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Advancing Digital Equity in Public Libraries: Assessing Library Patrons' Problem Solving in Technology Rich Environments

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

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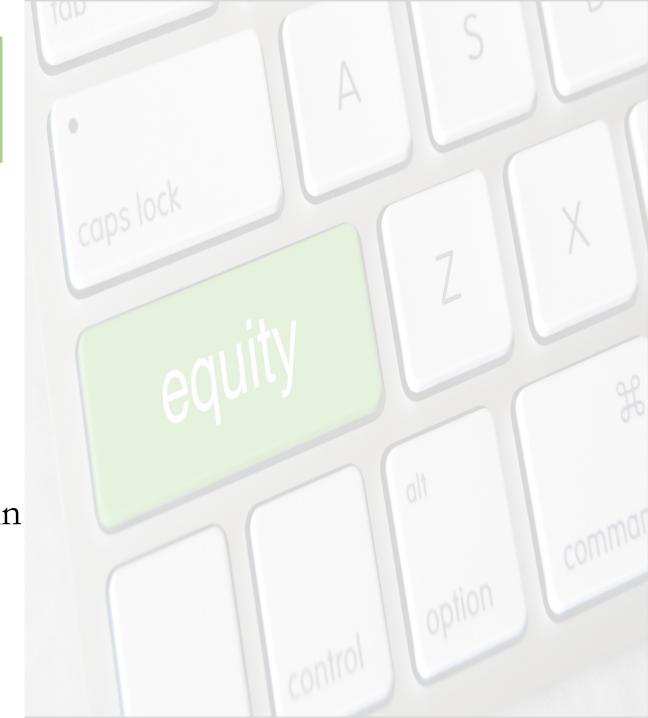
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Welcome & Thanks for Attending

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

equity

Jill Castek, University of Arizona
Gloria Jacobs, Portland State University/University of Arizona
in Collaboration with Multnomah County Library, Portland, OR
and Consultant, Stephen Reder, Portland State University

Advancing Digital Equity in Public Libraries









- Amy Honisett
- J

• Vailey Oehlke

- Matthew Timberlake
- Judy Anderson

- Cindy Gibbon
- Stephen Reder
- Tyler Frank
- Stephanie Miller

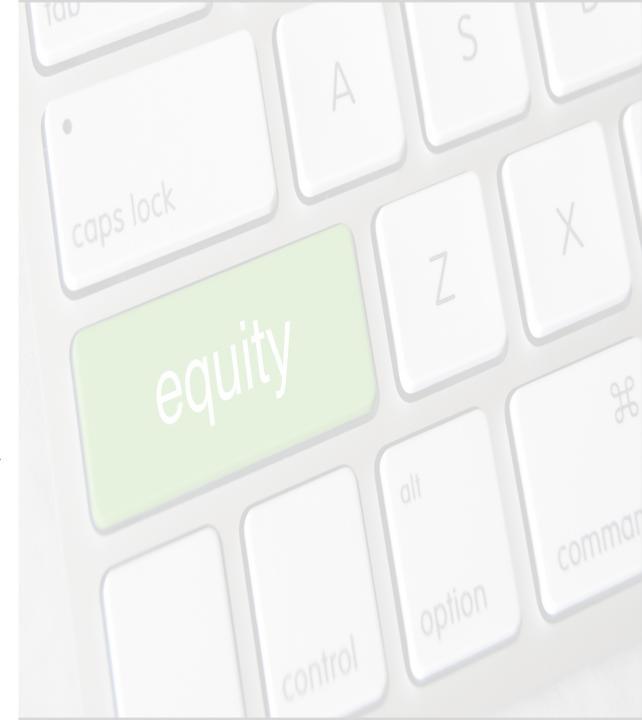


Advancing Digital Equity in Public Libraries



Where We're Heading

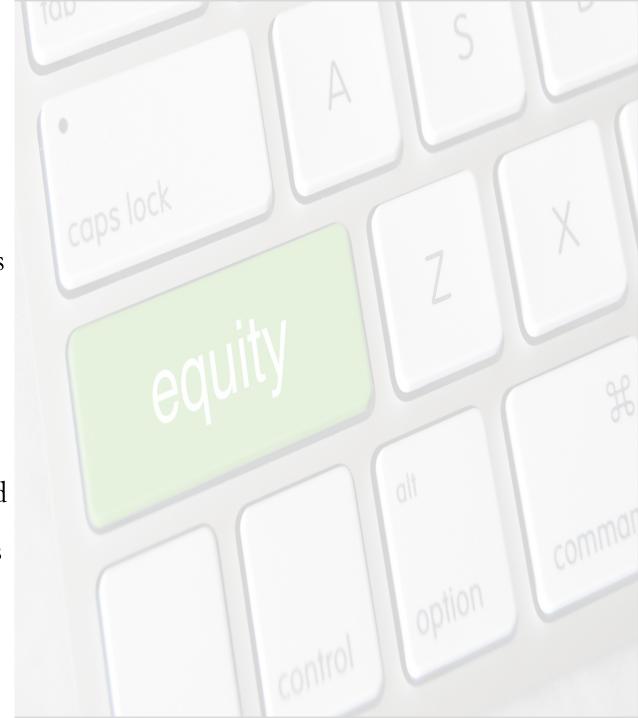
- Purpose of the Project
- Partnership Building to link libraries to PIAAC
- What is Digital Problem Solving?
- Quantitative Findings
- Qualitative Findings
- Emerging Conclusions and Implications



Advancing Digital Equity in Public Libraries

National Leadership Grant

- **Digital literacies** are vitally important in today's digital world
- The <u>library is a community anchor</u> 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

