

The logo for the Digital Resilience in the American Workforce (DRAW) initiative, featuring the word "DRAW" in a stylized, white, outlined font.A photograph of two women sitting at a desk in an office, engaged in a discussion. One woman is holding a pen and pointing towards a laptop screen. The other woman is looking at the screen. The background shows office equipment and a blurred office environment.

# Practitioner Professional Development: DRAW Detailed Findings and Discussion

With the urgent need for adult digital skill development as a backdrop, the Digital Resilience in the American Workforce (DRAW) initiative, funded by the U.S. Department of Education's Office of Career, Technical, and Adult Education (OCTAE), conducted a wide-ranging landscape scan to identify effective approaches and existing resources supporting digital skills development in adult education. The scan also identified current efforts to advance

digital access and digital equity; useful skill definitions, frameworks, and assessments; and practitioner professional development opportunities. Learnings from the scan are summarized in the report [\*Digital Resilience in the American Workforce: Findings From a National Scan on Adult Digital Literacy Instruction\*](#). This deep dive explores issues related to professional development of instructors.



**Disclaimer:** This report was created by Jobs for the Future and World Education and as part of the DRAW project funded by the U.S. Department of Education's Office of Career and Technical Education, Division of Adult Education and Literacy, under contract GS10F0094X. The views expressed by the project do not necessarily represent the policy of the Department of Education, and its contents should not be considered an endorsement by the federal government or the funding agency.

# Contents

<b>Introduction</b> .....	<b>2</b>
<b>Professional Development: What the Research Says</b> .....	<b>3</b>
<b>Effective Practices in Teacher Professional Development</b> .....	<b>4</b>
<b>Professional Development Content</b> .....	<b>8</b>
<b>Frameworks to Support Planned Technology Integration</b> .....	<b>10</b>
<b>Professional Development for Leaders</b> .....	<b>11</b>
<b>Challenges and Opportunities in Professional Development</b> .....	<b>12</b>
<b>Conclusion</b> .....	<b>15</b>

## Introduction

---

Digital skills development needs to be modeled and integrated in the classroom for adults to be successful in using technology independently and with confidence. This requires extensive planning and training for educators. In our national landscape scan for the Digital Resilience in the American Workforce (DRAW) initiative, professional development (PD) focused on instructors’ digital skills and resilience development was consistently identified as a top need and request.<sup>2</sup>

**“Professional development policies, equipment, and accountability are lagging behind the reality of what the workplace requires.”**

— *Jaime Fall,*  
*Director, UpSkill America*<sup>1</sup>

Adult education leaders must look critically at the digital skills of their workforce and invest in effective PD practices that enable practitioners to build their own digital resilience so that they have the capacity to integrate digital skills instruction in content. Research supports the need of adult educators to have strong digital literacy skills, an understanding of how digital platforms work, and the ability to effectively integrate technology in teaching and learning. It is also important for teachers to have high digital literacy self-efficacy—an individual’s belief in choosing technological tools in accordance with their goals, knowing the features of the tools, and organizing, developing, and using them.<sup>3</sup>

**“States need to provide digital skills integration guidance, especially given the need for differentiation to support diverse learners, in addition to PD on how to use technologies.”**

— Corina Kasior, director of educational technology, Arizona Department of Education<sup>5</sup>

When teachers are at a disadvantage, or project their fears onto students, their learners will continue to struggle.<sup>4</sup>

The landscape scan identified many professional development efforts, including mandatory and voluntary, in person and hybrid, and fixed and self-directed training opportunities. The full crowdsourced compilation, including published resources, can be downloaded [here](#).

## Professional Development:

### What the Research Says

Instructors need PD targeted to meet their needs, and, like learners, they need the flexibility of one-on-one help and the option of asynchronous and synchronous learning opportunities.

**Research** on professional development provides valuable recommendations, many of which emphasize **relevance, duration, and collaboration**. For example, the International Society for Technology in Education’s (ISTE) SkillRise framework<sup>6</sup> recommends:



Involving teachers as stakeholders in the PD and training process



Chunking content into short learning segments



Offering feedback throughout learning activities



Providing ample opportunities for participants to use technology to engage with their peers

Other research-based recommendations include PD that builds self-direction, metacognition, and other deeper learning (or 21st century skill) capacities. These have been shown to contribute to readiness for online learning for teachers.<sup>7</sup> A ProLiteracy research brief, “Digital Literacy and

Technology Integration in Adult Basic Skills Education: A Review of the Research,”<sup>8</sup> identified similar themes (e.g., relevance and alignment with program goals) in effective PD.<sup>9</sup>

