American Library Association Presidential Commission on Information Literacy, *Final Report*, American Library Association Presidential Commission on Information Literacy, 1989, Chicago IL [reprinted in full in Coping with information illiteracy: bibliographic instruction for the information age, GE Mensching and TB Mensching (eds.), Pieran Press, Ann Arbor MI, pp 156-171]

- This report offered one of the first formalized definitions of information literacy to the library world, and simultaneously provided a six-part framework of information competency. This framework would go on to inform the Big6 design, and can be interpreted as the progenitor to modern digital literacy frameworks.

Bawden, David. Information and digital literacies: a review of concepts. *Journal of Documentation*, 2001. 57. 218-259. https://doi.org/10.1108/EUM0000000007083

- This early review provides great context for digital literacy; although we chose not to define digital literacy in our report, and indeed avoided discussions of this permeable definition, it's notable that Bawden provides a challenge to traditional views of literacy while also focusing on the traditional elements of competencies and skills.

Beattie et al., "Digital Literacy Framework for Adult Learners," Maryland Department of Labor, 2020. https://www.dllr.state.md.us/gedmd/digitalliteracyframework.pdf

- This framework, like many created within the past few years, uses literature from the early- to mid- 2000s to describe a holistic approach to digital literacy: that is, it combines operational skills with cognitive processes such as evaluating, sharing, and communicating. It provides guiding questions and clean terminology to shape future assessment tools.

Bergson-Shilcock, Amanda. "The New Landscape of Digital Literacy." *National Skills Coalition*, 5 May 2020, www.nationalskillscoalition.org/wp-content/uploads/2020/12/05-20-2020-NSC-New-Landscape-of-Digital-Literacy.pdf.

- This survey continues Bawden's work in an interesting way — given the rapid development of technology in the past two decades, it establishes and examines the new landscape as a material reality rather than a theoretical body of work. Essential for the examination of skill gaps in the workplace; we appreciated that it provided information on all demographics with nuance.

Boot, Charness, N., Czaja, S. J., Sharit, J., Rogers, W. A., Fisk, A. D., Mitzner, T., Lee, C. C., & Nair, S. Computer proficiency questionnaire: assessing low and high computer proficient seniors. The Gerontologist, 2015, 55(3), 404–411. https://doi.org/10.1093/geront/gnt117

- A research article about the development of a digital skills assessment for elderly adults. Details the process for evaluating the assessment with brand new learners and adults with several years of digital experience.

Brumfield, C. Why the 2020 Census Matters for Rural America. Washington, DC: Georgetown Law Center on Poverty and Inequality, October 10, 2018.

- A useful piece that identifies the vicious cycle of digital inequity and inaccurate models in rural America. This demonstrates the myriad ways in which census data is potentially extremely helpful to these populations, and the avenues by which the census usually falls short in these geographical areas.

Calvani, et al. "Models and Instruments for Assessing Digital Competence at School." Je-LKS, vol. 4, no. 3, 2009, https://doi.org/10.20368/1971-8829/288.

- This framework is one of the first to explicitly incorporate cultural backgrounds and ethical awareness, introducing the ethical construct while trying to develop a framework that focused on digital literacy in everyday life.

Carson, K., Wedlake, S., Houghton, M., Khoshbakhtian, A., Keyes, D., & Iribe Ramirez, Y. (2021, September). Digital bridge: Providing digital access to Low-Income job seekers during the COVID-19 pandemic. Seattle Jobs Initiative.

- A reflection of the Digital Bridge program's impact and takeaways for future efforts. The DIgital Bridge program distributed devices and training to job seekers during pandemic lockdown.

Carretero, S. Vuorikari, R. and Punie, Y. DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use, 2017.

- An example of an institutional framework that has undergone revisions and multiple iterations. This comprehensive framework boasts 38 digital skills, many specific to the workplace, which demands a multi-dimensional hierarchical structure.

Cartelli, A. A framework for digital competence assessment. *International Journal of Digital Literacy and Digital Competence*, 2010.

- This holistic framework makes the unusual choice to collapse cognitive and technological skills into one category; although it introduces affective skills as their own construct and helps to develop the socio-cultural construct, it is ultimately weakened by that first choice. Constructs

in this framework all exist *under* a meta-construct — ethics and judgment — which is not a model later frameworks followed.