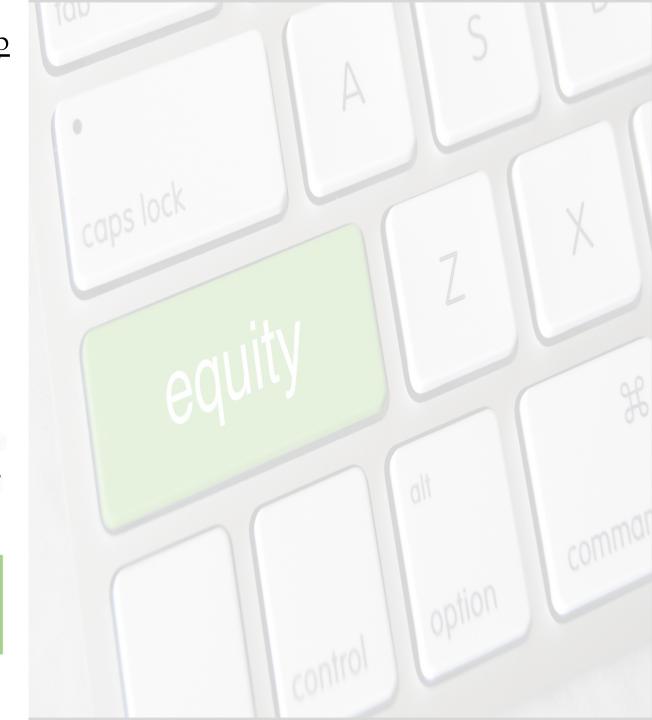
Digital Equity



Broadband Skills Training

*Creation & Learning

*Digital Literacies

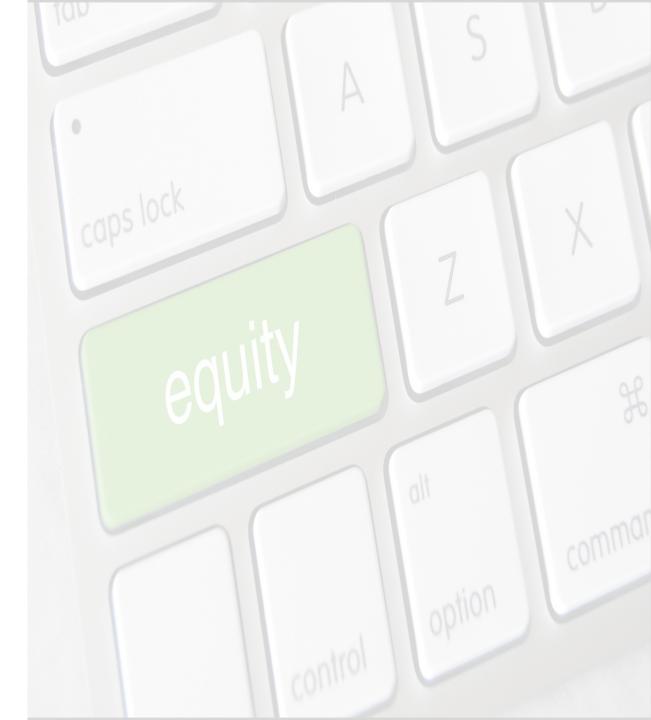












What is PS-TRE?

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

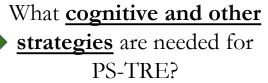


Problem Solving in Technology Rich Environments

What do we know?

What do we need to know?

PS-TRE strategies <u>are</u>
<u>different</u> than basic
digital literacies



PS-TRE strategies are **context dependent**

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

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

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



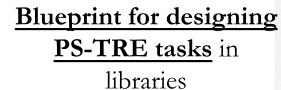
What materials are we creating?

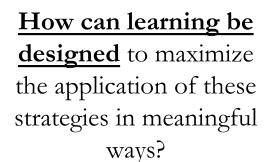
What <u>cognitive and</u> <u>other strategies</u> are required for PS-TRE?

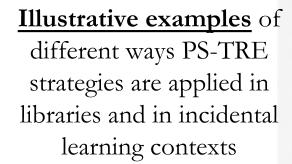


Typology of PS-TRE
strategies aligned with
stances toward digital
problem solving

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













Education & Skills Online Assessment

Survey for Multnomah County Library

* Required



Sample Patrons and Collect data

Interpret Scores

Inform Access & Training

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)

