



Inclusive Technology

in a 21st-Century Learning System

Table of Contents

- 1. Introduction**
- 3. Vision**
- 5. Design**
- 7. Procurement**
- 9. Use**
- 11. Continuous Improvement**
- 12. Conclusion**
- 13. Appendix**

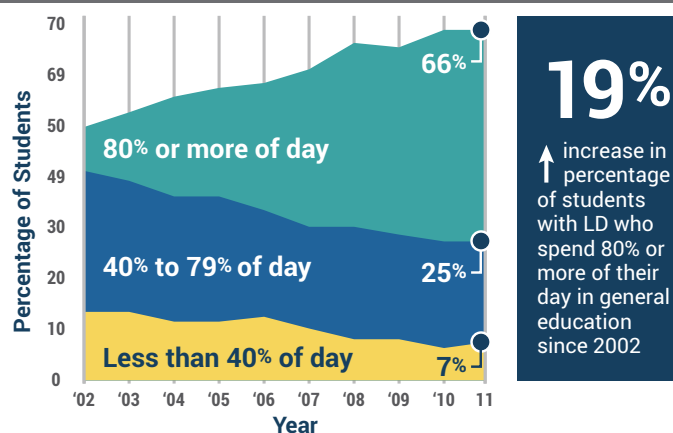


From how we work to how we engage in recreation or communicate with our friends and family, technology is a part of nearly every aspect of our daily lives—including the public education system.

As a nation, we spend over \$6 billion on educational technology (ed tech) annually. Each day, students, educators, and families leverage technology to deliver content, track progress, and communicate with each other. This brief by the National Center for Learning Disabilities (NCLD) and the associated collaboratively developed and audience specific resources present actions policy makers, vendors, educators, and advocates can take to leverage this investment for the betterment of all students, including the millions of students with disabilities. The synthesized learning presented in these resources is informed by a review of more than 100 published reports, articles, and reviews relating to ed tech and procurement issues. We have also incorporated individual interviews with leaders of 20 organizations that represented policy makers, vendors, disability rights advocates, and technology experts.

Students with disabilities are primarily affected by ed tech advances in the classroom in two ways. First, students with disabilities often use assistive technology (AT) to help them connect with otherwise inaccessible

Students With LD Spending Their School Day in General Education: 2002–2011



Source: IDEAdata.org. Education Environments by Disability, Ages 6–21, 2002–2011.

general education curriculum, as well as to maximize their learning strengths. Second, and perhaps more important, like their peers, they use technology more generally to create engaging educational experiences.

As schools have made strides in advancing inclusion, students with identified disabilities are spending more time in general education classrooms.¹ To effectively support all students—especially students with disabilities—it is critically important to consider accessibility and inclusivity as essential components whenever technology is conceived and used in classrooms or schools.

This framework for effective technology use identifies five interrelated components that lead to success for all students, including those with disabilities:

- A. Vision:** The vision guiding the purchase of a new ed tech product is equitable and inclusive of the needs of all learners developing the knowledge, skills, and dispositions essential to their success in college, career, and civic life.
- B. Design:** The design of the product is led by vendors who are grounded by a vision of inclusion and who staff their teams with individuals with expertise in designing products that meet a range of learning needs.
- C. Procurement:** Procurement is guided by a Request for Proposal (RFP) process that emphasizes accessibility, incorporates the perspectives of a variety of stakeholders, and includes input from individuals with expertise on serving students with disabilities in making the final decisions around procurement.

D. Use: The use of products is led by educators, leaders, case managers, paraprofessionals, and other staff who have expertise and who have received sufficient training to leverage technology for the inclusive benefit of all learners. These professionals are also responsible for leveraging ed tech products that are interoperable, that enable collaboration across staff roles, and that have sufficient ease of use for students.

E. Continuous Improvement:

A continuous improvement system is in place to monitor, evaluate, and learn from challenges and best practices in tech implementation among various student groups. There are established resources to translate lessons learned to guide both future procurement decisions and professional learning opportunities.



¹ For example, two-thirds of students with learning disabilities will spend more than 80 percent of their time in general education classrooms. For more information, see: Horowitz, S., Rawe, J., & Whittaker, M. (2017). *The state of learning disabilities: Understanding the 1 in 5*. New York, NY: National Center for Learning Disabilities.