Darling-Hammond’s well-articulated and researched PD framework is based on a meta-analysis of 35 rigorous studies that examined the link between PD, instructional practice, and student outcomes.<sup>10</sup> The framework calls for PD that integrates the following characteristics:

- **Contextualized content:** PD is contextualized into discipline-specific curricula so teachers can see how recommended strategies can work in different academic subjects.
- **Active learning:** Teachers make use of resources and strategies introduced in PD to support their own learning.
- **Collaboration:** Teachers have time and activities to prompt learning through idea sharing and collaboration.
- **Models:** Teachers can access and practice using models to help them see examples and understand recommended strategies in practice.
- **Coaching:** Coaches or mentors share expertise in just-in-time and personalized approaches.
- **Feedback and reflection:** Teachers have ample feedback on their instruction and structure and time to process it.
- **Sustained duration:** Change in instructional practice generally does not happen after one webinar. Teachers have ample opportunities over time to learn, implement, and refine new ideas.

## Effective Practices in Teacher PD

---

**“To move the field of adult education towards fostering digital resilience, it will be important to provide training or find other ways to help instructors value digital skills integration and digital resilience.”**

— *Glenda Rose, adult education director, Community Action, Inc. of Central Texas*<sup>11</sup>

## Socioemotional Learning and Self-Efficacy for Instructors

Like all adult learners, socioemotional learning and self-efficacy are vital for educators. Building teacher digital skills and levels of comfort around integrating digital skills begins with

understanding the skills and mindsets practitioners bring to the table.<sup>13</sup> Similarly, the SkillRise framework<sup>14</sup> cautions leaders not to underestimate resistance to change and indicates the key to successful technology integration begins with understanding staff (learner-worker) skills and attitudes around technology.

Practitioners learn from and take their cues from leaders. Leadership needs to show teachers that it is OK for instructors not to have all the answers and that instructors and students can “learn together, grow together.”<sup>15</sup> Some teachers may need support to develop and model digital resilience—and they also need to feel comfortable sharing when they do not know something.<sup>16</sup>

**“Now is the prime opportunity to model and show practitioners how to handle stresses and challenges, which strengthens self-regulation and helps to develop efficacy and digital resilience.”**

— *Ginette Chandler, director of professional development services, New Hampshire Adult Education*<sup>12</sup>

## Diverse Needs of Practitioners and Their Contexts

**“Training and resources need to be created in a way that is easily understood, readily accessible, and searchable by content and level to minimize practitioner competing priorities.”**

— *Sarah Cacicio, director, adult learning, Digital Promise*<sup>17</sup>

**Examples of how PD leaders are creating access to PD customized to practitioner context include the following:**

- Understanding that learner-workers need to feel supported, heard, and connected, the **Texas Center for the Advancement of Literacy and Learning (TCALL)** offers lunchtime learning opportunities through its Tech and Tell training series. These sessions provide live demonstrations of tech tools and websites, helping educators keep their classrooms organized, their students engaged, and their digital skills up to date.<sup>18</sup>
- **Kentucky Skills U** promotes efficacy by offering targeted PD opportunities to educators, students, and employers, including a professional learning bootcamp series that supports practitioners with foundational best practices for various topics and offers instructional resources to support mobile-friendly content.<sup>19</sup>

- **Michigan Adult Education Professional Development** offers extensive, searchable self-paced training opportunities, community of practice events, and career navigator series to support practitioner skill development.<sup>20</sup>
- The **Massachusetts Adult Education Professional Development System** created a self-assessment form that helps practitioners reflect on their comfort levels regarding their ability to describe digital literacy skills.<sup>21</sup>
- To support practitioner skill development and guidance, the **Los Angeles Unified School District Adult Division** developed mandatory [Keep Teaching \(During School Closure\)](#) PD training that includes a mix of self-paced training and access to classroom resources.<sup>22</sup>
- **Tyson Foods** is investing deeply in the professional development of its corporate trainers involved with its Upward Academy [Digital Advancement and Resiliency at Tyson](#) initiative, which supports the digital inclusion and digital skill development of its diverse, largely immigrant, frontline workforce.

## Assessment and Validation of Teacher-Practitioner Skills

Effective PD practices begin with understanding the skill sets and attitudes practitioners have about technology.<sup>23</sup> During the COVID-19 pandemic, some adult education programs began using assessments to evaluate incoming educators' digital skills. This practice can help programs identify PD needs.