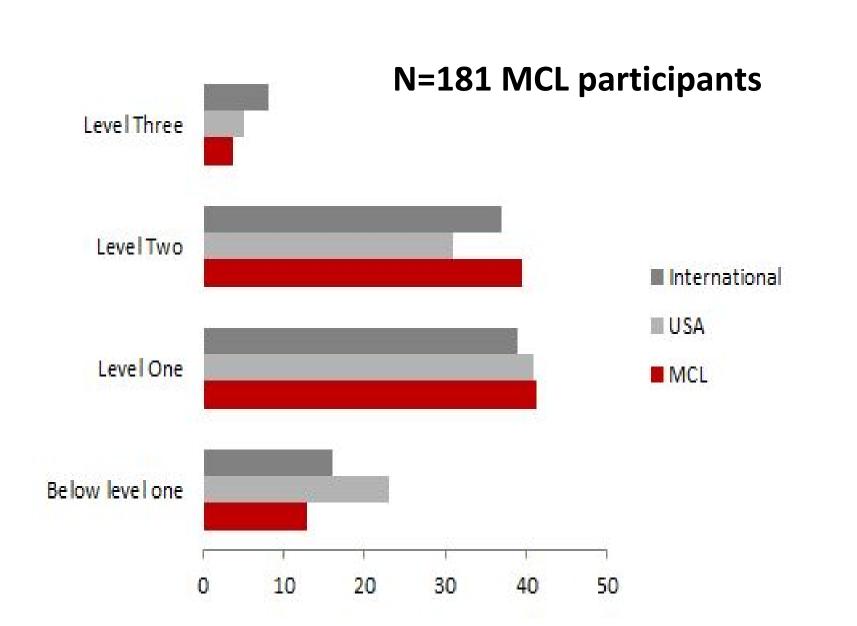


Invitation to Take PS-TRE

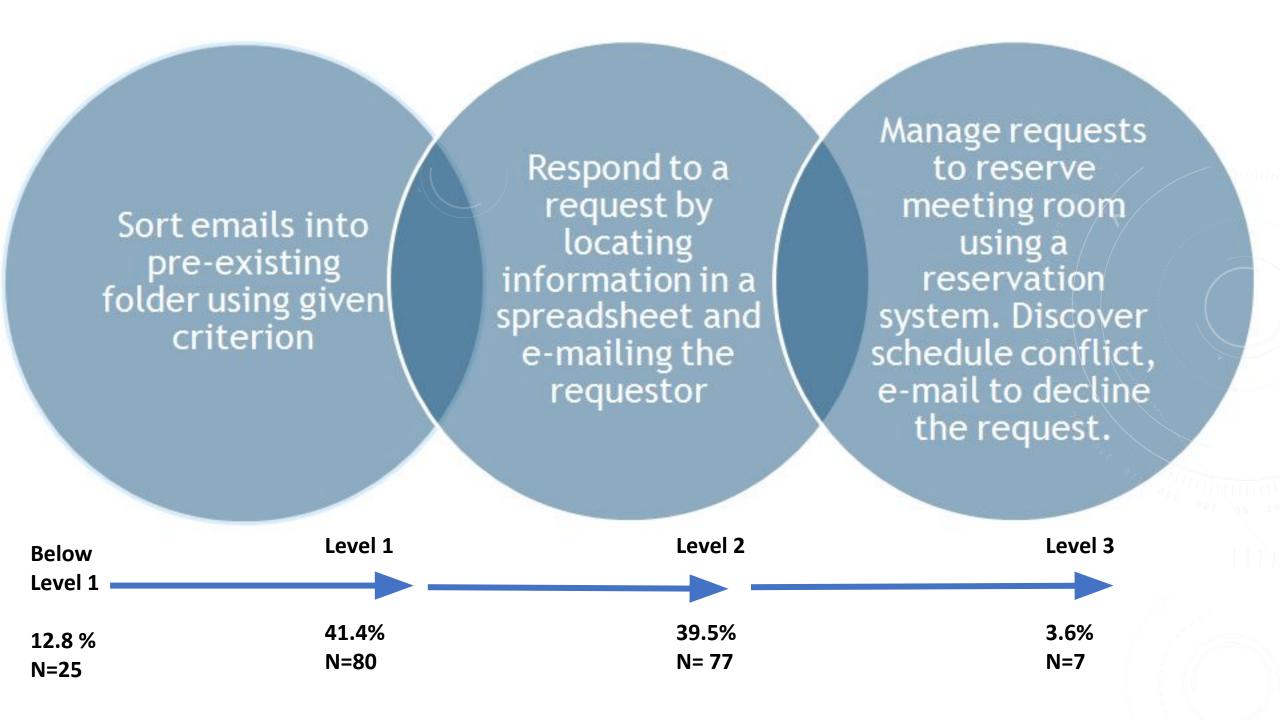
- Participant consent
- Basic digital literacy skills
 - Use a mouse
 - O Highlight, cut/copy, paste
- Ability to read/write in English
 - The Spanish language assessment used an academic register
 - Staff pilot suggested that the MCL
 Spanish speaking patrons would
 struggle with the Spanish version

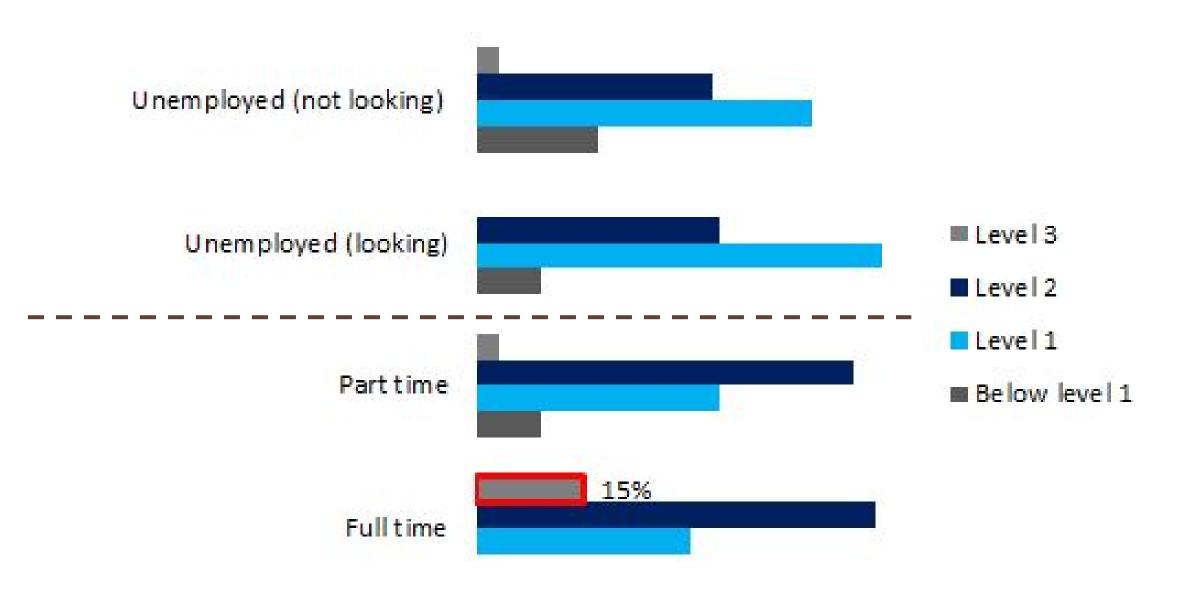


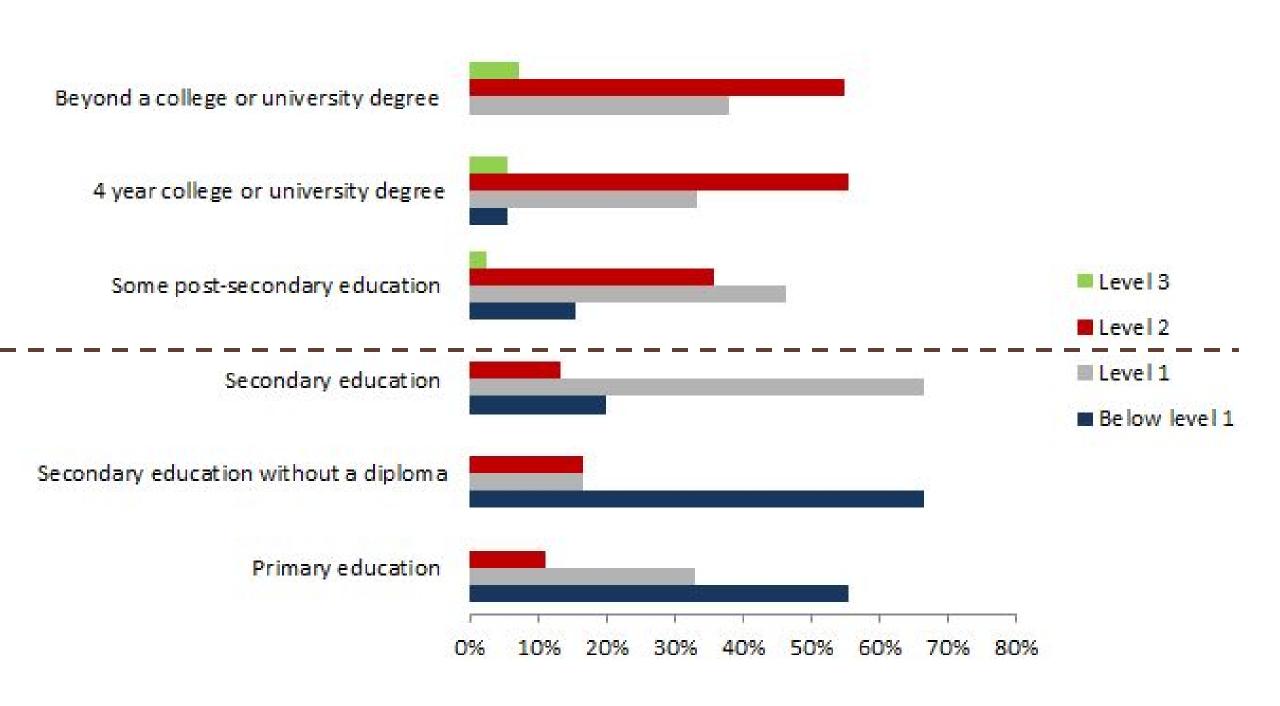
Examining The Digital Problem Solving Skills of Our Patron Population



