A Framework for Digital Equity

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Accelerating Innovation in Education

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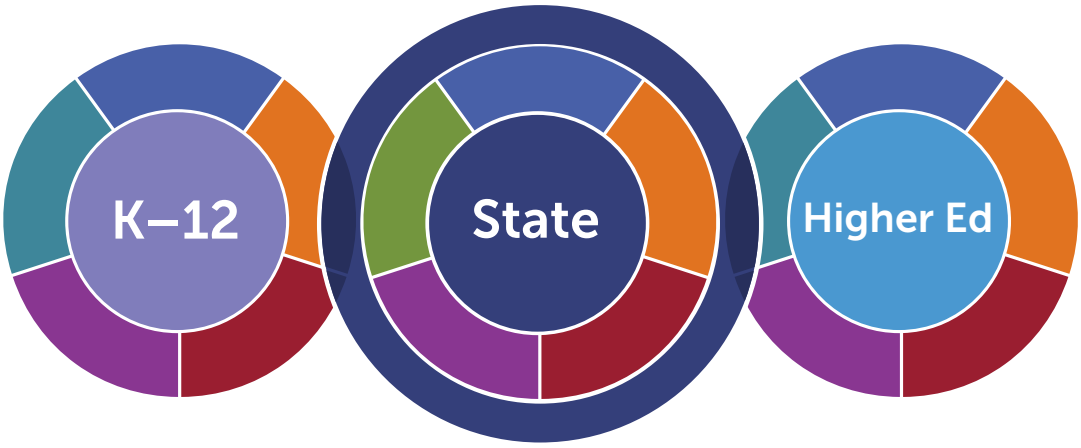
The Purpose of This Publication

This publication outlines a new way of thinking about digital equity and how states, K-12, and higher education can achieve it. It introduces three frameworks for digital equity, designed to lay the groundwork for learners to fully participate in society amid the rise of generative AI and other emerging technologies that are digitizing the global economy:

- A **State Digital Equity and Opportunity Framework** that establishes the central role states must play across education, housing, and workforce sectors to establish digital equity and facilitate full participation in the workforce and society. It proposes potential policy solutions, metrics for measuring their success, requirements for state agency personnel and/or vendor engagement, and potential funding sources for state initiatives.
- A **K-12 Digital Equity Framework** that identifies the actions that schools and districts must take across five interdependent domains to graduate students prepared for postsecondary learning opportunities and a workforce that increasingly requires digital skills. Supporting school and district implementation of the Framework are two additional tools: **Digital Equity Competencies for K-12 School Systems** that educators must acquire to successfully implement the Framework, and a **K-12 Digital Equity Framework Self-Assessment** designed to help schools and districts identify where they stand in each domain and evaluate progress.
- A **Higher Education Digital Equity Framework** that similarly will define the actions members of higher education communities must take to successfully activate the five domains they share with K-12.



The first section of this publication explains why Digital Promise believes it's past time for us to look at digital equity differently than we have before, and why we need new frameworks to achieve it.

In the summer of 2000, Alan Greenspan, then chairman of the Federal Reserve, spoke to the National Governors Association about the explosion of information technologies in the American economy and its implications for K-12, higher education, the workforce, and states. He reminded the governors of the special burden that higher education must carry to "meet evolving demands for skilled labor," prepare "society for the demands of rapid [technologically driven] economic change," and the need to strengthen the contributions of "other types of training programs," especially for workers with lower tech skills. He gave special attention to school districts. He noted that they had been challenged to integrate new technologies into classrooms, lamenting that too often that challenge was interpreted as simply wiring them and that students were using technologies to perform simple tasks only.

Had the term existed at the time, he might have prefaced his next remarks by saying, "We need the digital transformation of learning." If students were to most benefit from emerging technologies, he argued to the assembled state executive officers, "we must provide teachers with the necessary training to use them effectively," forums "for teachers and education researchers on how best to integrate technology into the curriculum," and "standards and guidelines for the use of technology in schools."

Pointing to the connection between what we now call "digital equity" and the K-20-to-workforce continuum of learning, he concluded, "More generally, we must ensure that our whole population receives an education that will allow full participation in this dynamic period of American economic history."

Greenspan could give a similar speech today, calling again, 24 years later, for the digital transformation of learning.

Take teaching in K-12, for instance. Only 18 percent of schools strongly agree that teachers are sufficiently trained to use technology for instruction. Teachers themselves rank "managing and orchestrating the use of digital technologies" as the most "urgent" of all needs, with a strong majority saying these needs are either "insufficiently met" or "not met" at all. Only half of them report feeling very comfortable using technology in their lessons.

Students, however, might quibble with even that figure. Eighty-four percent of students in grades 6-12 state that the number one way they are using new technology in school is taking online quizzes and tests, followed by creating documents to share (64%), emailing teachers with questions (55%), and watching online videos (52%). Greenspan's concern that schools weren't taking advantage of more powerful educational technologies 24 years ago remains a national problem.

Digital literacy gaps are pronounced among higher education faculty as well, a fact made clear by whole-scale remote learning required during the COVID-19 pandemic. Those on one side of the gap are more capable of using technology to engage and interact with students, while those on the other end use it simply for content delivery or display. Only higher education institutions that help faculty adapt the delivery and content of their courses have deployed new learning technologies in classrooms successfully.

As for access to connectivity and devices, although nearly all of the nation's K-12 schools are now wired for broadband, more than half of high school students and nearly 50 percent of middle school students say that the internet is either too slow or inconsistent. And in 2020, 30 percent of students—15 to 16 million—lacked access to adequate internet or devices at home. Nine percent lacked both. In higher education, 25 percent of all students have difficulty connecting to course content because of the lack of reliable internet. Eight percent of all students complete their coursework on a cell phone or tablet.

The digital transformation of learning across K-12 and higher education remains a distant goal decades after we left the postindustrial age.

Yet we cannot achieve that digital transformation and full participation in society without digital equity.