Vision

Background: Technology can enhance learning for students with disabilities in multiple ways. These include facilitating greater accessibility to content; more streamlined communication between and among students, families, and educators; and increased engagement and more personalized educational experiences.

Challenge: The reality, however, is that under each of these functions, implementation of technology can lead to learning experiences that are accessible or inaccessible, and that are supportive of learning that is rigorous or rote. As CAST cofounders, Anne Meyer and David Rose, note, “Despite their promise ... technologies still are used largely to support old goals, methods, and assessments that shut out students with disabilities from the general education curriculum.”²

Solution: A positive vision of ed tech implementation should support rigorous, accessible learning opportunities for all students. What does this look like in practice? Recent research on both the type of learning students need to succeed in the 21st century and the best practices around integration of technology in the classroom converge: Under the right circumstances, simulations, applications, and more interactive forms of technology—in which students dynamically engage with ed tech—positively affect student outcomes. More passive forms of technology have no effect or negatively affect those outcomes.³ In other words, students, including students with

disabilities, can no longer passively reflect content. Under a positive vision of learning, students have to be able to actively use their learning to analyze, synthesize, and create new information. When technology is grounded in this vision of learning, students are more engaged and more successful.

General Guiding Questions Around Vision



Is your vision inclusive of all students' needs?

- Is the vision driving your work inclusive of all students attaining the full range of knowledge, skills, and dispositions essential for 21st-century success, or does it perpetuate different tracks of learning for different students?
- Are students with disabilities considered at the outset of initiatives—including resourcing initiatives—or is it likely that the initiatives will need to be retrofitted on the back end?

Implementation Considerations: A vision that leads to the implementation and integration of technology that helps all learners in districts and states focuses on:

- **Accessibility:** One's disability should not preclude participation, progress with, and use of technology.⁴ Educational content delivered in print and through physical interaction can pose different challenges

² Meyer, A., & Rose, D. (2005). *The future is in the margins: The role of technology and disability in educational reform*. In D. H. Rose, A. Meyer, & C. Hitchcock (Eds.), *The universally designed classroom: Accessible curriculum and digital technologies* (pp. 13–35). Cambridge, MA: Harvard Education Press.

Marino, M. (2009). Understanding how adolescents with reading difficulties utilize technology-based tools. *Exceptionality*, 17, 88–102.

³ Darling-Hammond, L., Zieleszinski, M., & Goldman, S. (2014). *Using technology to support at-risk learning*. Palo Alto, CA: SCOPE.

⁴ For more information around quality indicators for accessibility, see: <http://aem.cast.org/policies/quality-indicators-provision-aem.html#W6zR2xNKiF1>

for students with disabilities, and the same is true of content delivered online and through technology. For example, while some accessibility features, such as text-to-speech functionality, can accommodate students with vision impairments, the same features may cause challenges for students with ADHD and executive functioning issues. The latter may struggle to focus on or organize information because the ed tech tool presents too many stimuli for them to effectively focus.⁵ When technology is accessible, it accounts for the needs and strengths of all learners regardless of disability status.

- **Functionality:** Tools and technology platforms must be technically useful (be physically accessible to a variety of different learners) and pedagogically rigorous (allow those learners to access higher levels of learning). Ed tech tools that enable students to focus on and organize deeper content and skills are most effective at improving student achievement.⁶
- **Adaptability:** Technology should be adaptable for both learners and educators. Different learners, regardless of disability, should be able to access

and adapt the presentation of contents of the ed tech tool to meet their specific needs. Educators must be able to flexibly and effectively use that technology to meet the variety of learning needs in their classrooms.

- **Feasibility:** Implementation of the ed tech tool or program must be feasible for all learners, meaning the institution's physical capacity and technical knowledge can accommodate the complex needs of students with disabilities. Research highlights that higher levels of learning that are facilitated by technology also require greater investments of infrastructure and bandwidth.⁷ This need for capacity could be further accentuated by the more complex needs of students with disabilities who may require additional specialized supports and accommodations to access the ed tech tool.⁸ Technology implementation that accounts for feasibility means that the features of that technology can be implemented for all students given the bandwidth available in the region the ed tech is being implemented.

5 Ellis, K. (2011). Embracing learners with disability: Web 2.0, access and insight. *Telecommunications Journal of Australia*. 61(2). 30.1–30.2.