Beyond assessment, many DRAW Practitioner Questionnaire respondents expressed the need for badges and other credentials that validate and signal instructors' digital skills and resilience. External validation and signaling of competencies can support development of digital skills, demonstrate the experience and knowledge of educators, motivate teachers, and serve as an incentive for PD.

### Current opportunities for skills validation include:

- **ISTE** offers a rigorous, competency-based, device-neutral certification to support educators with rethinking and redesigning learning. Participants are challenged to deepen technology integration skills while promoting student agency. Participants are required to submit a competency-based portfolio that showcases the skills they've acquired before earning the internationally recognized ISTE Certified Educator credential.<sup>24</sup>
- **Literacy Minnesota** promotes Educator Level 1 Certification that uses the Google for Education platform to build the skills to engage learners while integrating technology.<sup>25</sup>



- [The Transforming Distance Education Course](#), designed by the **EdTech Center at World Education**, was designed to support adult education programs and practitioners with providing instruction at a distance or in a blended learning format. The course is made up of four self-paced modules that practitioners can take in any order of preference, earning badges as they progress through each course and culminating in a Transformative Distance Education Innovator badge when all the required activities within the course are completed.<sup>26</sup>
- **TCALL** has created a gamified training and badging system for digital skills PD, as described in an EdTech Center [blog](#).<sup>27</sup> Teachers can advance along a continuum of expertise, earning badges at different levels. An important element of the PD is peer mentoring, which creates opportunities for peers to support one another. Badges 1 and 2 cover basic digital literacy aligned to the ISTE standards for students and include Northstar Digital Literacy Assessments. At Level 3, participants start to receive training to be tech integration coaches and must complete 10 to 12 activity badges per level on training and mentoring their peers.
- **Digital Promise's** [Micro-credential Explorer](#) allows educators to search through hundreds of competency-based micro-credentials to find the ones most relevant for their work. This includes a stack of micro-credentials designed for any individual working with adult learners to deepen and demonstrate their skills in promoting [adult learner variability](#).

## Peer Mentorship and Modeling Targeted Instructional Practices

**“I was assigned a mentor who supported my first year as an instructor. Having a mentor was positively impactful in that first year and helped set the foundation for the following years of my instructional practice.”**

— *Jamie Harris, digital skills senior technical advisor, World Education, Inc.*<sup>28</sup>

Peer mentorship is a PD model that has existed for many years. In peer mentorship, instructors can visit other instructors' classes to learn from their peers or enlist the mentorship of a seasoned instructor as they develop their instructional practice. Many adult education programs used this approach to support their instructors as the workplace changed in recent years. For example, at the onset of the pandemic, many programs paired instructors who were skilled technology users with instructors who had emerging digital skills. This not only allowed for peer mentorship but also modeled targeted instructional practices for instructors with emerging digital skills.

## Service Learning and Project-Based PD

Research highlights the need for models that use instructional strategies similar to those that work for students, such as inquiry-based, project-based, or situated learning.<sup>29</sup>

**Examples include the following:**

- [CrowdED Learning’s EdTech Maker Space](#) is a service learning PD model that helps instructors learn how to create resources using popular edtech tools while considering effective strategies for implementing those resources in instruction. As practitioners learn how to use the tools, their new skills are immediately put into practice by developing learning activities focused on a specific curriculum or resource need, resulting in a set of reusable open educational resources (OER) such as [activity sets that supplement Literacy Minnesota’s ESL Story Bank](#).
- IDEAL Consortium’s [Building an EdTech Strategy Toolkit course](#) is project-based PD in which instructors design sustainable edtech routines that a) are centered around learner factors, b) connect to evidence-based instructional strategies, and c) incorporate digital skills. [The routines that instructors develop as part of this course](#) are added to the [EdTech Integration Strategy Toolkit](#), a freely available app that includes the routines, information about edtech tools, and a library of digital skills resources.
- After practitioners spend eight months of learning, practicing, and being mentored while integrating [Teaching Skills That Matter](#) lessons, the culminating TSTM in Adult Education project requires them to modify a lesson plan to meet TSTM requirements before teaching the lesson to their students and design an artifact of their choosing that is then shared with their peers.<sup>30</sup>

## Professional Development Content

**What professional development leaders look for:**

- Accessible and adaptable models with minimal preparation required to implement—a “grab and go” resource.<sup>31</sup>
- “Turnkey” yet customizable resources, developed to support practitioners with building learner digital resilience.<sup>32</sup>
- Free, internet-based tools and PD resources are appreciated, especially when content functions well on multiple types of devices.<sup>33</sup>



There is existing content for states and programs to use and integrate into their professional development. A variety of PD models, local and statewide, have intentionally focused on the development of instructors' digital skills and resilience.