In K-12 education, historically and systemically excluded students have much less access to the internet and devices than their peers. Twenty percent of teens in households with incomes under $30,000 do not have computers in their homes. Students in remote rural areas are more likely to lack internet access, and even in counties with a low digital divide, the absence of access is seven times higher for low-income households. Race is also a strong indicator of being on the wrong end of the digital access divide. Fifty-four percent of the nation's unconnected learners identify as Black, Hispanic, or Native American, despite making up only 40 percent of the population. Students with limited or no home internet access are more likely to have lower digital skills and less likely to pursue higher education or STEM careers.

A divide also exists between students who regularly use technology in active, critical, and creative ways and those whose experiences are limited to more passive expectations for use. Since the late 1990s, we have known that lower-income students and students of color are more likely to use computers for "drill-and-practice" and have teachers with less computer training. Across the world's economies, including in the United States, affluent students still are more likely to have more tech-savvy teachers who integrate technology into instruction than students who are less privileged. COVID-19 and the nation's move to remote learning had no impact on the digital use divide; the 2024 National Educational Technology Plan observes bluntly that emergency federal funding sources narrowed the digital access divide during the pandemic, but it "did not close the digital use divide."

Digital access and use divides exist in higher education as well. Lower-income higher education students and students of color have less access to connectivity and devices, and Black students are more likely to use a cell phone or tablet rather than a laptop to complete coursework than white or Latino/e students. On a systems level, Minority-Serving Institutions (MSIs), Historically Black Colleges and Universities (HBCUs), and Tribal Colleges and Universities (TCUs) are historically lower-resourced than other public and private institutions. As a result, they have stark capability deficits in new hardware, software, and digital technologies and struggle to pay for reliable broadband connections. Lack of resources also make it difficult for them to provide professional learning opportunities that address digital skill deficits among their faculties. It's little wonder, therefore, that students enrolled in MSIs, HBCUs, and TCUs are less likely to use learning technologies in their course work.

The Economic and Other Impacts of Digital Inequity

The economic impact of the lack of digital equity is keenly felt by people of color. According to a 2020 study from the National Skills Coalition, half of Black workers and 57 percent of Latino/e workers have limited or no digital skills, compared to nine percent of white workers. Their study also found that 41 percent of white workers are advanced in their skills, while only 13 percent of Black and 17 percent of Latino/e workers are considered advanced. Yet, today, more than 90 percent of jobs demand digital skills, 95 percent at the entry level. Median hourly wages climb as greater numbers of digital skills are required, ranging from $17.62 for jobs requiring none to $43.00 for jobs demanding nine or more. Moreover, the 54 percent of unconnected students who are Black, Latino/e, and Native American and have lower digital skills are less likely to pursue higher education or STEM degrees and will not have access to the higher wages that a college—and especially a STEM degree—facilitate.

But the damage done by the absence of digital equity goes beyond economics. It inhibits involvement in our society and democracy, civic and cultural participation, lifelong learning, and access to essential services—all of which have become more digitized: online classes, job training or certification courses, religious services, public meetings, health care, monitoring children's progress in school, police reporting—and on and on. Although we are a long way from fully realizing the power of digital technologies across all racial and economic lines, that problem is particularly acute for historically and systemically excluded communities.

The Need for New Approaches to Digital Equity

Something has to change. No one wants a future Federal Reserve chairperson to give Greenspan's speech in 2050. Our current challenge, however, is far greater than could have been imagined in 2000.

We are already trying to catch up to a vision for the digital transformation of learning and digital equity laid out a quarter of a century ago. Add to that a modern digital landscape upended by the meteoric rise of generative artificial intelligence (AI), and the rush of states, schools, governments, and economies to make sense of what AI, quantum computing, and other emerging technologies mean for business and industry, economic and social prosperity, and therefore how and what we teach and learn in K-12, higher education, and the workforce.

At Digital Promise, we are always thinking about what we can do to advance the cause of digital equity. We are constantly asking, "What's missing in the field? How do we evolve?" To answer these questions, we've drawn from what we've learned from the body of National Educational Technology Plans (NETPs) that, since 1996, have called for digital transformation and far greater digital equity. The new 2024 NETP taught us more about how to close divides in access to and use of technology, and gaps in educators' capacity to design powerful learning activities for all students using edtech tools. From our experiences and projects, we've also gathered a greater understanding of the digital skills that educators must have; how systems must be designed; and what strong, inclusive leadership looks like in the digital age.

We've established that digital equity is about more than just providing access to devices and connectivity...

We've established that digital equity is about more than just providing access to devices and connectivity, or even the provision of opportunities to "use" technology in active, critical, and creative ways. Digital equity encompasses and requires a holistic, systemic, well-resourced, and coherent approach that includes empowering educators and learners with digital competencies, fostering inclusive and innovative powerful learning experiences, and ensuring that digital transformation leadership reflects the voice and needs of all partners and school community members. And, it requires far more state engagement.

We've codified the evolution of our thinking in three Digital Equity Frameworks that we believe will help states, K-12 school districts, and higher education institutions lay the groundwork for addressing the challenges that have lingered with us for decades, as well as the new challenges presented by AI and other emerging

technologies. A State Framework for Digital Equity builds on a state-focused publication we released in 2022. It acknowledges the important role states play in activating digital equity efforts across education, housing, and workforce sectors and articulates specifically how they can take on that role.

The other two frameworks recognize that K-12 is the engine for digital equity. The K-12 Digital Equity Framework and the Higher Education Digital Equity Framework provide a structured approach to moving digital equity efforts beyond access to broadband and devices, and into domains that are essential for digital equity but have remained largely unaddressed. Applied together, we believe, the frameworks will better ensure that all people living, learning, and working in the United States are able to keep their feet firmly planted on the ground as the digital landscape shifts, twists, and turns into the future, changing how we live in society; learn in schools, colleges and universities, and job-training programs; and work in an increasingly digitally dependent economy.