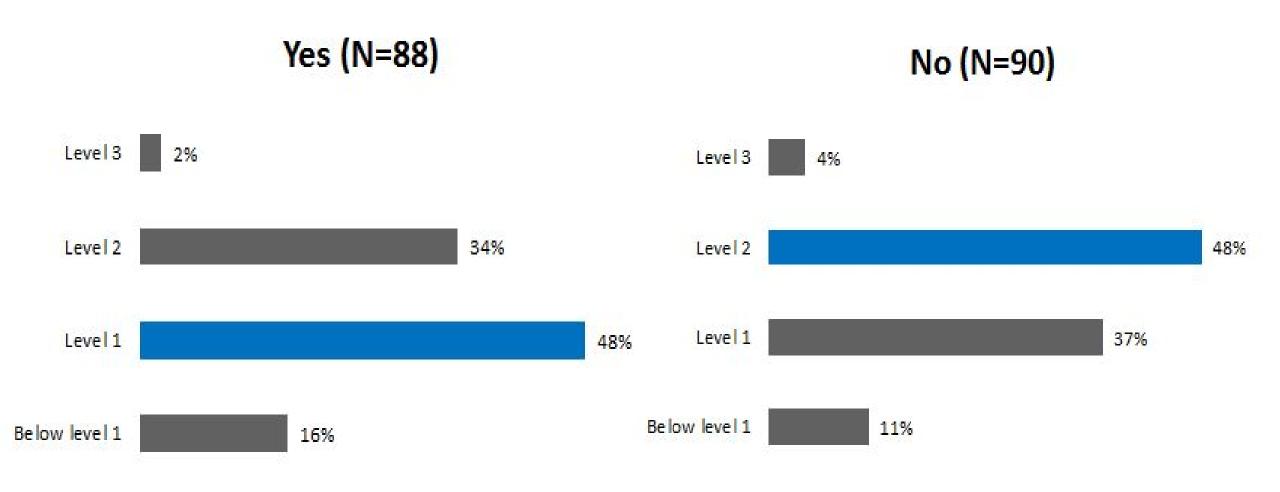
Using digital technologies, communication tools, and networks to acquire and evaluate information, communicate with others and perform practical tasks 111 Personal, Workplace, Civic situations



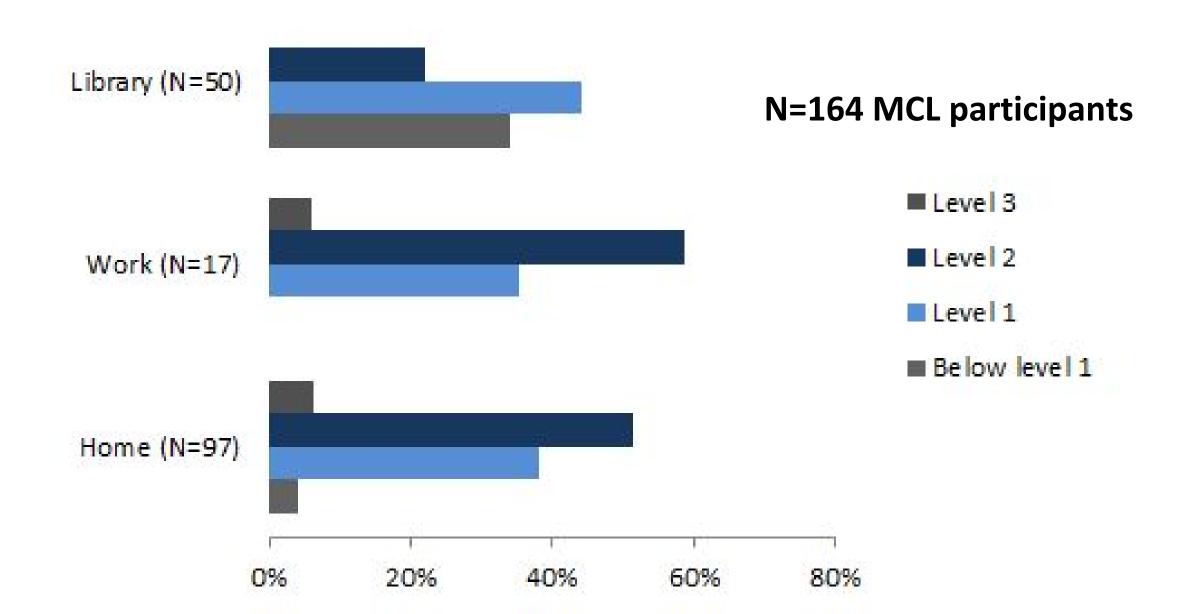




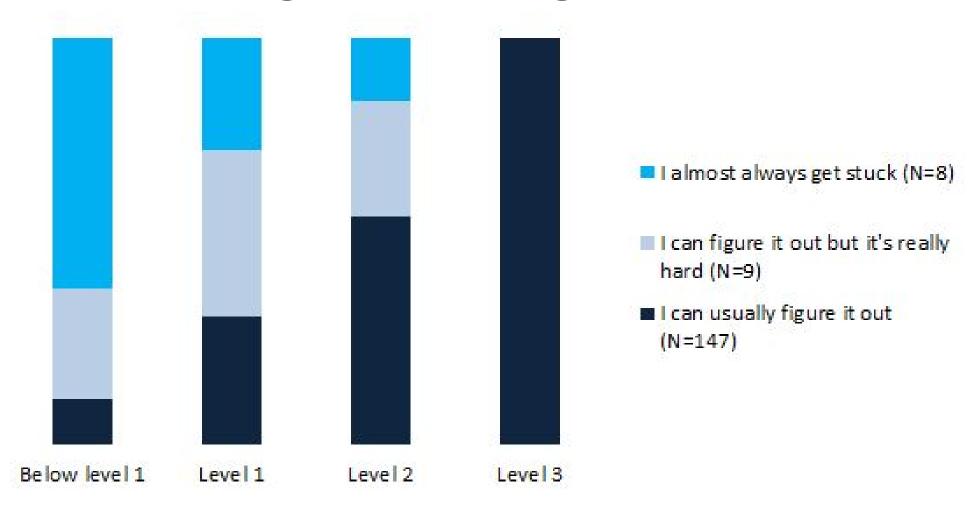
Do you access the Internet mostly from a mobile device?