**Examples include the following:**

- [Transforming Distance Education](#) is a four-hour, online asynchronous course created by EdTech Center at World Education with support from OCTAE, designed for education providers and instructors of adult basic academic skills, English language, and literacy at a distance or through blended learning.
- Another example is [Outreach and Technical Assistance Network's](#) (OTAN) teacher training, online workshops, field support, and symposium.
- OCTAE's [Teaching Skills That Matter](#) (TSTM) initiative provides guidance and examples including detailed lesson plans for the integration of digital literacy and technology into instruction, with an approach focused on developing learners' digital problem-solving skills. Some states, such as Texas, have developed further training for digital literacy instruction based on TSTM.
- [Promoting Digital Literacy for Adult Learners: A Resource Guide](#) was developed by The Barbara Bush Foundation and Digital Promise to fill a gap in the professional development of adult educators and improve the quality of digital literacy skills training using a whole learner approach.
- The Center on Inclusive Technology & Education Systems created an evidence-based [Field Guide](#) to help leaders build the capacity to develop, implement, and adjust equitable technology programming in the areas of assistive technology, educational technology, and information technology.<sup>34</sup> The guide recognizes that leaders have the power to create growth mindsets and culture shifts and to motivate stakeholders to consciously attend to inclusion efforts. It encourages leaders to develop professional learning plans that model equity, using a combination of Universal Design for Learning principles and evidence-based technology integration practices.<sup>35</sup>
- The [Integrating Digital Literacy Into English Language Instruction](#) PD module is self-paced and designed for practitioners looking to learn how to integrate digital literacy skills into their learning environments for English learners.<sup>36</sup> The course contains four modules, culminating in a Professional Development Certificate after completing all required activities. The training content utilizes explicit instruction techniques, such as explaining relevancy, providing examples of what digital integration might look like, and allowing time to practice.<sup>37</sup> The Companion Learning Resources content offers project-based lesson ideas that educators can integrate into the learning environment to support learners with building digital literacy skills, use technology to solve problems, and engage in peer interactions.

- ISTE’s SkillRise has worked in collaboration with the Markle Foundation’s Skillful Initiative and other partners to produce a free digital and lifelong learning skills course that builds on ISTE’s [Profile of a Lifelong Learner](#) framework and includes contributions from World Education’s Digital US [Digital Navigator resource hub](#). The first iterations of the course will be geared for career coaches and jobseekers and will be piloted in early 2023.

## Frameworks to Support Planned Technology Integration

---

Decisions about when and how to use technology in a classroom are more easily made when guided by an evidence-based framework.<sup>38</sup>

### For example:

- The Substitution, Augmentation, Modification, and Redefinition Model functions as a framework to help practitioners explore how teaching and learning experiences can be altered through the use of computer technology.<sup>39</sup>
- The Triple E Framework helps educators anticipate how chosen technologies 1) support student engagement, 2) enhance learning, and 3) provide opportunities to extend learning outside of class.<sup>40</sup> Teachers can use this framework to decide what technologies to use and how.<sup>41</sup> Gaer and Reyes suggest that combining all three uses is the “sweet spot”—the perfect lesson.<sup>42</sup>
- Another important resource is the Technology Integration Matrix, which has thorough explanations as well as video examples of technology integration in practice, arranged by subject area and grade level.<sup>43</sup>

One DRAW subject matter expert suggested that practitioners need resources to help instructors critically evaluate “free” technology and recognize when these tools might be asking for sensitive or confidential student information.<sup>44</sup> For program leaders who make technology adoption decisions at the state and local levels, there is a need for information about interoperable systems and building cohesive tech frameworks for smaller or under-resourced organizations.<sup>45</sup>

- To provide guidance to practitioners on selecting the right technology tools to integrate into classrooms, the EdTech Center at World Education with Digital US partners developed the [WorkforceEdTech.org](#) website with the slogan “Goals before tools.” It offers a detailed criteria list for evaluating possible tools, entitled “[Criteria for Evaluating](#)

[Workforce EdTech Tools: To Increase Reach and Impact of Adult Learning and Employment Initiatives.](#)”

- ISTE’s SkillRise framework offers education leaders and workforce development organizations strategies to understand how to leverage technology to upskill adult learner-workers.<sup>46</sup> The online [Upskill With EdTech course and related case studies](#) provide in-depth professional learning to guide technology adoption and development of learning opportunities at adult learning organizations. Professional Development for Leaders.