Introducing the

K-12 Digital Equity Framework

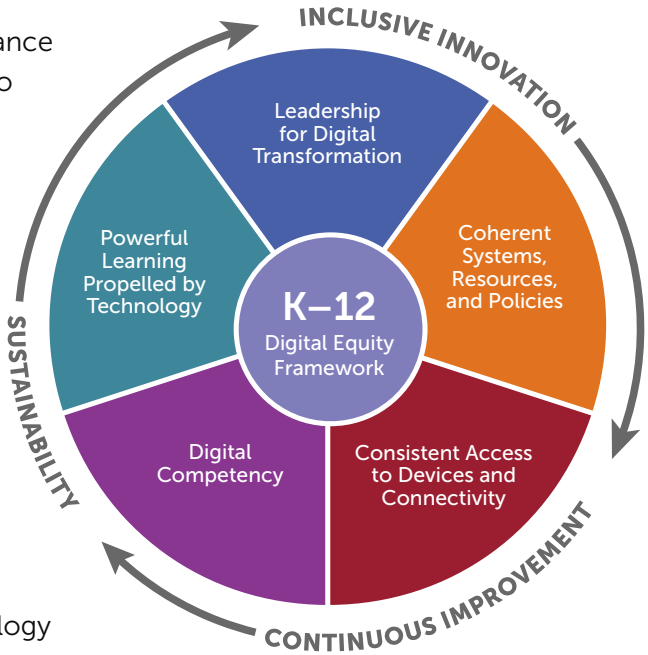
Domains, Guiding Principles, Indicators of Their Activation, and Associated Tools

The Domains

Digital Promise's K-12 Digital Equity Framework is comprised of five interdependent domains:

Leadership for Digital Transformation

This domain refers to the strategic and inclusive guidance provided by district, school, and community leaders to enact a vision for deep technology integration across the education system. It sets the conditions for ubiquitous learner-centered education that leverages technologies to ensure all students learn at their highest levels and achieve equitable academic, social, and economic outcomes that are equitable.



Coherent Systems, Resources, and Policies

This domain refers to the alignment and activation of systems, resources, and policies to a defined strategic and continuous improvement plan for deep technology integration. These activities result in remarkable coherence across all organizational functions, which, in part, manifests in funding technology in full; support for it through approved policies, including those that ensure data privacy and ongoing procurement of devices and emerging technologies; and integration of technologies into core systems, such as structured professional development activities.

Consistent Access to Devices and Connectivity

Application of this domain ensures adequate and consistent access to high-speed internet, devices, and emerging technologies and learning tools for all learners, both in and outside the classroom. It places major attention on physical infrastructure, procurement, device distribution and maintenance, and the development of sustainability plans to ensure high-speed connectivity, powerful devices, and emerging technologies provide uninterrupted access to ubiquitous powerful learning for all.

Digital Competency

This domain activates efforts to develop the digital skills, mindsets, dispositions, and/or behaviors that are essential for all people to effectively use technology to fully participate in a digitally driven society. These competencies enable individuals to lead, educate, learn, navigate, communicate, and utilize current and emerging technologies in various aspects of their personal, academic, and professional lives.

Powerful Learning Propelled by Technology

This domain operationalizes learner-centered instructional models that seamlessly integrate digital resources and emerging technologies into evidence-based teaching and learning practices that result in high engagement and deep understanding. It marries the key tenets of Powerful Learning with the innovative potential of emerging technologies, digital resources, and tools. The goal is for learners to develop the vital competencies needed to earn credentials and achieve well-being, agency, and economic security.

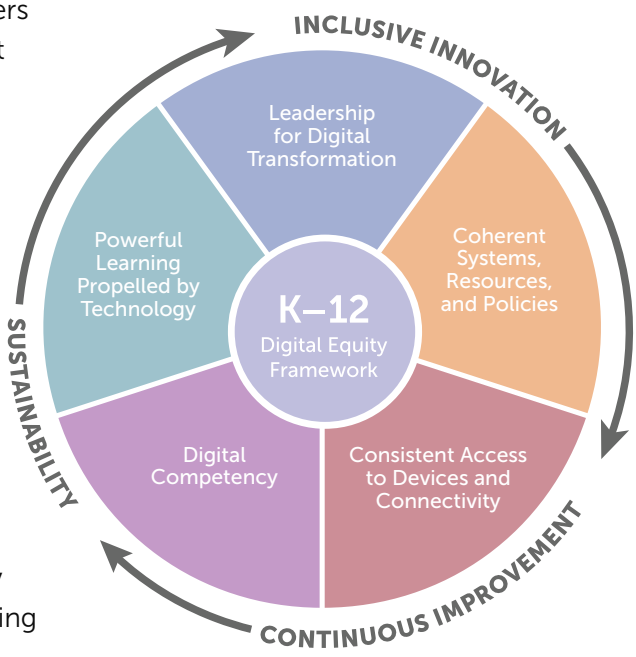
Activating all five domains over time is essential.

Operationalizing one domain is in part triggered by implementing another. Domains are interdependent. **Strong Leadership for Digital Transformation**, for instance, is essential for the development of **Coherent Systems, Resources, and Policies** that support digital equity. In turn, **Coherent Systems, Resources, and Policies** provide the foundation for leaders to enact their vision for deep technology integration. The same is true for the dependencies between **Consistent Access to Connectivity and Devices** and **Digital Competency**. Consistent access is a prerequisite for developing digital competencies among student, educator, and other groups that make up school communities. As individuals gain digital competencies through their access to devices and connectivity, they are better equipped to leverage available devices and connectivity for powerful learning experiences through which they gain new competencies. Across the Framework's domains, there are numerous additional co-dependencies.

Failing to address all five domains over time could exacerbate digital divides. For example, if leaders do not ensure adequate and consistent access to high-speed internet and devices, especially for homes, students lacking access will continue to fall behind in their digital skill development, and teachers will be challenged to provide them with equitable learning opportunities.

The Framework's Guiding Principles

Guiding Principles animate each domain. The guiding principles form the belief system that underlies the actions schools and districts take in each domain area. The principles galvanize the work, prioritize the learners and communities involved, and remind us that pursuit of digital equity is a continual effort that will change over time, just as technology, communities, and our understanding of teaching practice will change. The Framework consists of three guiding principles:



- A belief in **Inclusive Innovation** acknowledges that digital equity work must be done in collaboration with communities, including the most impacted, underserved, and underrepresented. It grounds efforts to address digital inequity in the ideals of targeted universalism and centers it in the voices of those historically and systematically excluded.
- A belief that elevates the importance of **Sustainability** recognizes that digital equity efforts are society-building and mission critical and that schools and districts engaged in them must plan for the long term.
- A belief in the importance of **Continuous Improvement** accepts that there should never be a sense of satisfaction, and that schools and districts are always striving to achieve more equitable outcomes efficiently and effectively.