From where do you access the Internet most often?



When I'm doing something online...



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

Set of questions about ease of library website use.

Group Differences: Library Website Use 0.0 0.8 Item Response Probabilities 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0

Higher

Scoring

Lower

Scoring

9

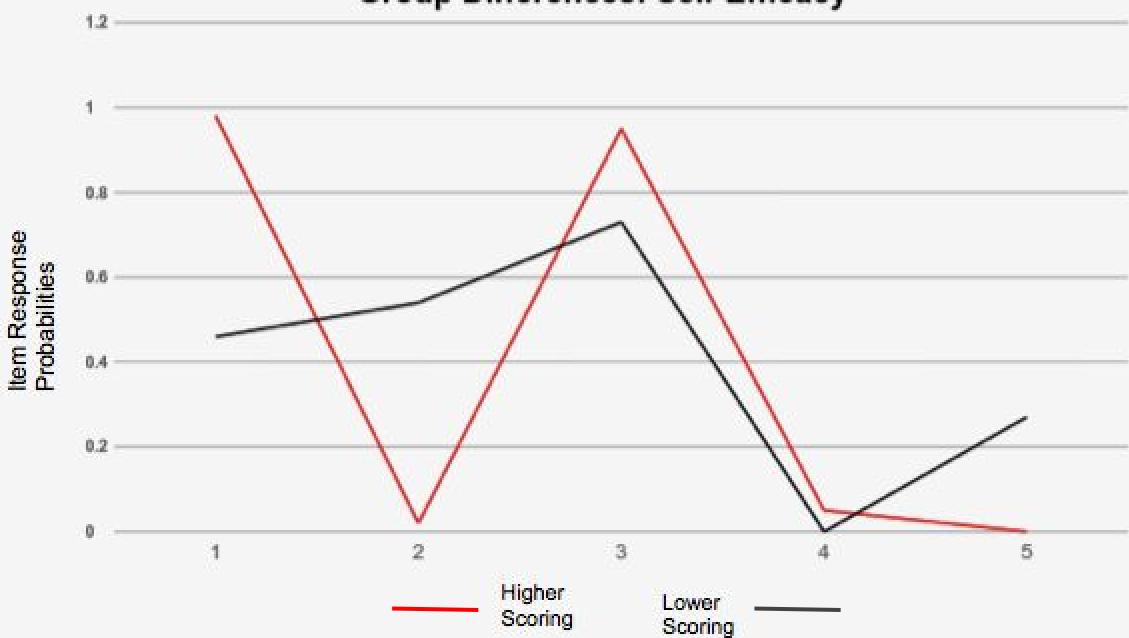
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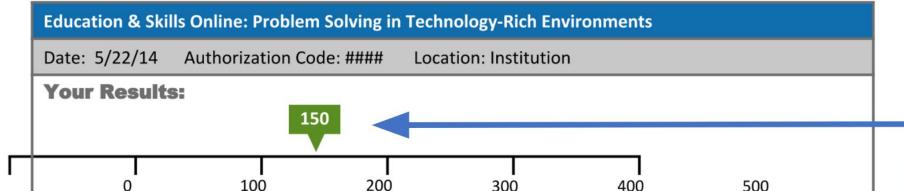
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Group Differences: Self-Efficacy







What do the Problem Solving in Technology-Rich Environments Questions Measure?

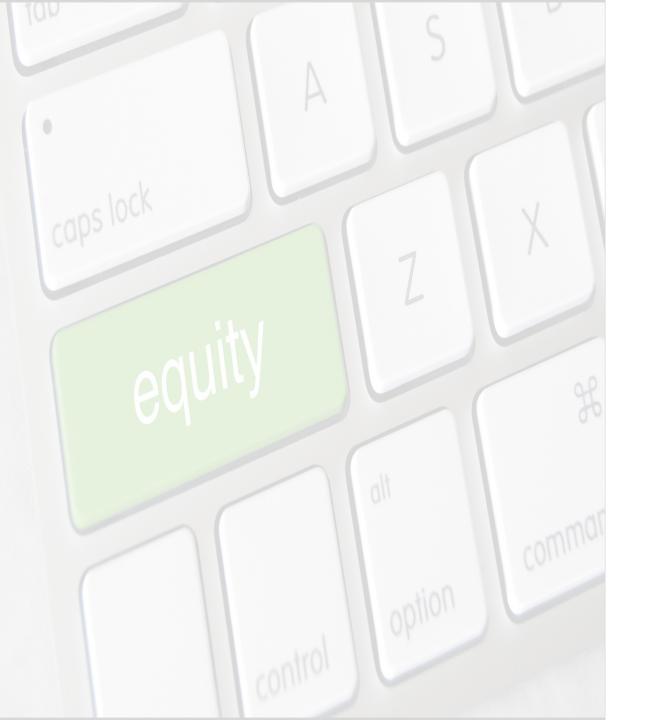
The **Problem Solving in Technology-Rich Environments** questions measure how well you use different types of technology to solve everyday problems and complete tasks to successfully meet your goals. They also measure how well you understand and use information in different environments, such as email, 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

Standard reporting yields a score

Unpacking digital problem solving competencies is more complex than a single score can offer

