise is expanding access to quality preschool in Cincinnati, and thereby supporting increased readiness for the city's youngest children. The organization **partners** with Cincinnati Public Schools, United Way of Greater Cincinnati and more than eighty preschool providers. The effort was made possible by extensive voter **engagement** that led to the passage of a five-year levy that includes \$33 million a year to strengthen K-12 education and \$15 million a year to expand access to quality preschool.²⁸

Learn to Earn Dayton is working with area legislators to **align** readiness efforts across the P-16 continuum with specific state and local policy recommendations that will enable the community to achieve its overall degree and credential attainment goal. Recommendations include restricting suspension of children before third grade, providing intensive clinical experiences in urban and rural environments for future **educators**, and supporting **partnerships** with organizations and businesses to expand summer learning and career-tech programs.²⁹

Butler Tech and **Ross High School** are providing students with **innovative** learning experiences by supporting their participation in national and international entrepreneurship competitions such as Students for the Advancement of Global Entrepreneurship. The competitions allow students to develop authentic solutions to challenges and the skills necessary to bring those solutions to life. In February 2017, one team of students was named one of ten national finalists in the Samsung Solve for Tomorrow competition for their School Safety System app, which provides school administrators and first responders with early warnings about a range of emergencies.³⁰

Cincinnati State Technical and Community College has **aligned** its 130 degree programs into nine industry clusters, such as Computers, Multimedia and Design and Public Safety. Within those clusters, students can work toward high-quality certificates and associate degrees, which can lead to bachelor's or master's degrees in a wide variety of disciplines. Such alignment allows students to chart their personalized pathways clearly and easily, with support from academic and student support professionals.³¹



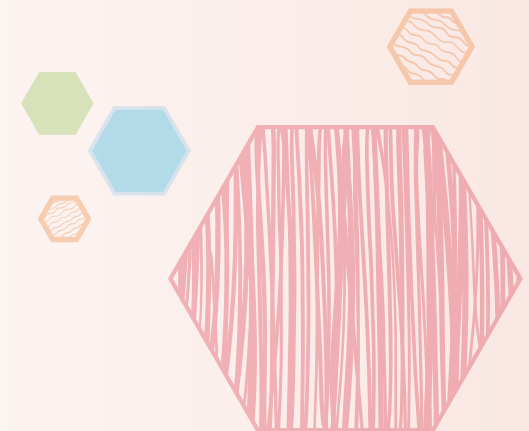
The Ohio Department of Education plans to integrate its existing kindergarten through third-grade social and emotional learning standards into **curriculum**, instructional practices and supports and to evaluate whether the standards should extend through high school. The department is also planning to develop a local **engagement** toolkit to support districts in collaborating with their communities toward effective communication, student success and inclusive environments.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?

“WE NEED TO NAVIGATE COMPETING AND SOMETIMES PARADOXICAL VALUES. FOR EXAMPLE, PERSONALIZATION CAN BE BOTH POSITIVE AND NEGATIVE.”



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 students' and employees' 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:

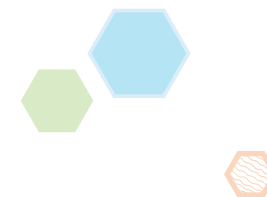
- How do we prepare people to make meaning and build social connections in an increasingly fragmented and automated world?
- How might we ethically navigate a world that includes autonomous artificial intelligence?
- What types of political will do the challenges and opportunities ahead require?

In addition, the reflection questions below can be a starting point for applying insights from this strategy guide to your context.

- What stands out to you most from this 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?
- How can you continue this conversation with other stakeholders? Who should be part of that conversation?
- 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.



[DOWNLOAD](#)

The Future of Learning: Redefining Readiness from the Inside Out

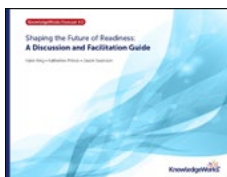
This publication explores how readiness for further learning, work and life may be redefined to better prepare students for an uncertain future. By proposing a new foundation for readiness based on core social-emotional skills, it offers education stakeholders a framework for helping all students develop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



[DOWNLOAD](#)

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

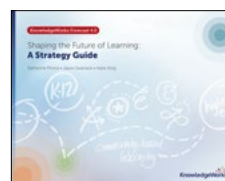
This forecast provides an overview of the era shift that is underway, exploring how five drivers of change might impact people, structures and society and identifying potential opportunities and challenges on the horizon.



[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

About the Authors

Katie King works as Strategic Foresight Engagement Lead at KnowledgeWorks where she helps customize explorations of the future of learning for partners and supports the research and thought leadership of the strategic foresight team. Katie holds a BA in Journalism from the University of Southern California and an MS in Foresight from the University of Houston. She is a member of the Association of Professional Futurists and co-authored *The Futures Thinking Playbook*.

Katherine Prince leads KnowledgeWorks' exploration of the future of learning. As Senior Director, Strategic Foresight, she speaks and writes about the trends shaping education over the next decade and helps education stakeholders strategize about how to become active agents of change in shaping the future. Katherine holds a BA in English from Ohio Wesleyan University, an MA in English from the University of Iowa and an MBA from The Open University and is a member of the Association of Professional Futurists.

Jason Swanson is the Director of Strategic Foresight at KnowledgeWorks where he helps lead the organization's research into the future of learning, develops publications and works with education stakeholders to generate actionable insights. Jason holds a BA in Public Policy from West Chester University and an MA in Foresight from the University of Houston. He is a fellow with the Royal Society of Arts and is a board member of the Association of Professional Futurists.

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 Tim Cybulski, Sharahn Monk and Amy Waldbillig 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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