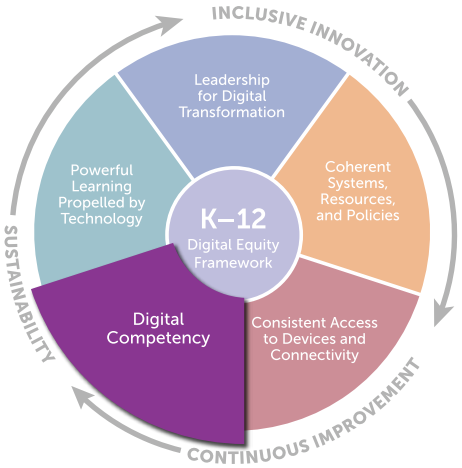
Actions that Indicate Progress toward Activation of Each Domain: The K-12 Digital Equity Framework Domain Indicators

The domains and guiding principles manifest in schools and districts through the actions of various members of district/school communities (e.g., teachers, instructional technology coaches, school and district leaders, IT professionals, students, and families) to make the domains functional and sustainable. These are markers or signs that schools and districts are making progress in each domain. We've called these signs "domain indicators;" they provide clear guidance for districts and schools on what it takes to trigger each domain in full. In short, the indicators bring the K-12 Digital Equity Framework to life.

Moreover, an essential question for each domain establishes the relevance, purpose, and direction of work required to address each indicator. We also provide examples of evidence and artifacts that schools and districts can collect to demonstrate concretely that they have hit the marks the indicator establishes.

See the sidebar for an example of an indicator from the Digital Competency domain.

K-12 Digital Equity Framework Domain Indicators: An Example



Domain: Digital Competency

Essential Question: How is developing the digital skills and mindsets of all educators and learners a priority?

Indicator: *Comprehensive Digital Literacy Support:* Learners, staff, and families describe having access to comprehensive digital literacy training and support, ensuring the development of essential skills, mindsets, and behaviors needed for full participation in a digitally driven society.

Evidence/Artifacts:

- **Digital Literacy Curriculum:** A research-based digital literacy curriculum that addresses essential skills, mindsets, learner variability, and behaviors, and meets established criteria identified by learners, staff, and families.
- **Training and Support Resources:** Availability of diverse training and support resources, such as workshops, online courses, and guides.
- **Partner and School Community Feedback:** Surveys or testimonials from learners, staff, and families describing the effectiveness of digital literacy support.
- **Community Partnerships:** Collaborations with community organizations to provide digital literacy training and resources.

Digital Equity Competencies: An Essential Tool for Operationalizing the K-12 Digital Equity Framework

The Digital Competency domain of the Framework refers to the digital skills, mindsets, dispositions and/or behaviors learners, educators, and all people must have to use technology and digital media for full participation in a digitally driven society. The **Digital Equity Competencies for K-12 School Systems**, on the other hand, define what teachers, instructional technology coaches, and administrators (inclusive of district, school, and IT leaders) need to know and be able to do—and the mindsets they need to have—to implement each of the five domains. In short, operationalizing each domain requires the collective application of specific competencies that differ by role.

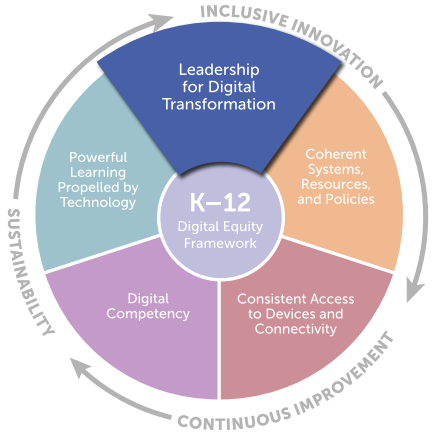
Specific competencies are identified for each educator group. These are then organized around components and subskills. The **Components** are eight broad categories or areas within a single domain shared by each educator group. They encompass a distinct facet of a larger education system designed for digital equity. **Subskills** are the specific abilities or proficiencies required to acquire a competency.

Figure 1: Example of Teacher Digital Competencies within the K-12 Digital Equity Framework Leadership for Digital Equity.

Teacher Competency	Teacher Sub-Skills
Visionary Leadership: The ability to develop and communicate a shared vision for digital equity.	1. Develops and contributes to a shared vision for technology in education specific to their grade and/or content area. 2. Engages students to create a shared vision for technology and digital citizenship that leads to enhanced learning experiences.
Strategic Planning: The ability to contribute to and use the school's strategic continuous improvement plans for digital equity.	1. Develops technology integration plans specific to their classroom by using district- and school-based continuous improvement plans. 2. Advocates for technology integration and influences school-based strategic plans at the grade-level or content-area level in alignment with a district and/or school vision for technology.

Tying It All Together: The Interconnectedness of Domains, Guiding Principles, Indicators, and Digital Equity Competencies

Below demonstrates how a domain, a guiding principle, an indicator (and its essential questions and suggested artifacts and evidence), and the Digital Equity Competencies all fold up into each other to trigger a domain.



An Example of How It All Comes Together to Activate a Domain

Domain: Leadership for Digital Transformation

Essential Question: To what extent does your vision for teaching in schools reflect the voice of all partners and members of the school community and drive toward long-term sustainability?

Indicator: Collaborative Vision Development. Key members of the school community, including those historically underserved, are actively engaged in collaborative development of a clear, shared vision for deep technology integration that ensures equitable learning opportunities and outcomes for all learners.

Evidence/Artifacts: (1) Artifacts of Engagement: Records of workshops or meetings with key partners and members of the school community explicitly contributing to the development of the vision; (2) Documented Shared Vision: A formal vision statement available publicly (e.g., on a website) and in physical spaces within the school; (3) Documented Feedback and Perspectives: Surveys, feedback forms, or meeting minutes reflecting how an inclusive process of gathering and acting upon input from the district community influenced the vision development.