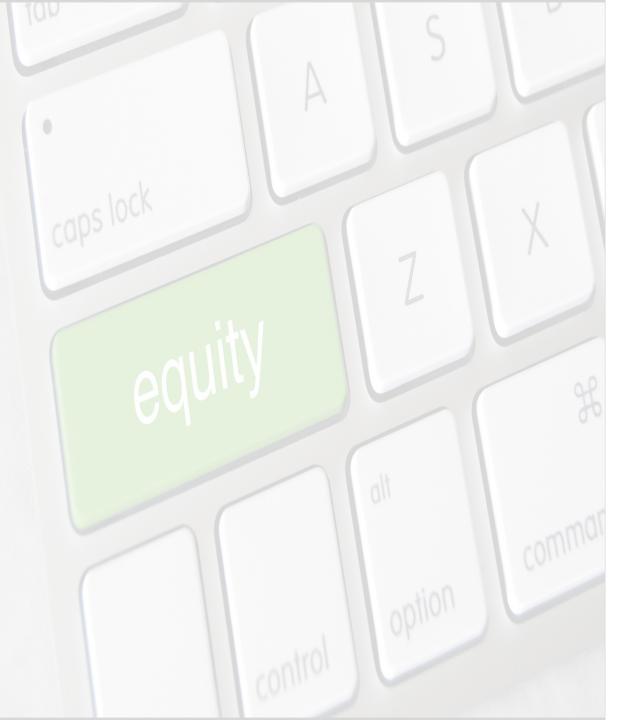


Qualitative Protocol and Analysis

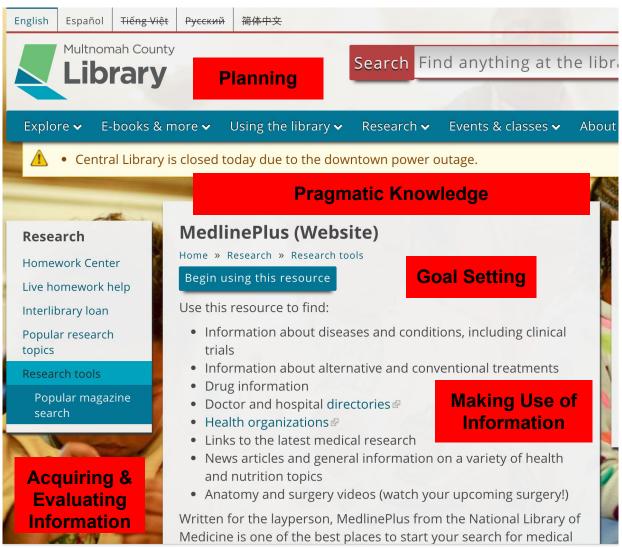
Focus on Patron Problem Solving

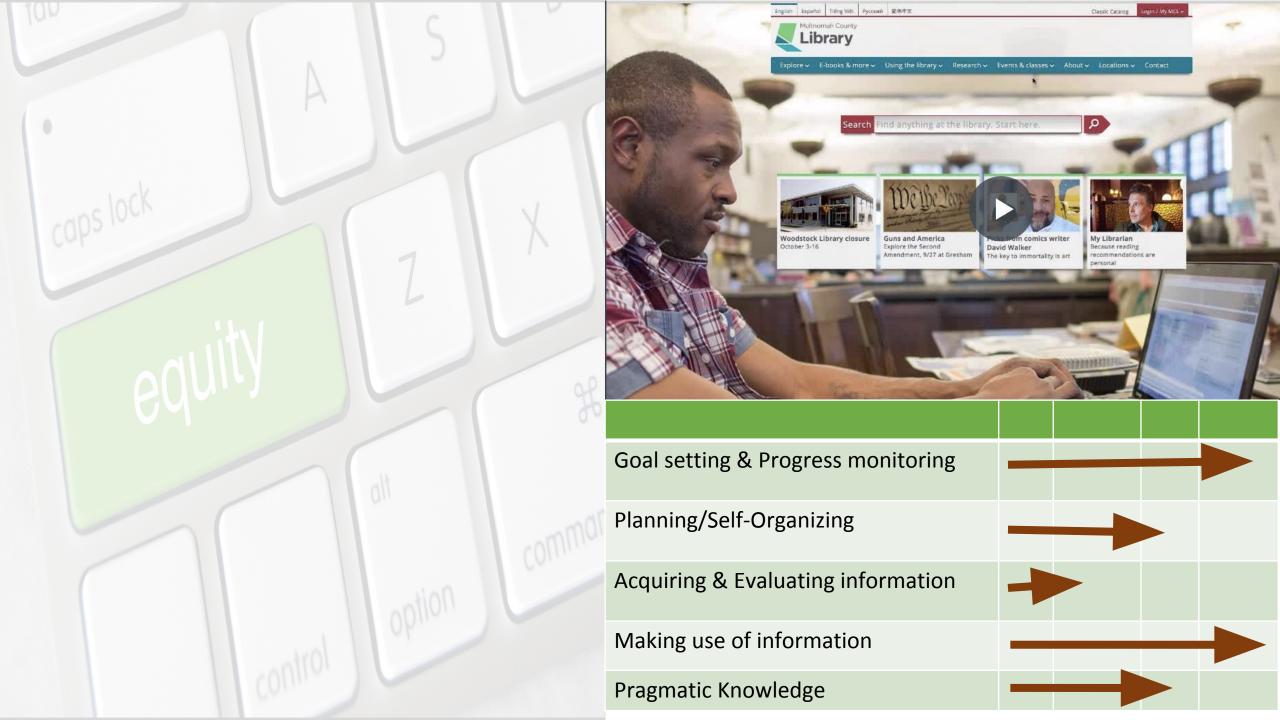
Develop Observation
Protocol and Library Tasks

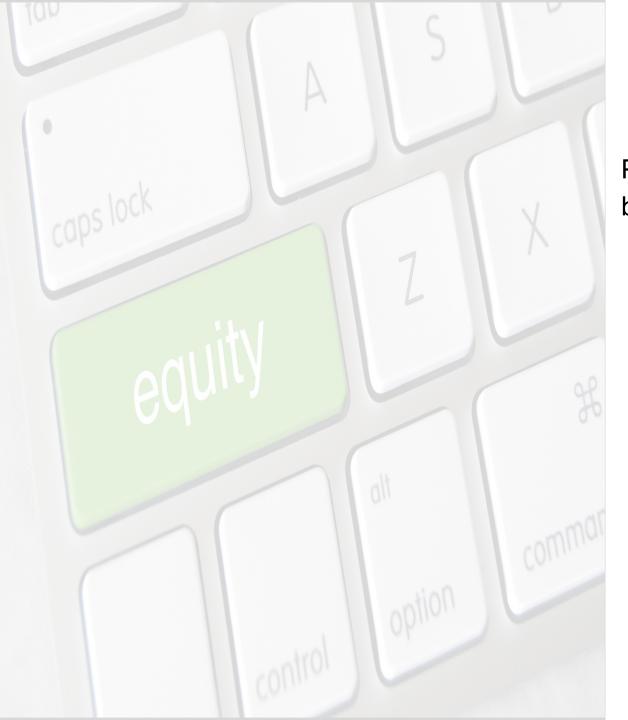
Create Analysis Tool and Conduct
Analysis