At the state systems level, PD is needed for PD leaders who provide support to teachers and administrators on a range of topics. These leaders need to know how to provide training to teachers with differing skills and be able to draw on PD models that work well to support differentiated PD. [The IDEAL Consortium](#) is a community of practice that helps member states establish or sustain distance and blended learning programs. Through the consortium, state-level leaders gain access to PD, technical support, peer support, and facilitated, ongoing discussion with a network of education leaders from across the country.

**Other resources for leaders include the following:**

- The [IDEAL Distance Education and Blended Learning Handbook](#) presents key components defining quality and scalable distance and blended learning. It provides ample examples and reflection opportunities for readers to draw on when designing and implementing their own programs.<sup>47</sup> The handbook covers administrative and instructional issues observed through nearly two decades of research that are at the core of successful blended and distance education. Informed by both current research and federal and state policy guidelines and observations of practice, it is a how-to manual for distance education in adult ed programs.
- [The School Leader Digital Learning Guide](#) from the U.S. Department of Education’s Office of Educational Technology guides education leaders as they plan, implement, and sustain technology-rich programs. It shares digital learning principles and connected strategies that support delivery of equitable learner-centered programming.
- The aforementioned [ISTE SkillRise framework](#) guides organization leaders through a process for technology adoption and program transformation that leverages technology to improve education programs.

In addition to supporting leaders of programs funded by the Adult Education and Family Literacy Act, corporate learning and development and operations leaders need resources to support their digital skill building efforts. Many leaders at large, national companies are coming together to share best practices and resources with one another through the Digital US

[Employer Network Advancing Digital Skills and Equity](#) facilitated by Upskill America at the Aspen Institute and World Education. Together they developed a [road map](#) of steps corporate leaders can take to invest in their workforce’s digital skills, with guiding questions provided for each step.

Finally, PD content for leaders needs to include the development of partnerships to maximize the resources available to individual partners and increase their reach in providing digital literacy learning programming to adults in the community. One existing resource is [“Community Connections: Digital Literacy Acquisition Policy Brief.”](#)

## Challenges and Opportunities in Professional Development

---

### Barriers to Providing Effective Professional Development

The need for teacher training is clear, but the challenges are complex, including:

- Too much emphasis on how to use **specific tools**. To achieve self-efficacy, PD focus should not be technocratic—focusing only on how to use a tool—but require critical thinking about how its use would change pedagogy and impact learning.<sup>48</sup> Yet our scan showed that PD can get stalled at the “how to use a technology” stage. There is a lack of understanding at the teacher and institutional level about how adopted digital technologies work and how they can be best used to transform teaching and learning.

**“It’s not about the tool anymore. It’s about learning how to learn—due to constant updates and multiple options for the same goal. Having the confidence to experiment and explore rather than step-by-step guidance is key.”**

– Corina Kasior,  
*director of educational technology, Arizona Department of Education*<sup>49</sup>

- **Variability** in the quality of PD options and the breadth of topics covered across states and programs as well as **inconsistency** in what PD is required and what is optional.
- **Lack of time and resources**. Scheduling, budgets, and finding capacity to train instructors are common challenges across adult education providers. Many instructors

work part time or with multiple organizations to piece together full-time hours. This affects their availability for PD. Too often, the PD that programs can afford and that teachers have time to attend are piece-meal, characterized by one-off webinars. Jamie Harris, digital skills senior technical advisor at the EdTech Center, noted that states and local programs may not have the time or funds to make the additional investment to build practitioner digital skills, nor do they have sufficient guidance on how to proceed.<sup>50</sup> Her hope is that through the DRAW project, the diverse needs across state-funded programs are met because providing differentiated yet equitable training and support can be challenging when it occurs in a silo.

- Lack of **trust** in external professional development providers. Though external trainers are viewed as the experts who can change instructor practice, there is a lack of trust and questions about the legitimacy of outside trainers.

**“You can’t parachute into a community. People want to be trained by someone who has the same regional accent, not someone who doesn’t understand circumstances, and especially when there is vulnerability—when teachers admit low [digital] literacy.”**

– *Dylan Siegler, corporate social responsibility strategist, Verizon (2019-2021)*<sup>51</sup>

- Finding and making use of **research**.