Digital Equity Competency

Component: Leadership for Digital Equity

Competency for a Teacher: Visionary Leadership: The ability to develop and communicate a shared vision for digital equity.

Subskill: Engage students to create a shared vision for technology in education specific to teacher's grade level and/or content area.

Guiding Principle Implicit in the Example: Inclusive Innovation. The essential question drives toward the inclusion of all school partners and members of the school community. The indicator signals not only the involvement of key members of the community in vision development but the active engagement of historically underserved members of that community. The suggested evidence and artifacts include documentation that the school or district gathered and acted on feedback and input from the community in the creation of the vision. The teacher competency signals that students are "partners" and should be involved in the development of classroom visions for technology.

A Tool to Track Progress Toward Activation of the Domains: Introducing the Digital Equity Framework Self-Assessment

Digital Promise designed a **Digital Equity Framework Self-Assessment** as a tool to facilitate adoption of the Framework in schools and districts. Through its application, they can identify domains for which they already have addressed some or many of the indicators and domains that require substantial action. The intent is to help schools and districts operationalize all domains in ways that reflect their interdependence and incorporate the Framework's three guiding principles.

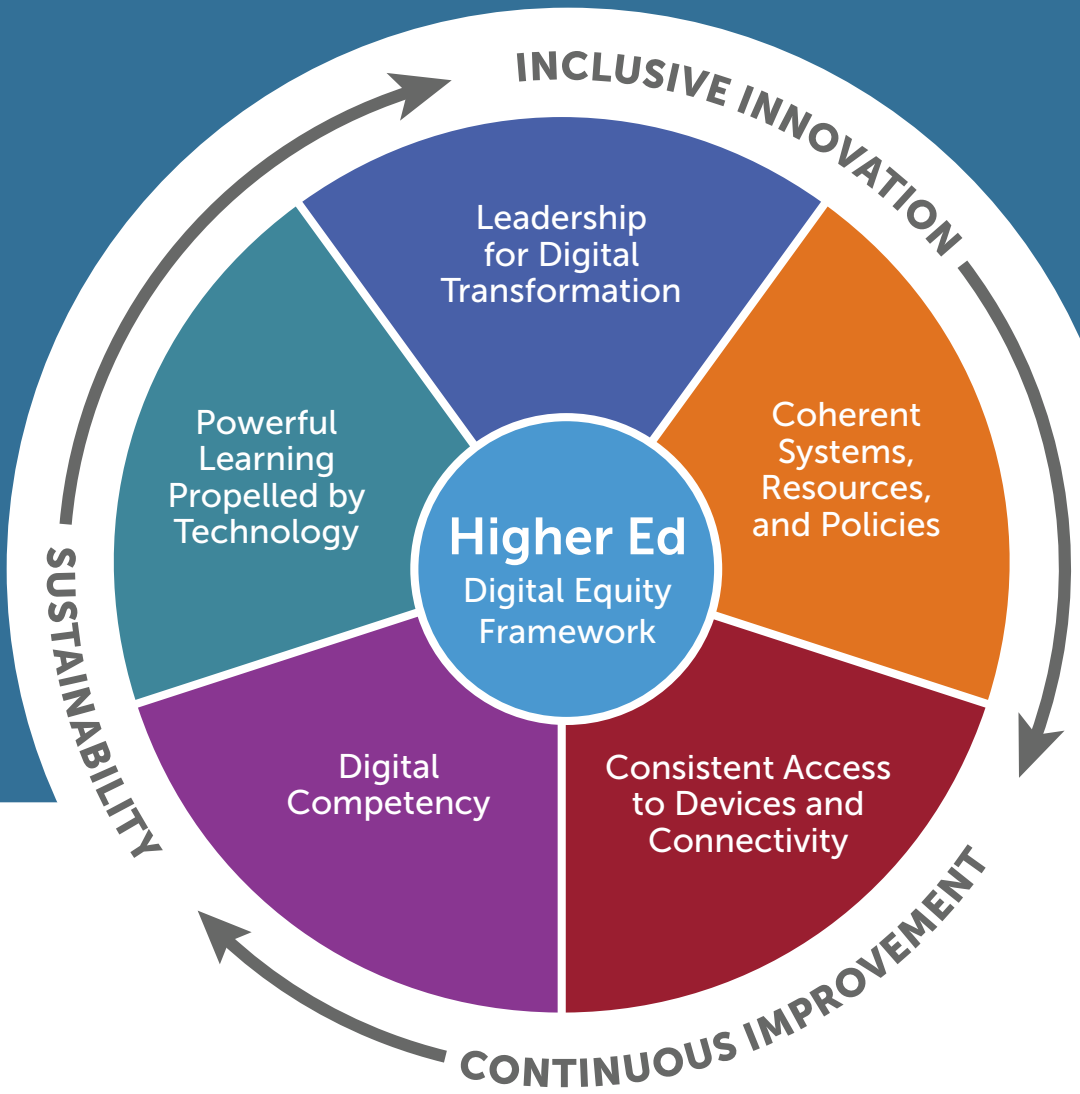
Districts may choose to work on one or more domains at a time, basing their focus on the results of their self-assessment, current priorities, and resources. Though the self-assessment asks schools and districts to take a holistic, cross-domain view of digital equity, we encourage them to use the tool flexibly. Schools and districts can focus on areas that are in alignment with immediate needs and gradually expand their efforts to address all domains over time. And, because achieving digital equity is an ongoing journey, they can revisit the self-assessment to monitor progress and refine strategies as necessary—in the spirit of the guiding principle of continuous improvement.

Figure 2: The K-12 Digital Equity Framework Self Assessment Tool for the Leadership for the Digital Transformation domain.

Indicator	Indicator Description	Self-Assessment
Collaborative Vision Development	Key members of the school community, including those historically underserved, are actively engaged in collaboratively developing a clear, shared vision for deep technology integration that ensures equitable learning opportunities and outcomes for all learners, as evidenced by: ☐ **Artifacts of Engagement:** Records of workshops or meetings with key partners and members of the school community explicitly contributing to the development of the vision. ☐ **Documented Shared Vision:** A formal vision statement available publicly (e.g., website) and in physical spaces within the school. ☐ **Documented Feedback and Perspectives:** Surveys, feedback forms, or meeting minutes reflecting how an inclusive process of gathering and acting upon input from the district community influenced the vision development.	**Extent True:** ☐ Emerging ☐ Accelerating ☐ Innovating

Introducing the

Higher Education Digital Equity Framework



Higher education, like K-12, is critical to the nation's pursuit of digital equity and also in need of digital transformation. While it shares the domains and guiding principles of the K-12 Framework, it includes domain indicators that are exclusive to postsecondary institutions.