Designing Digital Tasks Aligned to the PSTRE Framework



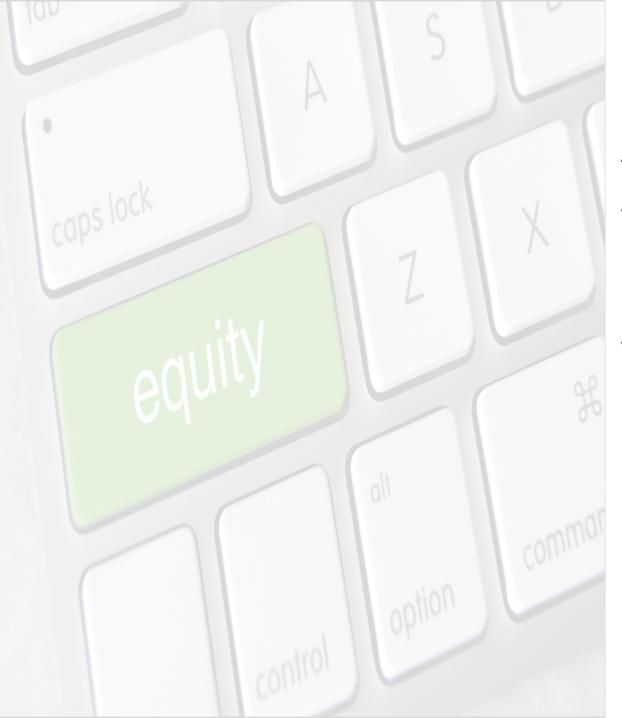




Problem Solving Stance

People may have a **<u>preferred stance or tendency</u>**, but stance is

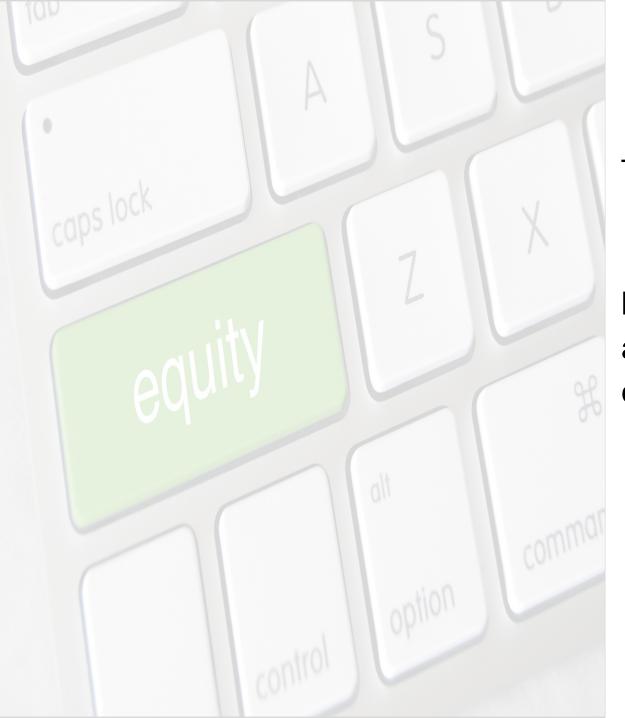
- situationally dependent and can shift according to context and needs
- may be impacted by the "stakes" and <u>purpose</u>
- may embody a state of <u>confidence</u> (or lack thereof).
 - Difference between being confident in what they know (discrete skills such as how to use spreadsheets), and confidence 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

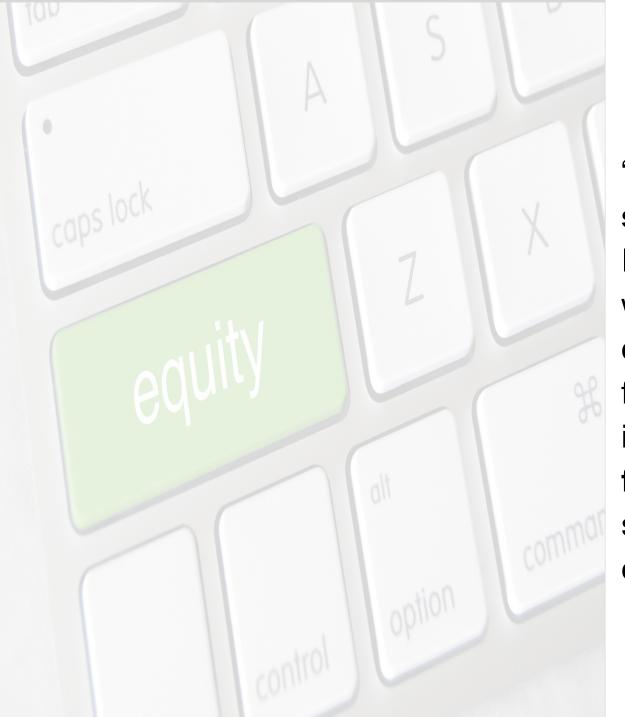
"I wouldn't use it [database/internet] this way, I would use Google."



Problem Solving Stances: The Exploratory Problem Solver

Task: Finding a Class at the library

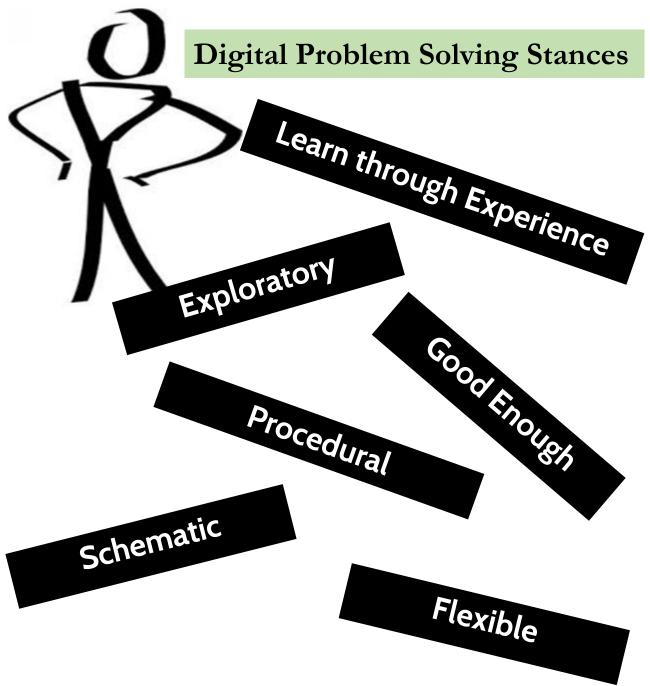
"It [the set of tasks] was teaching me and having me recognize my limitations and abilities... that I can pick up new things I can use."

