Digital Equity in Libraries: Understanding the Problem Solving Skills of Adults

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Welcome & Thanks for Attending

Norms & Conventions

Presentation with Zoom - 40 minutes
Session will be recorded

- Online attendees will be muted
- Please add questions and comments in chat box. We will be monitoring it.

- Discussion - 20 minutes
Digital Equity in Libraries: Understanding the Problem Solving Skills of Adults

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Advancing Digital Equity in Public Libraries

- Amy Honisett
- Vailey Oehlke
- Matthew Timberlake
- Judy Anderson
- Cindy Gibbon
- Stephen Reder
- Tyler Frank
- Stephanie Miller
Advancing Digital Equity in Public Libraries

Where We’re Heading

- Purpose of the Project
- Partnership Building to link libraries to PIAAC
- What is Digital Problem Solving?
- Quantitative Findings
- Qualitative Findings
- Emerging Conclusions and Implications
Advancing Digital Equity in Public Libraries

National Leadership Grant

- **Digital literacies** are vitally important in today’s digital world

- The **library is a community anchor** and provides digital access and training

- **Use data** to examine digital problem solving and improve library practices, programs, and services for adult patrons

- **Link libraries** to PIAAC networks
Researchers & Librarians Working in Partnership

Shared Priorities

- Free Access To All
- Trusted Guide for Learning
- Advocate for Reading

- Digital Equity
- Devices
- Broadband
- Skills Training

*Creation & Learning
*Digital Literacies
What is PS-TRE?
Problem solving in technology rich environments

Using digital technology, communication tools and networks to **acquire and evaluate information**, **communicate** with others and **perform practical tasks** in

**Personal, Workplace, Civic** situations
Problem Solving in Technology Rich Environments

What do we know?

PS-TRE strategies are different than basic digital literacies.

What do we need to know?

PS-TRE strategies are context dependent.

What cognitive and other strategies are needed for PS-TRE?

PS-TRE strategies need to be flexibly applied in an ever-changing technological landscape.

How can PS-TRE strategies be supported, learned, and practiced in libraries?

How can learning be designed to maximize the application of these strategies in meaningful ways?

What do we know?

What do we need to know?
What materials are we creating?

What **cognitive and other strategies** are required for PS-TRE?

What are the contexts where **PS-TRE could be supported, learned and practiced** in libraries?

**Typology of PS-TRE strategies aligned with stances** toward digital problem solving

**Blueprint for designing PS-TRE tasks** in libraries

**Illustrative examples** of different ways PS-TRE strategies are applied in libraries and in incidental learning contexts

**How can learning be designed** to maximize the application of these strategies in meaningful ways?
Sample Patrons and Collect data

Inform Access & Training

Interpret Scores

Survey for Multnomah County Library

* Required
Who did we sample?

Background survey ($N = 464$)
- Face-to-face in library branches
- Face-to-face in library outreach community
- Survey link distributed using the library’s newsletter

PSTRE ($N = 197$)
Invitation to Take PS-TRE

- Participant consent
- Basic digital literacy skills
  - Use a mouse
  - Highlight, cut/copy, paste
- Ability to read/write in English
  - The Spanish language assessment used an academic register
  - Staff pilot suggested that the MCL Spanish speaking patrons would struggle with the Spanish version
Examining The Digital Problem Solving Skills of Our Patron Population

N=181 MCL participants

Using digital technologies, communication tools, and networks to acquire and evaluate information, communicate with others and perform practical tasks in Personal, Workplace, Civic situations.
Sort emails into pre-existing folder using given criterion

Level 1
- 12.8%
  - N=25

Level 2
- 41.4%
  - N=80

Level 3
- 39.5%
  - N=77

Manage requests to reserve meeting room using a reservation system. Discover schedule conflict, e-mail to decline the request.

Below Level 1
- 3.6%
  - N=7
Do you access the Internet mostly from a mobile device?

Yes (N=88)

- Level 3: 2%
- Level 2: 34%
- Level 1: 48%
- Below level 1: 16%

No (N=90)

- Level 3: 4%
- Level 2: 48%
- Level 1: 37%
- Below level 1: 11%
From where do you access the Internet most often?

