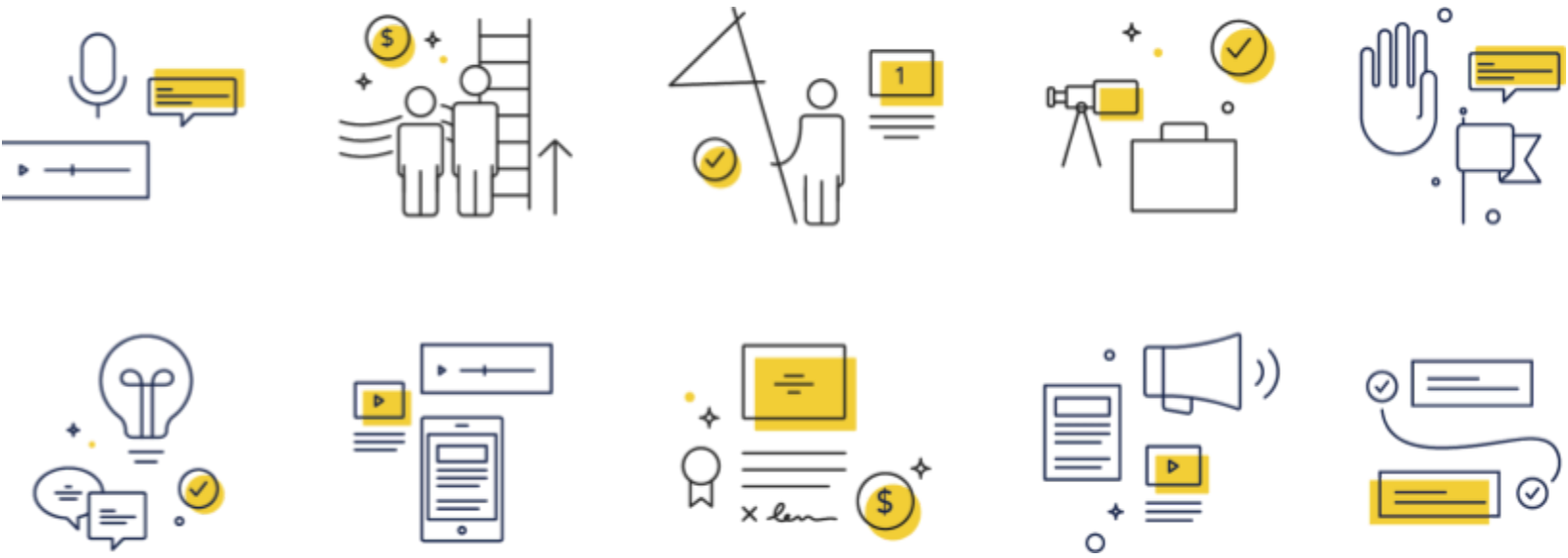
SKILLRISE

AN ISTE INITIATIVE



Profile of a Lifelong Learner

- Landscape Scan -

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Introduction

Today's workers are underserved when it comes to receiving the kind of educational and training support they need to succeed in their careers. A report published by Digital Promise in 2019 revealed that 60% to 70% of frontline workers have job-limiting foundational skills, and that while about 10% of workers pursued educational opportunities, over half of those who did reported that those experiences were "only somewhat useful or not useful."[1] To get specific about where education and training might be missing the mark, consider that 60% of occupations are now at least 30% automatable[2], and yet digital resilience[3] and upskilling are still relatively new concepts to the adult learning conversation. One thing is becoming abundantly clear: To thrive in today's labor market, workers need skills that fit with the demands of today and that can be readily adapted to meet the needs of the near future. Adult learning programs (both adult basic education and workforce development) need to identify what these necessary skills are to make sure education and training programs align and actively support learners' ability to achieve their goals in the future of work.

ISTE's SkillRise initiative is here to meet this need. We've developed a "Profile of a Lifelong Learner" to guide adult education in the digital age, and we're grounding the profile in research. This review elucidates similar work that has already been completed in the field – a landscape scan of existing relevant skills frameworks. We also commissioned a review of meta-analyses and systematic reviews from Educational Testing Service that explored skills that predict success in the workforce.