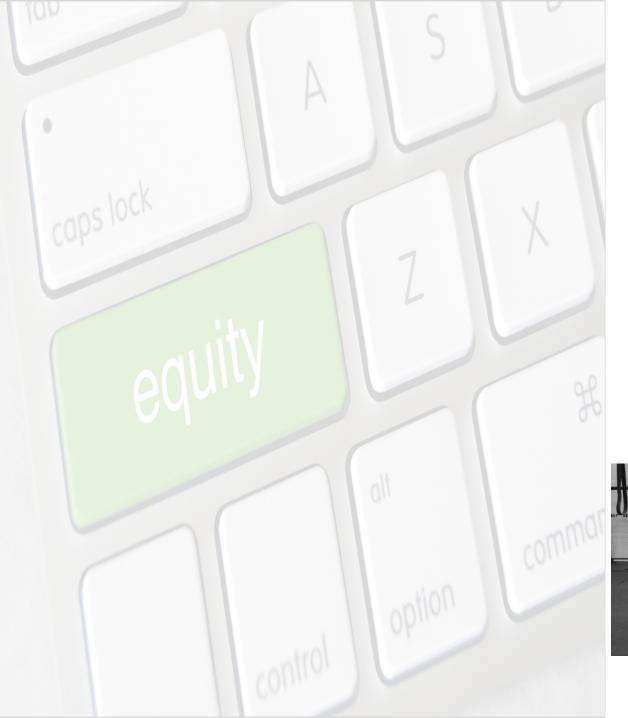


Shifting Problem Solving Stances: An Example

"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."





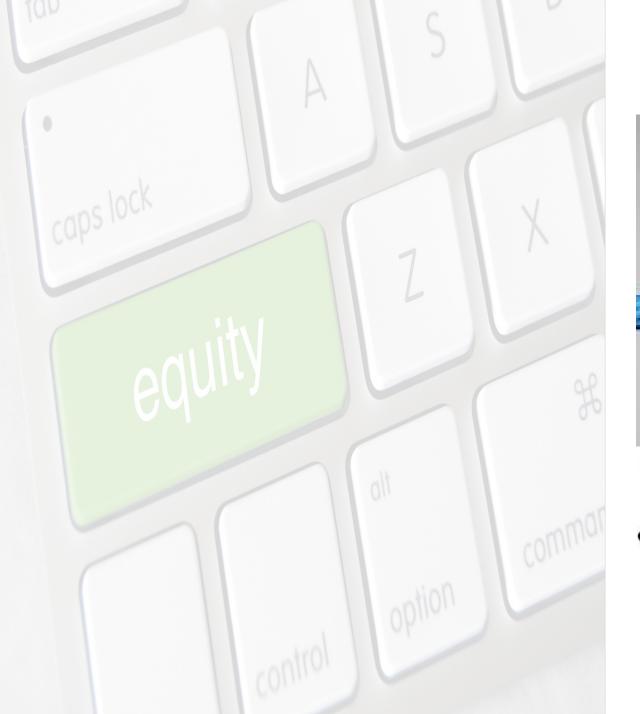


Digital Problem Solving

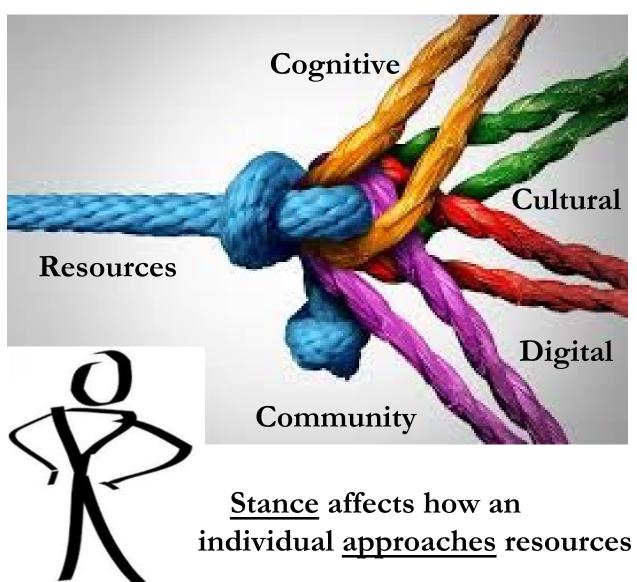


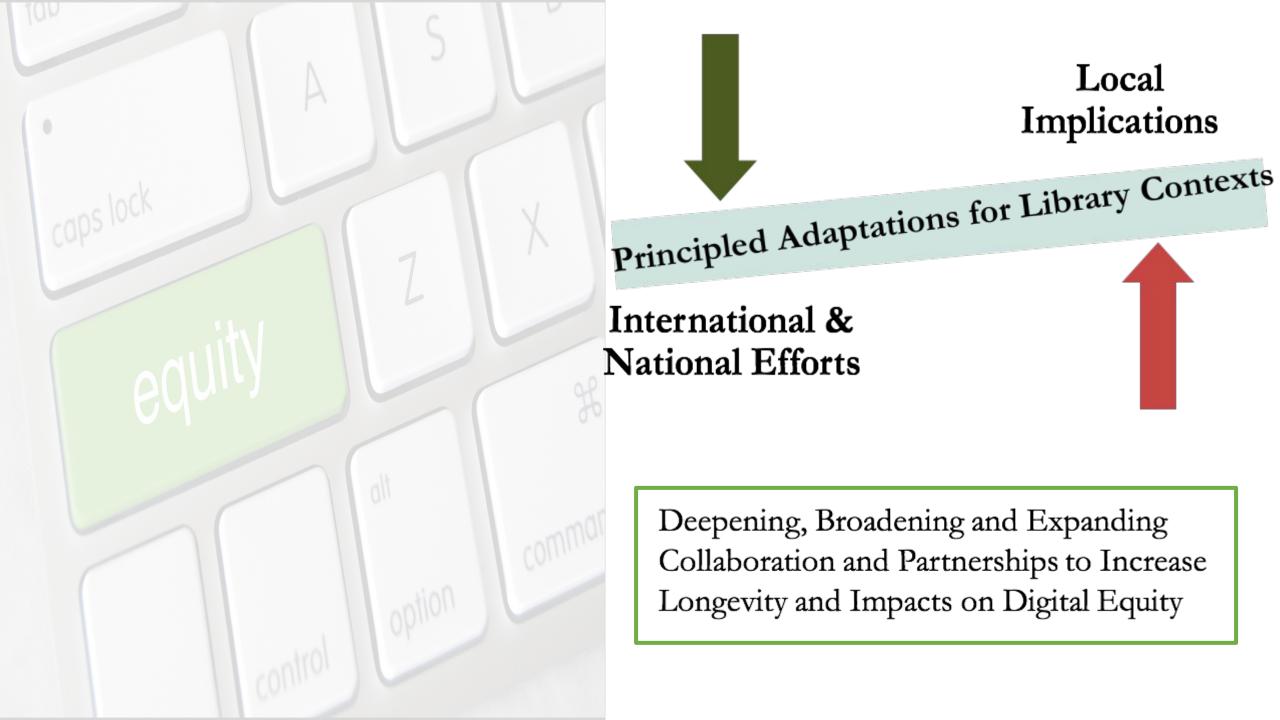






Digital Problem Solving





Discussion, Questions, and Connections

equity

Thank You!

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