**“The Department of Education has paid for a ton of research [on multiple issues], which is amazing. And yet, a lot of that research just sits locked up in a report or on a website that nobody sees. And so what they should also do is invest in a group of librarians and knowledge management specialists and others to help them think through how good dissemination would work.”**

– *Amanda Bergson-Shilcock, senior fellow, National Skills Coalition*<sup>52</sup>

## Opportunities

- Focus on **long-term PD** solutions that go beyond how to use a tool or teach a discrete skill. Solutions should involve development of critical thinking about how to use technology to transform teaching and learning in ways that develop learners’ digital resilience.
- For PD to be effective, ensure **sufficient time** is allocated for both preparation and professional learning, including time and opportunities for personalized instruction or coaching, follow-up, and reflection. This type of PD should also involve badging

opportunities. State-level leadership and support is needed to provide this type of comprehensive PD.

- **Invest in free, high-quality resources.** To provide more equitable access, the field needs more free national resources such as OCTAE's investment in this initiative, the Transforming Distance Education course, TSTM, and OER. Prioritized topics for future investment include PD on using learning management systems to their full potential and designing them to help serve students, as well as PD that helps teachers themselves learn digital skills in a way that supports transferability.
- Provide professional development specifically for **leadership**. PD leaders need to know how to provide training to teachers with differing skills or be able to draw on PD models that work well to support differentiated PD.
- Promote **collaborations and consortia**. One promising approach to increasing access to high-quality PD is sustained, funded collaboration among states at the national level and among programs within each state. Such collaboration does exist at the state level—for example, the Hamline [ATLAS](#) collaboration with Literacy Minnesota for the provision of PD in Minnesota provides key activities, events, and resources for adult education practitioners. National examples include the IDEAL Consortium and the National Association of State Directors of Adult Education, which offers monthly calls and an annual conference for state directors. IDEAL Consortium PD can serve as a model for quality professional learning that hits all the components of effective learning articulated by Darling-Hammond.<sup>53</sup> Through IDEAL, state-level leaders receive technical assistance and coaching on systems-level topics. Teachers can access engaging, sustained, and contextualized PD. The PD is constructed on and integrates tools that the teachers' learners will themselves be called upon to use in learning online as distance learners. In addition, there is a structure for feedback and reflection for practitioners at the classroom and state level. Funding to support more state involvement in consortium-oriented PD systems is needed in general, but especially as strong leadership is needed to advance the adult education field in fostering digital resilience.



## Conclusion

---

While professional development efforts to support practitioners in addressing digital inclusion needs and teach digital skills have increased since COVID, there is still a lot of work to be done and gaps to fill. With funding from OCTAE, the DRAW initiative's next step is to take all the learnings from the landscape scan and develop professional development resources and training to help adult educators learn how to better support their learners to develop foundational digital skills. Please follow the [DRAW project page](#) for further updates, information, and professional development support, and opportunities to join discussions on advancing digital resilience and equity.

## Endnotes

- 
- <sup>1</sup> Jamie Fall, personal communication with author, September 23, 2021.
- <sup>2</sup> DRAW Practitioner Questionnaire; and Kevin Morgan, “COVID-19 and Its Impact on Adult Literacy Programs,” ProLiteracy blog, June 26, 2020, [www.proliteracy.org/Blogs/Article/564/COVID-19-and-its-Impact-on-Adult-Literacy-Programs](http://www.proliteracy.org/Blogs/Article/564/COVID-19-and-its-Impact-on-Adult-Literacy-Programs).
- <sup>3</sup> Serkan Aslan, “Analysis of Digital Literacy Self-Efficacy Levels of Pre-Service Teachers,” *International Journal of Technology in Education* 4, no. 1 (2021): 57-67, [www.ijte.net/index.php/ijte/article/view/47](http://www.ijte.net/index.php/ijte/article/view/47).
- <sup>4</sup> DRAW Practitioner Questionnaire; and Corina Kasior, personal communication, September 27 2021.
- <sup>5</sup> Corina Kasior, personal communication, September 27 2021.
- <sup>6</sup> “SkillRise Framework,” International Society for Technology in Education (ISTE), 2019, <https://skillrise.org/framework>.
- <sup>7</sup> Kasim Karatas and Ibrahim Arpaci, “The Role of Self-Directed Learning, Metacognition, and 21st Century Skills Predicting the Readiness for Online Learning,” *Contemporary Educational Technology* 13, no. 3, article ep300 (March 2021), [www.cedtech.net/article/the-role-of-self-directed-learning-metacognition-and-21st-century-skills-predicting-the-readiness-10786](http://www.cedtech.net/article/the-role-of-self-directed-learning-metacognition-and-21st-century-skills-predicting-the-readiness-10786).
- <sup>8</sup> Jen Vanek and Kathy Harris, *Digital Literacy and Technology Integration in Adult Basic Skills Education: A Review of the Research* (Syracuse, New York: ProLiteracy, June 2020), [www.proliteracy.org/Portals/0/pdf/Research/Briefs/ProLiteracy-Research-Brief-02\\_Technology-2020-06.pdf](http://www.proliteracy.org/Portals/0/pdf/Research/Briefs/ProLiteracy-Research-Brief-02_Technology-2020-06.pdf).
- <sup>9</sup> Vanek and Harris, *Digital Literacy and Technology Integration*, citing Suzanne Smythe, *Incorporating Digital Technologies in Adult Basic Education* (Ontario, Canada: Alphaplus, 2012), [www.researchgate.net/publication/290411701\\_Incorporating\\_digital\\_technologies\\_in\\_adult\\_basic\\_education](http://www.researchgate.net/publication/290411701_Incorporating_digital_technologies_in_adult_basic_education); and Linda Darling-Hammond, Molly B. Zielesinski, and Shelley Goldman, *Using Technology to Support At-Risk Students’ Learning* (Stanford, California: Stanford Center for Opportunity Policy in Education and Alliance for Excellent Education, September 2014), <https://edpolicy.stanford.edu/sites/default/files/scope-pub-using-technology-report.pdf>.
- <sup>10</sup> Linda Darling-Hammond, Maria E. Hyler, and Madelyn Gardner, *Effective Teacher Professional Development* (Palo Alto, California: Learning Policy Institute, June 5, 2017), <https://learningpolicyinstitute.org/product/teacher-prof-dev>.