City of Philadelphia. "Connecting Philadelphia: 2021 Household Internet Assessment Survey." *Benton Institute for Broadband and Society*, 21 October 2021, https://www.benton.org/headlines/connecting-philadelphia-2021-household-internet-assessment-survey.

- Analysis of the results of Philadelphia's 2021 internet access survey.

Davis, Fred D. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology." MIS Quarterly, vol. 13, no. 3, 1989, pp. 319–40, https://doi.org/10.2307/249008.

- The research paper that outlines the Technology Acceptance Model, a widely applied statistical model of users' expected technology adoption based on its perceived usefulness and usability.

Eshet-Alkalai, Y. "Digital Literacy: a Conceptual Framework for Survival Skills in the Digital Era." Journal of Educational Multimedia and Hypermedia, vol. 13, no. 1, 2004, p. 93–106.

- A revised edition of the 2002 model, which originally included cognitive and technological constructs, that introduces the socio-emotional construct. This early attempt drew attention to the social role in digital skills.

Eubanks, Virginia E. "Trapped in the Digital Divide: The Distributive Paradigm in Community Informatics." The Journal of Community Informatics, vol. 3, no. 2, 2007, https://doi.org/10.15353/joci.v3i2.2373.

- This article uses a small-scale, interview-based study to demonstrate the flaws of distributing access and training as a "solution" to digital inequity. Eubanks collaborated with low-income women to highlight the systemic issues causing digital inequity, who described ways to address these issues while emphasizing that the groups suffering via inequity had developed resources and ways of thinking that could benefit digital "haves" as much as access and training would benefit "have nots."

EveryoneOn, Horrigan, John B. "DIGITAL SKILLS AND TRUST." EveryoneOn.com, February 2022,

www.static1.squarespace.com/static/5aa8af1fc3c16a54bcbb0415/t/61fc71248a56247e899c2a20/1643933997111/EveryoneOn_Report_2_DigitalSkills_and_Trust.pdf

- A survey report of EveryoneOn's national study about how preexisting digital skills impacted people during the pandemic, and measured how trust in anchor institutions was related to skills and how much people value having an internet connection at home.

Feerrar, Julia. "Development of a framework for digital literacy", Reference Services Review, 2019. https://doi.org/10.1108/RSR-01-2019-0002

- This framework was developed by librarians at Virginia Tech; their report includes a literature review we found helpful as background for our research, and we would recommend it for further reading. Frankly, this framework is one of the most thorough and useful human-oriented frameworks created using the literature produced from 2002 up through the past five years.

"Framework for Information Literacy for Higher Education", American Library Association, February 9, 2015. http://www.ala.org/acrl/standards/ilframework

- This framework was adopted by the ALA and has continued to be their ideal framework for information literacy. Since it operates at a higher level and does not seek to address digital skills unrelated to its core goal, it isn't particularly useful, but we found the level of interrogation and the address of dispositions to be an interesting element.

Hargittai, Eszter. "Survey Measures of Web-Oriented Digital Literacy." Social Science Computer Review, vol. 23, no. 3, 2005, pp. 371–79, https://doi.org/10.1177/0894439305275911.

- A research paper about the use of proxy vocabulary terms in self-reporting digital skills assessments. The findings demonstrate that knowledge-based assessments are more reliable than self-reporting.

Hargittai, Eszter. "An Update on Survey Measures of Web-Oriented Digital Literacy." Social Science Computer Review, vol. 27, no. 1, 2009, pp. 130–37, https://doi.org/10.1177/0894439308318213.

- This research paper builds on Hargittai's previous work, and finds that when misleading bogus terms are added to a self-reported skills assessment, individuals generally do not identify as understanding the terms.

Horrigan, John. "Digital Readiness Gaps." *Pew Research Center*, 20 September 2016, www.pewresearch.org/internet/2016/09/20/digital-readiness-gaps/.

- A 2016 nationwide Pew survey evaluating Americans' "confidence in using computers, their facility with getting new technology to work, their use of digital tools for learning, their ability to determine the trustworthiness of online information, and their familiarity with contemporary "education tech" terms."