Why do we think including higher education in new, more comprehensive and holistic efforts to foster digital equity is important?

First and foremost, as we observed in the opening pages of this publication, higher education has digital equity challenges to meet. Divides in access to broadband internet and devices and in digital use opportunities exist for students of color across institutions and particularly in Minority-Serving Institutions, Historically Black Colleges and Universities, and Tribal Colleges and Universities. While we already outlined the profound impact these divides have on postsecondary students, we add here an additional effect that is particularly concerning. Artificial intelligence is likely to eliminate current entry-level jobs in which employers historically have developed the skills employees need for advancement. As a result, business and industry will want to ensure that higher education prepares graduates with the necessary digital skills for upper-level positions. It's urgent for higher education to address the digital divides that will deny access to these jobs to people of color.

Second, it makes no sense for students to exit K-12 after engaging in the powerful learning activities propelled by technology that we hope will unfold across school systems, and enter a system in which they revert to using technology only to conduct research, email their professors, and watch video lectures. McKinsey & Company reports that most higher education students view technologies deployed in college classrooms positively, including machine-powered teaching assistants (71%), group work (67%), AI adaptive course delivery (67%), and augmented/virtual reality (62%). Better news is that college faculty are even more enthusiastic than their students about learning technologies.

However, there are gaps in digital skills and use between tech- and non-tech-savvy higher education faculty. Deploying more sophisticated technologies across institutions will only increase if technical support and training becomes a priority. McKinsey observes that higher education institutions that "have successfully deployed new learning technologies provided technical support and training for students and guidance for faculty on how to adapt their course content and delivery."

Third, because most students spend 13 years in K-12, that system plays a singular role in the nation's pursuit of digital equity. High levels of digital skill and the capacity to use that skill to design or support powerful learning activities propelled by technology among K-12 faculty is essential. It is in postsecondary teacher preparation programs that college of education faculty can model effective, digitally informed pedagogies for future teachers, familiarize them with the technologies they will use as practitioners, and provide them with opportunities to rehearse their use, virtually and in field placement. Ultimately, these programs bear the responsibility for preparing educators to teach and lead in schools serving underrepresented populations.

Whether teachers are ready to hit the ground running with Digital Competency on day one of their first placement depends in large part on whether they learned digitally informed pedagogy from college faculty, had opportunities to practice the design of powerful learning activities using it, and were exposed to technologies they will use at the point of hire (including those specific to their disciplines and grade levels, digitized learning management systems, and software and platforms that allow them to address learner variability and engage students).

Fourth, though higher education aspires to a more expanded purpose, most students enroll in colleges and universities with the expectation that they will grow personally, learn new things, get good jobs and have success in them, and make money. Understandably, they want their coursework and degrees to provide pathways into careers that result in economic prosperity. Colleges and universities have been up to the task of developing cognitive skills for professions; however, the world of work has changed, becoming more digital. Though graduates may have the cognitive skills they need, they often do not have the digital skills now required by professions, which is in part why almost 50 percent of college graduates were underemployed pre-COVID. That figure holds fast in 2024. Colleges that bear down on preparing graduates for the digital age job market will lead the transformation of higher education, giving students a better chance to translate many years of paying tuition bills and later paying off hefty student loans into well-paying jobs that are consistent with their degree status.

Introducing the

State Digital Equity and Opportunity Framework

K-12 and higher education are the engines of digital transformation and equity. Absent strong state policy and action, however, they'll be the engines that never could. In other words, they will not be able to fully implement the domains without state efforts to help them get up and over what has become a mountain of digital inequity.

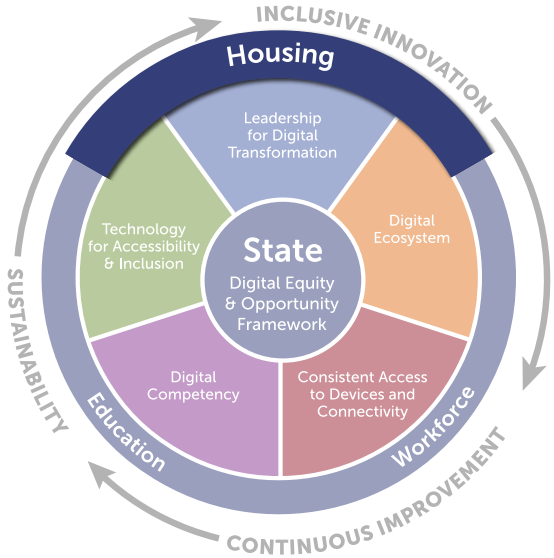
For the education sector, states (inclusive of territories and Tribal entities) will need to adopt policies and take action to promote equity through inclusive planning and assessment mechanisms for digital equity; the development of standards for technology integration in teaching and learning, and digital competencies for K-12 students and graduates of educator preparation programs; and budget for connectivity and devices—among other policies and initiatives.

While state support is critical to the pursuit of digital equity, two additional sectors are essential for learners at all levels to engage fully with and participate in the digital world.

Workforce: While we hope that in the coming years, school districts and higher education will play a substantial role in reducing digital equity gaps in access, use, and skills in communities of color, among populations experiencing poverty and in rural communities, we understand that some graduates will not have the digital skills they need to achieve full participation in the economy. Further, regardless of digital skill at the point of graduation from either K-12 or higher education, jobs will change as new technologies emerge. The workforce will be in constant need of digital upskilling, powerful devices, and connectivity.