It is our hope that the macro view offered in this landscape can illuminate how a variety of organizations and initiatives have sought to actively support adults working toward their personal, academic, and professional goals over the past 30 years. With this perspective, we believe current adult learning practitioners will be able to better understand where there has been ample coverage and where this guidance has fallen short in supporting ongoing learning and digital resilience of adult learner-workers. With

[1] Constantakis, Patti (2019, January 25). Tapping Data for Frontline Talent Development. Retrieved July 10, 2020, from https://digitalpromise.org/tapping-data-frontline-talent-development/.
[2] McKinsey & Company (2017). A Future That Works: Automation, Employment, and Productivity. Retrieved July 10, 2020, from https://www.researchgate.net/profile/Mohamed_Mourad_Lafifi/post/What_are_the_theories_of_productivity_for_automation_in_construction/attachment/59d651d879197b80779aa423/AS%3A509446619975681%401498472947867/download/MGI-A-future-that-works-Full-report.pdf.
[3] Digital resilience is defined by the Digital US coalition as "having the awareness, skills, agility, and confidence to be empowered users of new technologies and adapt to changing digital skill demands. Digital resilience improves capacity to problem-solve and upskill, navigate digital transformations, and be active participants in society and the economy."
Digital US (2020). Building a Digitally Resilient Workforce: Creating On-Ramps to Opportunity. Retrieved July 10, 2020, from https://digitalus.org/wp-content/uploads/2020/06/DigitalUS-Report-pages-20200602.pdf.

this additional insight, adult learning practitioners might be better equipped to make affirming and empowering decisions when adopting or designing skills frameworks for those they serve.

Approach

The landscape scan involved a thorough search to gather frameworks covering employability skills, digital literacy, STEM skills, 21st century skills, etc., spanning the past 30 years. Once a framework was found, it was quickly evaluated, and if found to be: addressing the skills of concern; research-, evidence-, or practice-based; and produced by a credible source, it was added to the body of frameworks to be reviewed. A total of 18 frameworks were reviewed, with publication dates ranging from 1991-2020.

Upon completion of the framework search and collection process, the texts of the frameworks were extracted from their presentation documents, publications, and/or websites, and the individual competencies were inventoried[4]. Generally, analysis followed an open coding process,[5] whereby initial categories were extracted from available data (i.e. frameworks) and then continuously refined throughout the process of review. Through a rigorous review of the entire body of competencies, certain competencies began to emerge as those greatest in frequency and emphasis, and those were grouped into categories, each containing more granular subcategories. These categories were adjusted as additional data were added to the review. This "grounded theory"[6] approach was taken because we sought to identify where the greatest coverage, and thus greatest guidance, had been afforded to adult learner-workers via practitioner use of these frameworks. Two of the categories are indicated as "framing categories," and contain competencies that are integral and foundational to a given framework, in that it is clear that they are expected to be present throughout the expression of all of the other competencies within the framework. Table 1 displays these results.

Reflections and results

Upon further analysis of the contexts and content of the frameworks and their competencies, some trends emerged. These trends are important because they illuminate some of the ways in which thinking in the field has shifted around how skills competencies are conceptualized in relation to adult learners in general, and more specifically, how competencies such as digital literacy and self-awareness are being understood in a more nuanced fashion. Investigating these trends invites reflection on how competency frameworks might better apply to the real, complex lived experiences of adult learners, and how we might better model future frameworks to serve them more effectively.

[4] See Appendix A for a list of analyzed frameworks. See Appendix B for the spreadsheet of sorting data.
[5] Corbin, J., & Strauss, A. (2015). Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory, 4th edition. Los Angeles: Sage.
[6] Ibid.