6 Bottge, B., & Hasselbring, T. (1993). A comparison of two approaches for teaching complex, authentic mathematics problems to adolescents in remedial math classes. *Exceptional Children*, 59(6), 556–566.

7 Darling-Hammond et al. (2014).

8 For example, if a student with a disability has to use multiple devices to access online content, but the school is in a low-bandwidth capacity area, then the potential gains of those devices can be rendered moot.

Design

Background: If ed tech products are not designed with students with disabilities in mind, rather than close opportunity gaps, we may actually exacerbate and widen them. Though accessibility is raised as a fundamental issue in the National Education Technology Plan⁹ and ed tech providers have made significant progress in this arena, more work remains in ensuring the needs of students with disabilities are fully incorporated into product design and prototyping.

Challenge: Various evaluations of ed tech products against principles of Universal Design for Learning (UDL)¹⁰ have shown that products often fall short, especially in supporting students with different disabilities as they engage with educational content.¹¹ Other potential issues with accessibility include text not being readable by students with vision impairments or not easily organized for students with executive functioning issues.¹²

One reason suggested to explain these issues is that as products achieve wider distribution, redesigns that increase their popularity ignore accessibility features.¹³ Some suggest a more powerful factor: Much as is the case with the broader public, many programmers designing products may not be as familiar with issues arising for individuals with invisible disabilities such as

General Guiding Questions Around Design



Does the vendor team have the expertise to ensure the product can accommodate the needs of a range of learners?

- Does the vendor team have experts to weigh in on the full range of visible and invisible disabilities—physical disabilities as well as learning and attention issues?
- Does the team’s expertise address both technical and pedagogical accessibility?

learning disabilities and autism. They may not conceive or design products with these learners in mind.¹⁴

Solution: A positive design process is led by ed tech developers who affirm that accessible products are not just a benefit for students with disabilities. Their peers also benefit from accessing information through different means. These vendors achieve usability and accessibility goals by considering the needs of individuals with a range of disabilities at each stage of the development process—from conception to development and marketing.

9 See: U.S. Department of Education. (2017). *Re-imagining the role of technology in education*. Washington, DC: Office of Educational Technology. <https://tech.ed.gov/files/2017/01/NETP17.pdf>

10 UDL is a set of principles for curriculum development that give every student the opportunity to learn. UDL addresses how information is presented (representation), how students demonstrate what they know (expression), and how students interact and engage with the material (engagement).

11 Wehmeyer, M., Palmer, S., Smith, S., Davies, D., & Stock, S. (2008). *The efficacy of technology use by people with intellectual disability: A single-subject design meta-analysis*. *Journal of Special Education Technology*, 23(3), 21–30.

12 Boudreau, D. (2011). Social media accessibility: Where are we today? [PowerPoint slides]. Retrieved from <http://www.denisboudreau.org/presentations/2011/a11yCampTO/#27>. Pirani, Z., Sasikumar, M. (2014). Accessibility issues in learning management systems for learning disabled: A survey. In: Thampi, S., Abraham, A., Pal, S., Rodriguez, J. (eds) *Recent advances in intelligent informatics*. Advances in Intelligent Systems and Computing, 235. Springer, Cham.

Wehmeyer et al. (2008).

13 Ellis. (2011).

14 Elmer, P. (2017, December 8). Personal communication.

Implementation Considerations: A design process that fully includes the needs of students with disabilities abides by the following considerations:

- **Alignment:** Ed tech products should be aligned both to relevant legal guidelines to protect students' civil rights,¹⁵ and to relevant best practice standards in the field (including Section 508 of the Rehabilitation Act, the Accessible Education Materials Quality Indicators, Web Content Accessibility Guidelines 2.0, and principles of UDL) to ensure that learning is rigorous and accessible.¹⁶
- **Expertise:** Vendors developing ed tech products should include individuals who have expertise on the needs of different types of learners, including English language learners and students with disabilities. Additionally, during product development, vendors should ensure that products are user-tested by a diverse set of learners before going to market.
- **External Vetting:** States can set up external review processes, such as those in place in Louisiana and Utah, where independent commissions evaluate tech products that receive state contracts for their commitment to accessibility and rigor. These states then provide that information to local school districts that are making procurement decisions.¹⁷ Such a mechanism could inspire longer-term collaborative partnerships between vendors and their consumers (states, districts, and schools) in driving an iterative process of feedback and improvement, ensuring products more effectively serve all students over time.