Library (N=50)

Work (N=17)

Home (N=97)

N=164 MCL participants
When I’m doing something online...

- Below level 1:
  - Almost always get stuck (N=8)
  - Can figure it out but it's really hard (N=9)
  - Can usually figure it out (N=147)

- Level 1:
  - Almost always get stuck (N=8)
  - Can figure it out but it's really hard (N=9)
  - Can usually figure it out (N=147)

- Level 2:
  - Almost always get stuck (N=8)
  - Can figure it out but it's really hard (N=9)
  - Can usually figure it out (N=147)

- Level 3:
  - Almost always get stuck (N=8)
  - Can figure it out but it's really hard (N=9)
  - Can usually figure it out (N=147)
Differences between higher and lower skilled groups: LCA

**Desired Skills:** Participant perception of whether they have the skills they need to accomplish their goals.

**Self-efficacy:** Participant perception of whether they are able to accomplish their goals.

**Library Website Use:** Set of questions about ease of library website use.
What do the Problem Solving in Technology-Rich Environments Questions Measure?

The Problem Solving in Technology-Rich Environments questions measure how well you use different types of technology to solve everyday problems and complete tasks to successfully meet your goals. They also measure how well you understand and use information in different environments, such as email, Web pages, or spreadsheets. In this test, a problem is any situation where you don’t already have a good idea about how to achieve a goal. This may be because the strategy to use is not obvious to you or because you have never tried such a task in the past. As you have more practice in meeting different goals using technology, those tasks that were once problems will become automatic and routine for you.

Most adults use problem-solving in technology-rich environments skills to find information or answer questions, use online tools and functions that can make tasks easier, and communicate with others. For example, you are using these skills when you:

- Read and answer emails from friends or co-workers
- Search for a website with information about treatment for a medical issue
- Use a spreadsheet to set up a budget and keep track of spending
Qualitative Protocol and Analysis

Focus on Patron Problem Solving

Develop Observation Protocol and Library Tasks

Create Analysis Tool and Conduct Analysis
Designing Digital Tasks Aligned to the PSTRE Framework

Planning

- Goal Setting
- Acquiring & Evaluating Information
- Pragmatic Knowledge

MedlinePlus (Website)

Use this resource to find:
- Information about diseases and conditions, including clinical trials
- Information about alternative and conventional treatments
- Drug information
- Doctor and hospital directories
- Health organizations
- Links to the latest medical research
- News articles and general information on a variety of health and nutrition topics
- Anatomy and surgery videos (watch your upcoming surgery!)

Written for the layperson, MedlinePlus from the National Library of Medicine is one of the best places to start your search for medical information.
Problem Solving Stance

People may have a preferred stance or tendency, but stance is

- **situationally dependent** and can shift according to **context and needs**
- may be impacted by the “stakes” and **purpose**
- may embody a state of **confidence** (or lack thereof).
  - Difference between being confident in what they know (discrete skills such as how to use spreadsheets), and confidence in the ability to figure it out as you go along.
Problem Solving Stances:
The Schematic Problem Solver

Task: Find information about the Zika virus on Medline Plus

“I wouldn’t use it [database/internet] this way, I would use Google.”
Problem Solving Stances:
The Exploratory Problem Solver

Task: Finding a Class at the library

“It [the set of tasks] was teaching me and having me recognize my limitations and abilities... that I can pick up new things I can use.”
“It almost makes me anxious that I know I should be able to do this job but I can’t. It’s like when you’re fixing your car and you watch the YouTube videos to change your oil or do whatever, you get all the parts from the parts store, and for some reason it’s just not working like in the video. I figure out another way because working stressed out is going to make me work less efficient.”
Digital Problem Solving Stances

- Learn through Experience
- Exploratory
- Procedural
- Schematic
- Flexible
- Good Enough

equity
Digital Problem Solving

Context & Relevance
Stance affects how an individual approaches resources.
Local Implications

Principled Adaptations for Library Contexts

International & National Efforts

Deepening, Broadening and Expanding Collaboration and Partnerships to Increase Longevity and Impacts on Digital Equity
Discussion, Questions, and Connections

Thank You!

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