DIGITAL LITERACY DEVELOPMENTS

Before 2015, digital literacy as expressed in these competency frameworks was primarily focused on employing basic device functions and being able to apply technology to generic work-related activities. From around 2015 onward, digital literacy started being presented in less utilitarian terms and as more integral to competencies that are not explicitly digitally oriented. In other words, "digital literacy" began to be conceptualized as more than simply "technology use," broadening to include other skills such as collaboration and communication. Additionally, post-2015 digital literacy competencies began to frame digital work in general within terms of ethics and cultural awareness. When looking at the whole body of competency frameworks reviewed, which ranges in publication year from 1991-2019, the vast majority of digital literacy competencies were present post-2015.

Examples

- The following two competencies exemplify the pre-2015 approach to digital literacy – functional and somewhat generic:
    - "Use technology to enhance productivity." Common Career Technical Core, Career Ready Practices, 2014, pg. 7
    - "Selecting, using, and maintaining tools and technology to facilitate work activity," Common Employability Skills, A Foundation for Success in the Workplace, 2014, pg. 3
- And these two competencies show the post-2015 shift toward more ethically grounded, integrated digital literacy:
    - "Understanding issues related to computers and the internet being used at work, home, and school: ergonomics, security, ethics, internet etiquette," Living Online, Certiport IC3 Digital Literacy Certification Objectives, 2016, pg. 2
    - "Understand the importance of access and equity in computing," South Carolina Adult Education Digital Literacy Standards, 2018, pg. 10

INTERSECTING SKILLS

Many of the more recent frameworks began to take on the challenge of how to articulate complex skills that actually sit at the intersection of multiple skills at once, rather than being concerned with one skill at a time. This may be a logical development, as it is easy to imagine many scenarios in which a learner – particularly an adult learner – might need to perform multiple skills to be successful in a given personal, academic, or professional situation. It could even be argued that most of the competency categories outlined at the beginning of this document do not function one-by-one in isolation at all, but rather fluidly come to bear on one another given the particular contexts and conditions the learner is facing. In essence, skills like creativity, communication, and digital literacy often work in conjunction with each other and, as such, blur hard and fast lines delineating one from others.

Examples

The following two competencies illustrate the nature of competencies that address more than one, isolated skill category:

- **Digital literacy and critical thinking:** "Digital literacy and computer science: computer science concepts are integrated into STEM content when appropriate (e.g., as part of problem solving, critical thinking, and logic-based reasoning). ," New York Academy of Sciences STEM Education Framework, 2016, pg. 10
- **Creativity and self-awareness**: "Composing or generating content using creativity and confidence in self-expression, with awareness of purpose, audience, and composition techniques." Essential Competencies of Digital and Media Literacy (in Learner at the Center of a Networked World)

FRAMING CATEGORIES

This scan also revealed competencies that were integral to a given framework and yet foundational in nature, in that it was clear that they were expected to be present throughout the expression of all competencies within a given framework. We refer to the categories of these skills as "framing categories," meaning that they do not describe a specific behavior, but rather describe foundational understanding of oneself and the world that should ground learners' expression of all other competencies. In Table 1, these categories are Ethics and Cultural/Global Awareness and Self-Awareness.

Examples

- **Foundational citizenship:** "Personal, social, and civic responsibility," EnGauge 21st Century Skills, 2003, pg. 12
- **Emotional self-regulation:** "Sets and prioritizes goals that reflect a self-awareness of one's capabilities, interests, emotions, and/or needs," MHA Labs 21st Century Skill Building Blocks, 2012, pg. 1

ALTERNATIVE APPROACHES TO PRESENTATION/VISUALIZATION

In some cases, the linear, list-like presentation of the competencies in these frameworks served to hinder the more complex expression of the ideas they actually contained. Although the simplicity of such lists offer benefits to adult educators who may be looking to align education and training opportunities to required skills, it can be helpful to review alternative framework models for ideas. Generally, these alternative models present a greater sense of interrelatedness among categories and concepts, allowing for more dynamic relationships among skills. Such complexity may better model the nature of work and learning, and thus offer benefits to the conceptualization of new competency frameworks.