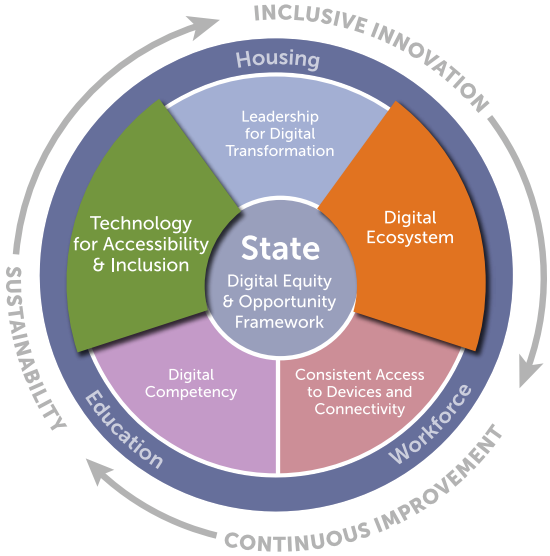
Underserved populations, therefore, will need equitable access to those opportunities and the physical infrastructure that enables that access. As a result, states will need to develop strategies to secure them both. Among potential policy solutions for this challenge may be the adoption of digital skill training and certification standards that ensure those completing job training programs have the skills they need to be successful in jobs requiring digital competencies. Another solution may be creating and funding remote learning and work hubs that provide high-speed internet, workforce training, and work stations for people living in public housing and rural areas. In hubs, they can learn new skills or take remote jobs, as so many privileged workers now do.

Housing: Both students and workers living in public housing and underserved and rural communities will need consistent access to the internet and devices, not only for full participation in the education sector but to maximize their job opportunities and access health and human services that increasingly have an online presence. To secure that access and help residents make the best use of available technologies, states will need to develop and adopt policy solutions. These solutions must address that those living in public housing and rural communities are less likely to have the digital skills, personal devices, and access to reliable high-speed internet. Solutions may include provisions for low-cost or free broadband service, policies that lead to certification of housing developments that meet high standards as "broadband-ready," or state funding for grants or subsidies to homeowners and landlords for assistive technology devices and modifications to residential properties.



These and other potential policy solutions for education, workforce, and housing sectors live in [The State Digital Equity and Opportunity Framework]. For an audience, it targets governors' and state broadband development offices; education agencies; workforce development boards or councils; more inclusive groups of stakeholders they may work with to design, implement and measure the impact of policy solutions; and, as appropriate, representatives of federal agencies, such as the Department of Housing and Urban Development and, because of its focus on rural communities, the Department of Agriculture.

The Framework has five domains. It imports three from the K-12 Framework (Leadership for Digital Transformation, Consistent Access to Devices and Connectivity, and Digital Competency), and it adds two new domains: **Digital Ecosystem** and **Technology for Accessibility and Inclusion**.

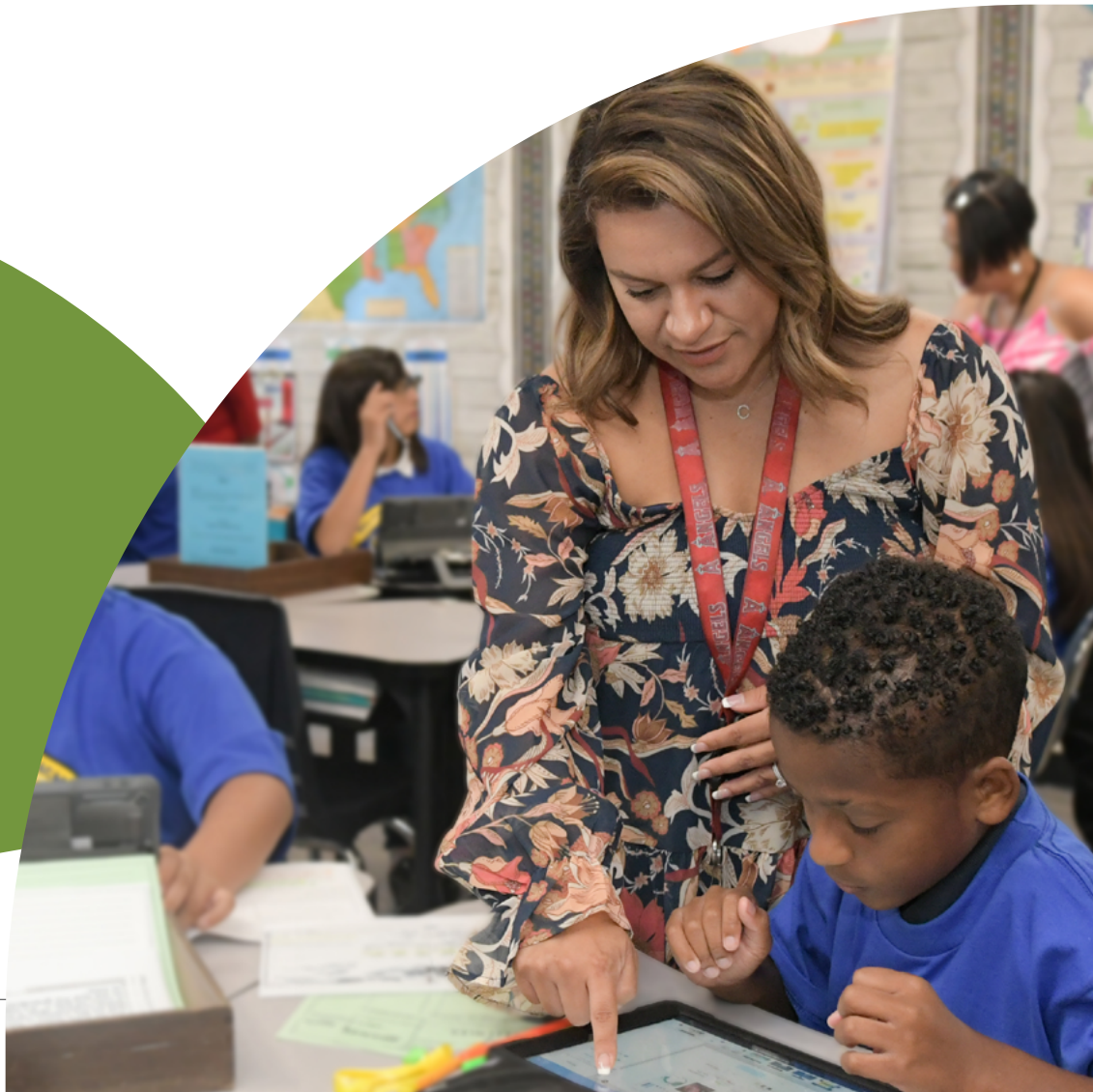


For each domain and for each sector, the Framework provides suggested objectives. The objectives spell out the specific policies and initiatives that states may adopt or undertake. The objectives are not intended as "one-size-fits-all" solutions, however. Rather, they are guideposts to hyper-focus states on rural communities, historically and systemically excluded communities, those experiencing poverty, and people who

require accessible technologies. Policies targeting digital equity may differ from state to state, in other words. However, the Framework establishes a structured, systemic approach to operationalize state efforts to set and meet objectives necessary for digital equity and economic mobility.