- 
- <sup>11</sup> Glenda Rose, personal communication with author, April 28, 2022.
- <sup>12</sup> Ginette Chandler, personal communication with author, September 24, 2021.
- <sup>13</sup> Jen Vanek, Destiny Simpson, and Jeff Goumas, *IDEAL Distance Education and Blended Learning Handbook, 7<sup>th</sup> Edition* (Boston: EdTech Center at World Education, 2020), <https://edtech.worlded.org/resource/ideal-distance-education-and-blended-learning-handbook/>.
- <sup>14</sup> ISTE, “SkillRise Framework,” <https://skillrise.org/framework>.
- <sup>15</sup> Ginette Chandler, personal communication, September 24, 2021.
- <sup>16</sup> Mary Gaston, personal communication, September 21, 2021.
- <sup>17</sup> Sarah Cacicio, personal communication with author, September 16, 2021.
- <sup>18</sup> Texas Center for the Advancement of Literacy and Learning, accessed June 1, 2022, <https://tcall.tamu.edu/index.htm>.
- <sup>19</sup> Joanna Botts, “FY21 PL Boot Camp Webinars,” video playlist, updated April 27, 2021, [www.youtube.com/playlist?list=PL3-Ibk8\\_75ZbKpQord4LS7-qhr83d9p58](http://www.youtube.com/playlist?list=PL3-Ibk8_75ZbKpQord4LS7-qhr83d9p58).
- <sup>20</sup> “Michigan Adult Education Professional Development,” Michigan Department of Labor & Economic Opportunity, accessed June 1, 2022, <https://miaepd.catalog.instructure.com/>.
- <sup>21</sup> System for Adult Basic Education Support (SABES), Massachusetts Department of Elementary and Secondary Education, accessed June 1, 2022, [www.sabes.org/](http://www.sabes.org/)
- <sup>22</sup> “Keep Teaching (During School Closure),” Los Angeles Unified School District, Division of Adult and Career Education, accessed June 1, 2022, [www.launifiedadult.org/apps/pages/index.jsp?uREC\\_ID=1703465&type=d&pREC\\_ID=1865628](http://www.launifiedadult.org/apps/pages/index.jsp?uREC_ID=1703465&type=d&pREC_ID=1865628).
- <sup>23</sup> ISTE, “SkillRise Framework,” <https://skillrise.org/framework>.
- <sup>24</sup> ISTE, accessed June 1, 2022, [www.iste.org/](http://www.iste.org/).
- <sup>25</sup> Google for Education, accessed June 1, 2022, [https://edu.google.com/intl/ALL\\_us/](https://edu.google.com/intl/ALL_us/).
- <sup>26</sup> “Transforming Distance Education Course” (Boston: EdTech Center at World Education, March 25, 2022), <https://edtech.worlded.org/transforming-distance-education/>.
- <sup>27</sup> EdTech Center Partners, “Badging in Action: Becoming a Tech Integration Coach in Texas,” EdTech Center at World Education blog, 2017, <https://edtech.worlded.org/badging-in-action-becoming-a-tech-integration-coach-in-texas/>.
- <sup>28</sup> Jamie Harris, personal communication with author, December 17, 2021.