¹⁵ These include the Individuals with Disabilities Education Act, Section 508 of the Rehabilitation Act, and the Technology-Related Assistance Act, all of which provide legal safeguards for accommodations for students with disabilities. For a deeper discussion, see: Crossland, A., Gray, T., Reynolds, J., Wellington, D., & Zhou, A. (2016). *Digital accessibility toolkit: What education leaders need to know*. Washington, DC: American Institutes for Research. http://www.ctdinstitute.org/sites/default/files/file_attachments/AccessibilityToolkit-508_FINAL_100616.pdf

¹⁶ For more information around inclusive design, see: Designing for accessibility with POUR. National Center on Accessible Educational Materials. <http://aem.cast.org/creating/designing-for-accessibility-pour.html#.XJPWvChKiUm>

¹⁷ For a deeper discussion, see: Jones, R., & Fox, C. (2017). *State procurement case studies: Spotlight on digital materials acquisition*. Washington, DC: State Educational Technology Directors Association (SETDA).

Procurement

Background: Even though accessible ed tech products are available, many schools, districts, and states face obstacles in identifying and securing accessible technology at scale to better support their students. When schools create an inclusive procurement process—one that fully considers the implications of products on all learners rather than on the theoretical “average” learner—they not only help head off potential legal issues, but also take the steps necessary to create equitable and meaningful learning opportunities for all students, with and without disabilities.

Challenge: There are several challenges to fully embracing an inclusive procurement process. From a process standpoint, procurement can be perceived as a convoluted, legal process, taking different paths based on the rules, regulations, and norms within a specific school, district, or state. Considerations around accessibility can add another layer of complexity to that decision-making process as each entity may have different standards for accessibility as well as different levels of knowledge and skills in interpreting and implementing guidelines and best practices around inclusive ed tech deployment.

Solution: Nevertheless, schools, districts, and states that embrace physical and pedagogical accessibility—including principles of UDL—at the outset have better outcomes for all students. Evaluations of products and frameworks that abide by principles of UDL show that they not only improve learning outcomes for students with disabilities, but also for their peers without

disabilities.¹⁸ This affirms the principle that all students, not just those with disabilities, bring exceptionalities to the learning environment that benefit from more customizable products.¹⁹

General Guiding Questions Around Procurement



Does the purchaser clearly communicate the required critical accessibility needs and have the capacity to validate the vendor's success in achieving accessibility?

- Does the RFP communicate accessibility to the vendor as a key value and precursor to a favorable contract score?
- Have different stakeholders, including educators, parents, and others with expertise on disabilities, been engaged in informing the contract and technology partnership?
- Does the individual or team making the final procurement decision have the necessary expertise to determine whether the vendor has met the inclusive intent and spirit of goals around inclusivity?

Implementation Considerations: Purchasing products that have strong accessibility features will ensure the learning process is more inclusive of and engaging for all students. Key considerations that collectively contribute to pedagogically inclusive design include:

18 Al-Azawei, A., Serenelli, F., & Lundqvist, K. (2016). Universal design for learning (UDL): A content analysis of peer reviewed journals from 2012 to 2015. *Journal of the Scholarship of Teaching and Learning*, 16(3), 39–56.

19 For deeper discussion see: Rose, T. (2016). *The end of average: How we succeed in a world that values sameness*. San Francisco, CA, HarperOne.



- **Broader Stakeholder Engagement:** To procure products that are accessible, schools, districts, and states must ensure significant stakeholder engagement. This must include having a process to get input from students with disabilities and from educators and parents. There may often be a gap between what educators identify as ways technology will address students' needs and how students identify ways that technology addresses those needs.²⁰ Intentional stakeholder engagement can lead to greater shared ownership of procurement decisions, more cost-efficient investments, and smoother implementation, abiding by the principle, "nothing about us without us."²¹
- **Clear Requirements:** An essential step to ensuring that ed tech products meet the needs of all learners is to make accessibility an explicit provision of contracts and RFPs (see Appendix for example). Requiring accessibility in contracts will reward vendors who are leveraging investments in making their products accessible. It will also ensure those initial investments more profitable and enable companies to further leverage initial R&D to continue to make future products are "born accessible."
- **Expert-Informed Decision-Making:** Once the stakeholders have weighed in and the contract has been developed, the final decision around procurement must also be informed by individuals with expertise around meeting the needs of students with disabilities. If, for example, the sole final decision-maker in entering a contract is a superintendent or other administrator, that individual may not have the requisite knowledge about the varying needs of students with disabilities or be able to adequately assess whether the vendor has met accessibility standards. It is crucial to include disability experts within the decision-making team and within the process of evaluating contracts and making procurement decisions.