Examples

- TPACK Framework: What is TPACK?
- Digital Blindspot: How Digital Literacy Can Create a More Resilient American Workforce, pg. 11
- Digital Skill Sets for Diverse Users: A Comparison Framework for Curriculum and Competencies, pg. 30

RESULTS

Our analysis of the framework landscape revealed eight categories, all described below. Each category is further detailed in three subcategories.

Information Fluency

Information fluency refers to finding, evaluating, and using information in a fluid and dynamic manner.

INFORMATION FLUENCY

Gathering and Sharing	Identifies, vets, and disseminates information from multiple sources clearly and concisely.
Analytical Thinking	Interprets data in order to make decisions.
Content Knowledge	Applies domain expertise from various fields to solve problems.

Innovation

Innovation refers to applying creative and innovative perspectives, approaches, and solutions to tasks.

INNOVATION

Use of Tools and Resources	Identifies and creatively employs the best tools for completing a task.
Creativity	Produces original work that is thoughtful and imaginative.
Collaboration	Works with others, both on and offline, to develop compelling products and solutions.

Digital Literacy

Digital literacy refers to using technological devices and applying technological solutions when possible.

DIGITAL LITERACY

Computer Fundamentals	Has conceptual knowledge of how a computer functions as well as the ability to use basic applications.
Digital Project Creation	Uses tools across multiple discplines to create useful content.
Intermediate Computing	Can select, use, troubleshoot, and maintain computer equipment and other technologies.

Critical Thinking

Critical thinking refers to analyzing and considering information objectively to be able to reach a conclusion.

CRITICAL THINKING

Analytical Thinking	Interprets data in order to make decisions.
Problem-Solving	Evaluates options and designs solutions based on specific goals.
Time Management	Prioritizes goals and manages tasks to deliver timely results.

Social Abilities

Social abilities refers to interacting and communicating with others in a variety of contexts and conditions.

SOCIAL ABILITIES

Communication	Speaks and listens effectively — both in person and with technology.
Collaboration	Works dynamically with a wide range of individuals and groups.
Problem-Solving	Uses social skills to address conflicts and solve problems with others.

Personal Qualities

Personal qualities refers to displaying enduring personality traits that speak to one's character.

PERSONAL QUALITIES

Responsibility	Complies with rules and expectations of relevant groups and organizations.
Initiative	Creates change and solves problems independently.
Productivity	Works efficiently and without distraction to create strong results.

Ethics and Cultural/Global Awareness

Ethics and cultural/global awareness refers to recognizing diverse perspectives and expressing ethical positions.

ETHICS AND CULTURAL/GLOBAL AWARENESS

Digital Citizenship	Uses technology safely and ethically while connecting with other users.
Responsibility	Makes choices that reflect strong personal ethics and cultural sensitivity.
Understanding	Knows the complexities of equity, security and diversity in a digital world.

Self-Awareness

Self-awareness refers to demonstrating conscious awareness and knowledge of oneself.

SELF-AWARENESS

Self-Management	Sets reasonable goals and achieves them independently.
Analytical Thinking	Is aware of one's own perspective when learning about the components of a problem.
Curiosity	Explores and evaluates ideas with the goal of understanding more about the world.

Note: Ethics and Cultural/Global Awareness and Self-Awareness are framing categories, which are defined in more detail in the "Reflections" section.

Conclusions

The SkillRise Landscape Scan offers an overview of 30 years of skills frameworks oriented toward adult learning, digital literacy, employability skills, etc., and offers a selection of key reflections and trends spanning the material reviewed.

Key takeaways include:

1. There is an identified set of categories that describe major competency frameworks related to adult learning. These categories include subcategories that target more specific skills needed for today's working learner.
2. Digital literacy has moved past "tech use" to include skills associated with how we work and live, and skills are necessarily interconnected.
3. Greater use of "coexistent competencies" and competencies that fall within "framing categories" show support of a more nuanced understanding of adult learners.
4. Use of alternative presentation and visualization techniques could help support a better and more dynamic understanding of the interconnected nature of many skills.

Our hope is that this resource, in conjunction with the SkillRise Profile of a Lifelong Learner, can be used by adult education and workforce development organizations across the country to aid in their development of locally adapted skills frameworks.