Howell, Carrie R., et al. "Area Based Stratified Random Sampling Using Geospatial Technology in a Community-Based Survey." BMC Public Health, vol. 20, no. 1, 2020, pp. 1678–79, https://doi.org/10.1186/s12889-020-09793-0.

- This survey demonstrates the methodology that informs time-space sampling, using GIS tools to construct door-to-door community based sampling, which shows that area-based research can produce balanced samples of disparate populations.

Katz, Irvin R. "Testing Information Literacy in Digital Environments : ETS's Iskills Assessment." Information Technology and Libraries, vol. 26, no. 3, 2007, pp. 3–12, https://doi.org/10.6017/ital.v26i3.3271.

- A research article about the development of a process-based skill assessment used in a higher education setting. This is leading research on simulation assessments and explores testing knowledge-in-action.

Kretzmann, John P., and John McKnight. Building Communities from the Inside Out : a Path Toward Finding and Mobilizing a Community's Assets. 2nd print., Center for Urban Affairs and Policy Research, Neighborhood Innovations Network, Northwestern University, 1993.

- For those looking for background information on asset-based community development we recommend this book, which was the first to name the idea and outlines many of the approaches still in use.

Kaplan, David, and Karen Mossberger. "Prospects for Poor Neighborhoods in the Broadband Era: Neighborhood-Level Influences on Technology Use at Work." Economic Development Quarterly, vol. 26, no. 1, 2012, pp. 95–105, https://doi.org/10.1177/0891242411431450.

- From the abstract: "This research explores the role of place in Internet use at work, investigating the role that neighborhood context may play in opportunities to gain technology skills and access to relatively better paying jobs. " The findings indicate that personal characteristics like education and job type correlate with internet use at work, and that people from communities with high unemployment are less likely to use the internet at work.

Lundman, Susan. "Everyday Technology Use Questionnaire, ETUQ." *Karolinska Institutet*, https://ki.se/en/nvs/everyday-technology-use-questionnaire-etuq.

- This questionnaire was designed for and has been widely used to assess the digital skills of adults with cognitive disabilities.

Magassa, Lassana. *"I Am Not Computer Savvy": A Look into the Everyday Digital Literacy Levels of Formerly Incarcerated People Using a Novel Holistic Digital Literacy Framework.* ProQuest Dissertations Publishing, 2020.

- This dissertation provides a close-reading of foundational digital literacy frameworks in order to develop a specialized framework for a vulnerable population. It provides great context for the inclusion and iteration of ethics- and emotions-based skills, and the proposed framework was ultimately successful in the development of assessment tools. We found it useful to examine the process by which a researcher uses a framework to create an assessment, especially given the results.

Marcoulides, George A. "Measuring Computer Anxiety: The Computer Anxiety Scale." Educational and Psychological Measurement, vol. 49, no. 3, 1989, pp. 733–39, https://doi.org/10.1177/001316448904900328.

- This research article focuses on the development of the Computer Anxiety Scale, one of the first and most influential self-reported digital skills assessments. It evaluates individuals' emotional response to different digital tasks.

Martin, Allan. "Digital Literacy and the "Digital Society"." *Digital literacies: concepts, policies and practices*, edited by Lankshear, Colin., and Knobel, Michele. Peter Lang, 2008., 151-176.

- This literature review was particularly helpful in that it provided a contextualized look at the state of digital literacy research after what was roughly the first decade of dedicated thought. It is widely cited, and the definition of digital literacy Martin develops is still one of the most useful definitions to date.

Morris, Margaret E. Left to Our Own Devices: Outsmarting Smart Technology to Reclaim Our Relationships, Health, and Focus. MIT Press, 2018, https://doi.org/10.7551/mitpress/10503.001.0001.

- This book explores the ways people adapt technology to suit their personal needs, demonstrating digital workarounds and problem solving. We recommend this book for those looking to understand emerging digital skills and how traditional skills-based assessments may or may not identify extant abilities.

Mossberger, Karen, et al. "Race, Place, and Information Technology." Urban Affairs Review (Thousand Oaks, Calif.), vol. 41, no. 5, 2006, pp. 583–620, https://doi.org/10.1177/1078087405283511.