20 Fichten, C., Ferraro, V., Asuncion, J., Chwojka, C., Barile, M., Nguyen, M., Klomp, R., & Wolforth, J. (2009). Disabilities and e-learning problems and solutions: An exploratory study. *Educational Technology & Society*, 12(4), 241–256.

21 For deeper discussion see: Cooper, M. & Heath, A. (2009). Access for all to eLearning. In: Méndez-Vilas, A.; Solano Martín, A.; Mesa González, J. A. and Mesa González, J. eds. *Research Reflections and Innovations in Integrating ICT in Education*. Badajoz, Spain: FORMATEX. 1139–1143.

Use

Background: Transforming education—specifically changing pedagogy—isn't just about having a strong vision and well-designed and purchased products. It's also a matter of how those products are used. School professionals using the technology must have the capacity to leverage the product toward its intended use for *all* learners.

Challenges: Several obstacles can impede this progress. First, teacher and administrator preparation programs often fail to provide training and ongoing coaching to help educators develop the skills they need to effectively implement ed tech to support student learning.²² This means that educators are often “basically on their own ... finding that the software that they have purchased is not adaptable, does not teach what it purports to teach, or does not support what is occurring in the classroom.”²³ When it comes to diverse learners, technology in this case is often not calibrated to instruction and vice versa.²⁴ The accessibility of the technology can also be impacted by how the new product interacts with the existing ed tech tools deployed. Accessibility features of the product should be compatible when combined within the entire system and when used at home.

Solution: Resolving these potential issues demands that schools, districts, and states fully consider how students, parents, and educators perceive the new technology and the extent to which they're prepared to use the technology effectively.

Implementation Considerations: Two key considerations help schools, districts, and states accomplish this goal, the first dealing with issues of human capacity, and the latter issues of systems capacity:

- **Training Educators:** Educators need more than general skills to integrate technology into their lessons in ways that support higher levels of learning. They also need to develop specific skills through targeted and focused professional development to facilitate learning for diverse learners. When working with students who have disabilities, specific skills might include identifying the disability, calibrating instructional and IEP goals with relevant tech tools, monitoring progress, selecting appropriate AT, providing accommodations throughout the use of ed tech as needed, intervening

General Guiding Questions Around Use



Do educators and other personnel have the capacity to use the product to provide the highest quality learning for all students?

- Have staff been trained to effectively use a specific product to educate all students?
- Do the compatibility and interoperability features of one product work well with features of other products?

22 See: LaFrance, J., & Beck, D. (2014). Mapping the terrain: Educational leadership field experiences in K–12 virtual schools. *Educational Administration Quarterly*, 50(1), 160–189.

See: Basham, J., Stahl, S., Ortiz, K., Rice, M., & Smith, S. (2015). *Equity matters: Digital & online learning for students with disabilities*. Lawrence, KS: Center on Online Learning and Students with Disabilities.

23 Boone, R., & Higgins, K. (2007). The role of instructional design in assistive technology research and development. *Reading Research Quarterly*, 42(1), 135–140.

24 Marino. (2009). Ibid, Boone & Higgins. (2007).

with students with weak online reading strategies, communicating lesson requirements to different learners, and guiding parents in supporting those learners.²⁵

- **Aligning Systems:** A school's use of and reliance

on a specific ed tech product must reflect how well that product's accessibility features align with the accessibility features of other devices and platforms used in the school and in students' homes.²⁶ In other words, the different ed tech being used must be interoperable.



25 See: Ciullo, S. and Reutebuch, C. (2013). Computer-based graphic organizers for students with LD: A systematic review of literature. *Learning Disabilities Research & Practice*, 28(4). 196–210.