- 
- <sup>29</sup> Renee Hobbs and Julie Coiro, “Design Features of a Professional Development Program in Digital Literacy,” *Journal of Adolescent & Adult Literacy* 62, no. 4 (September 2019): 401-9, <https://ila.onlinelibrary.wiley.com/doi/10.1002/jaal.907>.
- <sup>30</sup> “Teaching Skills That Matter in Adult Education,” LINCS, accessed June 1, 2022, <https://lincs.ed.gov/state-resources/federal-initiatives/teaching-skills-matter-adult-education>.
- <sup>31</sup> Mary Gaston, personal communication with author, September 21, 2021.
- <sup>32</sup> Sherry Lehane, personal communication with author, September 21, 2021.
- <sup>33</sup> Jill Castek, personal communication, September 17, 2021.
- <sup>34</sup> Center on Inclusive Technology & Education Systems (CITES), accessed June 1, 2022, <https://cites.cast.org/>.
- <sup>35</sup> CITES, <https://cites.cast.org/>.
- <sup>36</sup> “Integrating Digital Literacy Into English Language Instruction,” LINCS, published September 24, 2020, accessed June 1, 2022, <https://lincs.ed.gov/state-resources/federal-initiatives/esl-pro/integrating-digital-literacy-into-english-language-instruction>.
- <sup>37</sup> LINCS, “Integrating Digital Literacy,” <https://lincs.ed.gov/state-resources/federal-initiatives/esl-pro/integrating-digital-literacy-into-english-language-instruction>.
- <sup>38</sup> Vanek and Harris, Digital Literacy and Technology Integration in Adult Basic Skills Education, [www.proliteracy.org/Portals/0/pdf/Research/Briefs/ProLiteracy-Research-Brief02\\_Technology-2020-06.pdf](http://www.proliteracy.org/Portals/0/pdf/Research/Briefs/ProLiteracy-Research-Brief02_Technology-2020-06.pdf).
- <sup>39</sup> SAMR Model, n.d. <https://sites.google.com/a/msad60.org/technology-is-learning/samr-model>
- <sup>40</sup> Liz Kolb, *Learning First, Technology Second: An Educator’s Guide to Designing Authentic Lessons* (Arlington, Virginia: ISTE, 2017), [www.iste.org/books/learningfirst-technologysecond-liz-kolb](http://www.iste.org/books/learningfirst-technologysecond-liz-kolb).
- <sup>41</sup> Kolb, *Learning First, Technology Second*, [www.iste.org/books/learningfirst-technologysecond-liz-kolb](http://www.iste.org/books/learningfirst-technologysecond-liz-kolb).
- <sup>42</sup> Susan Gaer and Kristi Reyes, *The Triple E Framework for More Effective Technology Integration in Adult Education* (Boston, MA: World Education, 2019) <https://edtech.worlded.org/the-triple-e-framework-for-more-effective-technology-integration-in-adult-education/>.
- <sup>43</sup> “Technology Integration Matrix,” accessed May 17, 2022, <https://fcit.usf.edu/matrix/>.
- <sup>44</sup> Sherry Lehane, personal communication, September 21, 2021.

- 
- <sup>45</sup> Sherry Lehane, personal communication, September 21, 2021.
- <sup>46</sup> ISTE, “SkillRise Framework,” <https://skillrise.org/framework>.
- <sup>47</sup> Vanek, Simpson, and Goumas, *IDEAL Distance Education and Blended Learning*, <https://edtech.worlded.org/resource/ideal-distance-education-and-blended-learning-handbook/>.
- <sup>48</sup> Deirdre Butler et al., “Different Strokes for Different Folks: Scaling a Blended Model of Teacher Professional Learning,” *Interactive Technology and Smart Education* 14, no. 3 (September 2017): 230-245, [www.emerald.com/insight/content/doi/10.1108/ITSE-01-2017-0011/full/html](http://www.emerald.com/insight/content/doi/10.1108/ITSE-01-2017-0011/full/html).
- <sup>49</sup> Corina Kasior, personal communication with author, September 27, 2021.
- <sup>50</sup> Jamie Harris, personal communication, September 21, 2021.
- <sup>51</sup> Dylan Siegler, personal communication with author, September 14, 2021.
- <sup>52</sup> Amanda Bergson-Shilcock, personal communication with author, September 13, 2021.
- <sup>53</sup> Darling-Hammond, Hylar, and Gardner, *Effective Teacher Professional Development*, <https://learningpolicyinstitute.org/product/teacher-prof-dev>.