- This research article investigates how ethnicity and concentrated poverty impact attitudes and access to technology. The findings indicate that place (and poverty associated with a place) has a greater correlation to access barriers than race.

Mozilla, "Introducing Mozilla's Web Literacy Map, Our new Blueprint for Teaching People About the Web," Mozilla Blog, April 8, 2016. https://blog.mozilla.org/press/2016/04/introducing-mozillas-web-literacy-map-our-new-blueprint-for-teaching-people-about-the-web/

- This framework demonstrates a non-workplace oriented framework, with a focus on skills used in digital creation and open-source content.

Muhib, Farzana B., et al. "A Venue-Based Method for Sampling Hard-to-Reach Populations." Public Health Reports, 1974, vol. 116, no. 1_suppl, 2001, pp. 216–22, https://doi.org/10.1093/phr/116.S1.216.

- This foundational study describes time-space sampling (TSS) as it is used in the public health sector to identify and model hidden populations. TSS was highly effective in reaching populations that had largely gone unexamined, and the study identifies its usefulness in other sectors.

Murray, Meg Coffin, and Jorge Perez. "Unraveling the Digital Literacy Paradox: How Higher Education Fails at the Fourth Literacy." Issues in Informing Science & Information Technology Education, vol. 11, 2014, pp. 85–100, https://doi.org/10.28945/1982.

- This research article briefly details the history of digital information literacy in higher ed settings, and describes the development of a knowledge-based assessment for students at a small university.

Ng, W. (2012). Conceptual framework underpinning digital literacy. In W. Ng, *Empowering scientific literacy through digital literacy* (p. 46). New York: Nova Science Publishers, Inc.

- This useful framework continued to develop the social and emotional dimensions of digital use, engaging with a process-based approach to demonstrate how all constructs work in tandem when a user engages their digital skills.

Roque, Nelson A., and Walter R. Boot. “A New Tool for Assessing Mobile Device Proficiency in Older Adults: The Mobile Device Proficiency Questionnaire.” Journal of Applied Gerontology, vol. 37, no. 2, 2018, pp. 131–56, https://doi.org/10.1177/0733464816642582.

- An example of a skills-based assessment for mobile device use developed for a particular audience; the elderly.

Scally, C., Burnstein, E., & Gerken, M. In Search of "Good" Rural Data. Urban Institute, April 30, 2020. https://www.urban.org/sites/default/files/publication/102134/in-search-of-good-rural-data.pdf

- This report describes the myriad complications present in surveying, sampling, and modeling data from rural communities. It was an invaluable resource for considering the difficulty inherent in understanding the data produced in small populations over great geographical areas, and it provided useful starting points for our research in effective rural research.

Scheerder, Anique, et al. “Determinants of Internet Skills, Uses and Outcomes. A Systematic Review of the Second- and Third-Level Digital Divide.” Telematics and Informatics, vol. 34, no. 8, 2017, pp. 1607–24, https://doi.org/10.1016/j.tele.2017.07.007.

- An influential systemic literature review, which seeks to create a standardized language for studying the socioeconomic elements of the third-level digital divide.

Seattle Information Technology. "Seattle IT Connectedness Segmentation Study." *Seattle.gov*, Pacific Market Research, 2018, www.seattle.gov/documents/Departments/SeattleIT/DigitalEngagement/TechAccess/City%20of%20Seattle%20Full%20Technical%20Report%20FINAL%2001152019.pdf.

- A report of the results City of Seattle’s 2018 digital connectedness survey.

Semaan, Salaam. “Time-Space Sampling and Respondent-Driven Sampling with Hard-to-Reach Populations.” Methodological Innovations, vol. 5, no. 2, 2010, pp. 60–75, https://doi.org/10.4256/mio.2010.0019.

- This report describes time-space sampling and respondent-driven sampling via their different methodologies, and identifies situations in which one might be preferable to the other. It maintains the position that both methods are highly effective.

Smith, Aaron. "Searching for Work in the Digital Era." *Pew Research Center*, November 9 2015, https://www.pewresearch.org/internet/2015/11/19/searching-for-work-in-the-digital-era/

- A Pew Research survey about how people use the internet during the job hunt. The majority of those surveyed used the internet in job searches.