See: Dickerson, J., & Coleman, H. (2013). Using Bloom's taxonomy to help guide technology decision-making in schools. *Teacher Education Journal of South Carolina*, 6. 94–101.

See: Rice, M., & Carter, Jr., R. (2015). When we talk about compliance, it's because we lived it: Online educators' roles in supporting students with disabilities. *Online Learning*, 19(5).

26 Guglielman, E. (2010). E-learning and disability: Accessibility as a contribute to inclusion. In published proceedings of *Fifth Doctoral Consortium on the European Conference on Technology Enhanced Learning*, 31–36.

Continuous Improvement

Background: Ensuring the success of students with disabilities and the long-term success of an ed tech initiative each require sustainable planning and robust evaluation. Although major technology investments (such as 1:1 device programs where there is at least one device for every student) have a substantial up-front cost and can set the foundation for a school's ed tech program more broadly, decision-makers must also account for future ongoing costs.

Challenge: Devices break and must be replaced or updated regularly. The capabilities of tech products evolve and improve with time. And schools, districts, and states adopt new education goals and strategies. The Software and Information Industry Association (SIIA) advises ed tech users to account for a 20 percent annual maintenance of effort cost in adopting products.²⁷ When schools do not consider and plan for those additional investments, an ed tech initiative might be successful in the short term but impossible to maintain in the long term. This inevitably leads to frustrated educators who experience innovation fatigue. Additionally, beyond the cost of replacing physical devices, there are also ongoing costs to keep current educators up to date and sharp in their skills (all the while onboarding new educators). Finally, just because a specific initiative is successful for one group of students does not mean it will be successful for all groups.

Solutions: Fortunately, there are a number of examples of schools and districts setting up long-term, sustainable ed tech implementation efforts.

Through its Edtech Pilot Framework, Digital Promise has developed an eight-step process for piloting, evaluating, and investing in ed tech products. This process includes identifying needs, planning the pilot, training staff, collecting and analyzing data, and using that information to inform current and future decisions.²⁸ Similarly, another framework, the Future Ready Schools 5 Step Planning Process, helps districts create an inclusive leadership team, take a district self-assessment, gather stakeholder input, implement the ed tech initiative, and review and reflect on progress. Leveraging these two and other similar frameworks can ensure more thoughtful consideration and sustainability of efforts for all students.

General Guiding Questions Around

Continuous Improvement



Is there a process to learn both from best practices and from challenges, and are there resources to act on that learning?

- Is there an evaluation and monitoring system that gauges success of the ed tech products for different student subgroups?
- Is there a dedicated, ongoing budget to support continued investment and improvement of ed tech products?

Implementation Considerations:

Sustainability and long-term investment can be addressed through:

²⁷ Collins, S., & Levy, P. (2013). *Guide to the use of open educational resources in K–12 and postsecondary education*. Washington, DC: Software and Information Industry Association.

²⁸ Digital Promise. (2016, November 16). The ed-tech pilot framework: An eight-step process for evaluating products [Blog post]. Retrieved from <http://digitalpromise.org/2016/11/16/the-ed-tech-pilot-framework-an-eight-step-process-for-evaluating-products>



- **Dedicated Resources:** It is not only ed tech tools that may need dedicated resources to support accommodations and accessibility—those tools will need updates and those updates must also account for accessibility. Schools, districts, and states making investments must exercise budgetary foresight to ensure the products they use are accessible in the present and remain accessible in the future.
- **Ongoing Evaluation and Improvement Systems:** An ongoing monitoring and evaluation system is necessary to determine whether tools are effectively serving different learners in various circumstances. Only when such a system is present can we ensure that future ed tech investments will actually reduce rather than expand opportunity gaps.

Conclusion

Advances in science and technology can usher in a new era in the disability rights movement, enabling students with visual or auditory impairments to perceive content previously inaccessible to them, those with physical disabilities to have greater mobility, and those with learning and attention issues to process and access content in ways that could only be imagined just a few years ago. While technology can greatly improve learning opportunities and provide meaningful experiences for diverse learners when used thoughtfully, it alone cannot guarantee equity or accessibility. Rather, when implemented poorly, it could actually widen the opportunity gaps between individuals with disabilities and their peers, reducing access rather than expanding

it. It can stigmatize and amplify weaknesses rather than build on strengths.