In addition, the Framework outlines "requirements," the tasks and initiatives that contractors and/or agencies must facilitate or complete to meet objectives. Their intent is to help states select vendors and/or agency employees who have demonstrated capacity and ability to successfully facilitate or complete similar tasks and initiatives. The Framework also includes metrics, the measures of success states will use to evaluate the effectiveness and impact of initiatives/tasks implemented to meet objectives. And, finally, the Framework identifies funding sources for the work. Although states' Broadband Development Offices (BDOs) already have leveraged the $42.45 billion in Broadband Equity, Access, and Deployment (BEAD) program dollars and monies from other federal grant programs for infrastructure projects, other funds remain available. The $1.44 billion State Digital Equity Capacity Grant Program and the $1.25 billion Digital Equity Competitive Grant Program, both with five-year life cycles, are still very much in play as of the publication of this paper in August 2024.

Our hope is that states will use these funds, and others that come available, to provide the access and opportunities rural, unserved, and underserved communities need for full participation in the digital age.



An Invitation to Turn the Frameworks and Associated Materials into Action

Digital equity is a complex, critical, all-hands-on-deck, long-term endeavor. WiFi towers, tablets, laptops, and other devices are just one piece of the puzzle; we must begin to think differently about how to use them, and what to do to ensure that happens. Specifically, we need to rethink what digital equity is and how to achieve it in domains that are less physical: those that address what humans know, can do, are able to design—and what they believe, and whom they include. Though physical infrastructure remains important to the pursuit of digital equity, it is just the floor. Our aim is to get closer to the ceiling by making the less visible digital equity essentials more real for people working on the frontlines.

The K-12 Digital Equity Framework and its associated materials, the Higher Education Digital Equity Framework and complementary tools, and the State Digital Equity and Opportunity Framework are designed to do just that. They constitute our effort to make the domains as vital to digital equity as tangible towers and tablets.

We hope schools and districts, higher education institutions, and states join our effort to turn what is now only on paper into visible action across K-20 and in the state policy-making apparatus. We invite you to come along with us as partners on a journey toward achieving digital equity.

...make the domains as vital to digital equity as tangible towers and tablets.

References

Ali, T., Chandra, S., Cherukumilli, S., Fazlullah, A., Galicia, E., Hill, H., McAlpine, N., McBride, L., Vaduganathan, N., Weiss, D., Wu, M. "Looking back, looking forward: What it will take to permanently close the K–12 digital divide." Common Sense Media. 2021. Accessed February 20, 2023.

Anderson, M., Vaverio, M., McClain, C. "How Teens Navigate School During COVID-19." Pew Research Center. June 2022.

Attwell, P. "The First and Second Digital Divides." American Sociological Association. July 2001.

Benton Institute for Broadband and Society. "How the Office of Minority Broadband Initiatives Connected Communities in 2023." May 2024.

Bergson-Shilcock, A. The New Landscape of Digital Literacy. National Skills Coalition. May 2020.

Bergson-Shilcock, A., Hodge, N. Taylor, R. "The Digital Skill Divide." National Skills Coalition. February 2023.

Brasca, C., Krishan S., Marya, V., Owen, K., Sirois, J. "How Technology is Shaping Learning in Higher Education." McKinsey & Company. June 2022.

Cole, J. "What's the Value of Higher Education." Yale Insights. April 2018.

Craig, R. "How Higher Ed Can Prepare Students for Today's Digital Jobs." Harvard Business Review. November 2021.

Day, J., Martinez, A. "Stem Majors Earned more Than Other STEM Workers." U.S. Census Bureau. June 2021.

Donadel, A. "How have higher ed's 7 wicked problems changed thanks to AI and other emerging trends?" University Business. January 2024

Education Superhighway. "2019 State of the States." Undated.

Gray, Lucinda, and Lewis, Laurie. "Use of Educational Technology for Instruction in Public Schools: 2019-2020." National Center for Education Statistics. November 2021.

Greenspan, A. "A Structural Change in the New Economy: Before the National Governors Association." Federal Reserve Board. June 2000.

Holland, Beth, and the Learning Accelerator Team. "From Digital Access to Digital Equity, Critical Barriers That Leaders and Policymakers Must Address to Move Beyond Boxes & Wires." Learning Accelerator. July 2022. Accessed February 20, 2023.

Midwestern Higher Education Compact. "The Digital Divide Among College Students: Lessons Learned From the COVID-19 Emergency Transition." January 2021.

National Skills Coalition. "Applying a racial equity lens to digital literacy: How workers of color are affected by digital skill gaps." December 2020.

UNESCO. "An Ed Tech Tragedy?" April 2020.

U.S. Bureau of Labor Statistics. "Employment in STEM occupations." September 2022.

U.S. Bureau of Labor Statistics. "Education pays, 2022." May 2023.

U.S. DEPARTMENT OF EDUCATION. "Advancing Digital Equity for All: Community-Based Recommendations for Developing Effective Digital Equity Plans to Close the Digital Divide and Enable Technology-Empowered Learning." September 2022.

U.S. Department of Education. "A Call to Action for Closing the Digital Access, Design, and Use Divides 2024 National Educational Technology Plan." January 2024.

U.S. Department of Education. "National Education Technology Plan." June 1996.

Weissman, Sara. More Than Half of Recent 4-Year College Grads Underemployed." Inside Higher Ed. February 2024.

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