Star, Susan Leigh. "The Ethnography of Infrastructure." American Behavioral Scientist, vol. 43, no. 3, Nov. 1999, pp. 377–391, doi:10.1177/00027649921955326.

- Star discusses ways to apply research methods of ethnography to infrastructure studies. She shares tactics for identifying master narratives and invisible work in infrastructure (for our purposes, infrastructure is digital skill development).

State of Hawai'i Department of Labor & Industrial Relations. HAWAI'I DIGITAL LITERACY & READINESS STUDY. Omnitrak, September 2021, www.labor.hawaii.gov/wdc/files/2021/11/Final-Statewide-Digital-Literacy-Survey-Report-from-Omnitrak-11.15.2021.pdf.

- Analysis of the results of Hawai'i's state digital skills survey.

Torralba, José A. (Tony). "A Survey of Emergent Digital Literacy Inside the Homes of Latino Immigrants in California: Digital Literacy Inside the Homes of Latinos in California." Journal of International Migration and Integration, vol. 16, no. 3, 2014, pp. 491–515, https://doi.org/10.1007/s12134-014-0348-2.

- From the abstract: "This paper examines how Latino immigrant families in California use information technology (IT) tools for their *pre-existing* personal, educational, and work-related activities *inside their homes."* This article serves as another exciting example of digital skills that surface outside of traditional assessment narratives.

UK Department of Education, "Essential Digital Skills framework," September 12, 2018. https://www.gov.uk/government/publications/essential-digital-skills-framework

- This governmental framework is the perfect example of a government developing a framework for everyday skills. Notably, it identifies a meta-contruct called "Being safe and legal online," which serves the dual purpose of identifying digital threats alongside a subtextual moral/ethical implication of legal activity being equal to good or righteous activity.

US Census Bureau, "Census Bureau Releases Estimates of Undercount and Overcount in the 2010 Census," news release CB12-95, May 22, 2012. https://www.census.gov/newsroom/releases/archives/2010_census/cb12-95.html.

- This document demonstrates the low margin of error in the US census, as presented using data from the US census. Taken in context of the later research produced by Brumfield (2018) and

Scally & Gerken (2020), we can identify the issues in census data that go understated in this document.

Verdery, Ashton M., et al. “Estimating Hidden Population Sizes with Venue-Based Sampling: Extensions of the Generalized Network Scale-up Estimator.” Epidemiology (Cambridge, Mass.), vol. 30, no. 6, 2019, pp. 901–10, https://doi.org/10.1097/EDE.0000000000001059.

- This study is the modern successor to Muhib et al. (1974) which further demonstrates the efficacy of time-space sampling (TSS). The results show that TSS is both efficient and accurate, and given the research necessitated by the method, it is simultaneously resistant to inference, operating on given data.

Wedlake, S., Lothian, K., Keyes, D., & Coward, C. (2019) Digital skill sets for diverse users: A comparison framework for curriculum and competencies. Seattle: Technology & Social Change Group, University of Washington Information School.

- This study provides a phenomenal and thorough breakdown of many popular digital literacy frameworks, throughout which it develops an understanding of core digital skills. It provides a set of recommendations on future frameworks, curricula, and assessments that we found particularly useful for evaluating the skills and abilities included in recent assessments/studies.

Wedlake, S et al. "Digital Skills Assessment Guidebook." *Academy.itu,* 2021, www.academy.itu.int/sites/default/files/media2/file/D-PHCB-CAP_BLD.04-2020-PDF-E_02%20June%202020.pdf.

- Outlines steps and offers guidance for creating a national or state digital skills assessment study. An especially helpful element is the chart in the appendix which compares many forms of existing digital skills assessments.

Wolf, Sara. The Big Six Information Skills As a Metacognitive Scaffold: A Case Study. *School Library Media Research*, 2003. https://www.ala.org/aasl/sites/ala.org.aasl/files/content/aaslpubsandjournals/slr/vol6/SLMR_BigSixInfoSkills_V6.pdf

- This model extrapolated on the Big6 skills developed by the ALA. In contrast to holistic frameworks being developed at the time, it presents digital literacy as a linear goal.