The line between success and failure in such efforts is grounded in proactiveness and intentionality. The purchasers of technology must start with an inclusive and rigorous vision and reflect that vision throughout the procurement process. The vendors must address accessibility features at the outset. The users must be trained in using technology. And actors across the system must continuously learn from mistakes and best practices in procuring new technology. Whether or not we have the will to be intentional and proactive with our investments will determine whether we see a new era of closing or widening opportunity gaps.

Appendix: Sample Contract Language

Language courtesy of ATAP. Information and Communication Technology (ICT) Accessibility Compliance: [Cite state and federal statutory and regulatory references] requires information and communication technology be accessible for individuals with disabilities. All products provided by the contractor shall comply with the Web Content Accessibility Guidelines version 2.0 (WCAG 2.0) level AA as established by the World Wide Web Consortium (W3C). Contractors shall provide a description and assurance of conformance to the WCAG 2.0 AA guidelines through completion of a Voluntary Product Accessibility Template (VPAT) or other comparable document (see examples).

The offeror shall also ensure compatibility with commonly used assistive technology including screen reading software, screen magnification software, and voice recognition software such as [typical list includes JAWS, Window Eyes, ZoomText, MAGic, and Dragon Naturally Speaking.] The offeror shall provide a description of the benchmark testing used to evaluate usability with these products on various platforms and the qualifications of the expert testers.

The offeror shall identify an accessibility coordinator who will be responsible for ensuring conformance with ICT accessibility standards during product development and in the final version deployment and shall provide a description of the accessibility coordinator's experience and expertise in developing/customizing products to conform with ICT accessibility standards.

The contractor shall promptly respond to any complaint brought to its attention regarding accessibility of the products provided hereunder that were specified in the contractor's awarded bid response. The contractor shall resolve such complaints by bringing the product into compliance with the applicable accessibility standards at no additional cost to the State.

 <p>(A) VISION: High expectations for all guide investment.</p>	 <p>(B) DESIGN: Disability experts are fully included in the design of products.</p>	 <p>(C) PROCUREMENT: Needs of all learners inform decision-making.</p>	 <p>(D) USE: Practitioners are empowered to effectively use products to serve all learners.</p>	 <p>(E) CONTINUOUS IMPROVEMENT: There is funding to expand and sustain the benefits of the tech investment for all learners.</p>
<p>1. There is a clear expectation that technology is a tool to support all learners in acquiring the knowledge, skills, and dispositions to succeed in college, career, and civic life.</p> <p>2. There is sufficient investment to ensure all learners benefit from the use of technology that is adaptable, functional, and feasible—knowing that more specialized products that address the needs of students with disabilities may require additional investments.</p>	<p>3. Vendors designing products must assemble a team with diverse expertise—not only programmers, but experts in learning theory and experts in disabilities, including learning and attention issues. Sufficient user feedback should be built into the process from a variety of different users to ensure products abide by principles of universal design.</p>	<p>4. State and local RFPs and procurement contracts include language specifying preference for products that are universally designed for all learners.</p> <p>5. Sufficient stakeholder engagement ensures key audiences, including those in the disability community, are provided opportunities to weigh in on procurement decisions.</p> <p>6. Districts and state teams evaluating and scoring contracts include sufficient expertise around disabilities, the legal rights of students with disabilities, and the practical needs of those students.</p>	<p>7. Teachers, leaders, paraprofessionals, counselors, and other staff are provided the necessary time and training to leverage technology as a tool (along with other tools and experiences students have access to) to support each learner, including those with disabilities, with richer, deeper learning outcomes.</p> <p>8. There is interoperability between tech tools and platforms to ensure accessible learning experiences for all learners.</p>	<p>9. To account for new developments and opportunities in technology as well as staff turnover and capacity to leverage existing technology, there is a plan in place to support ongoing training and funding.</p> <p>10. There is a system and staff dedicated to monitoring, evaluating, and continuously learning which tools benefit which learners under which circumstances, and these determinations are used to guide future investments (go back to step 1).</p>

To see what the implications of this framework are for local decision makers,
see the brief, *“Inclusive Technology in a Modern Learning Environment:
A Collaborative Local Action Primer”*



To see what the implications of this framework for state and federal policy,
see the brief, *“Inclusive Technology in a Modern Learning Environment:
Student Experiences and Four Key Federal Laws”*

