How Do Adults Acquire Digital Literacy Skills? Exploring Tutor-facilitated Learning and Teaching Within Community-based Organizations

Literacy, Language, and Technology Research Group, Portland State University
Jill Castek, Gloria Jacobs, Stephen Reder, Andrew Pizzolato, Elizabeth Withers, Kimberly Pendell

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o through projects that focus on the acquisition of
  ▪ literacy
  ▪ digital literacy - the ability to use Information Communication Technologies (ICTs) to find, understand, evaluate, create and communicate digital information (both cognitive and technical)
  ▪ second languages among adults
  ▪ economically vulnerable and socially excluded populations
Study Background

- **Technology** has a growing importance in how people access information and communicate with one another.

- ICTs play a central role in our modern age, permeating every aspect of our social and workplace lives.

- Being online connects us to educational opportunities, public services, healthcare, civic engagement, and entertainment.

- **Ensuring that all citizens acquire digital literacy is a national priority.**
Improving adult digital literacy is fundamental to society in that it confronts adults’ issues of exclusion and marginalization that accompany the increasing importance of digitally mediated activities in modern social life. For individuals who are xxxx, yyy, zzzzz, who have been unsuccessful in other learning contexts organizing learning environments in ways that ensure the success of these individuals is critical. And that critical component is tutor facilitation.
internet use remains strongly correlated with age, educational attainment, and household income (Pew and American Life project, 2013). Our project and our partners it in have been reaching out to those individuals who may not have seen the relevance in technology before (e.g., seniors, language learners, those who had previously been employed but now are job seekers) to support their digital inclusion. The support provided addresses several aspects of usability -- how to become fluent and facile with the technology to build skills in order achieve other life aims (educational, and personal goals). National broadband plan has same three reasons. Most recent piece in a trajectory of work. Some trigger has gotten them into a class.
These findings suggest that goal-directed learning that is self-paced and tutor-facilitated may be one way to meet the needs of learners who require additional support for learning new skills. But learner-directed activity takes several forms and tutor facilitation can mean many different things to many different groups. What do these concepts look like in practice and how can educational entities and community based organizations offer such support?

While K-12 education is important, as the PIAAC findings suggest – adult literacy levels are low compared to international counterparts and we need to invest more efforts in supporting the skills of adult learners.
Web based learning platform

- Designed for adult learners
- Supports goal-directed & learner-driven content
- Self-paced
- Links with other online and offline resources and systems

- Computer & Internet Skills
- Broadband Consumer Education
• Introduction to Career Paths
• Tutor Training Plans
We set out to answer the following research questions descriptively, by examining trends in the data we found within as CBO’s organized programs to offer digital literacy skills to adult populations made up of low-income individuals, seniors, job seekers, immigrants, and those learning English, among others.

- How do different iterations of self-directed, tutor facilitated learning play out in different learning environments?
- What does self-directed, tutor facilitated learning look like?
- What outcomes result?
Bronfenbrenner proposed an ecological system made up of five socially organized subsystems. The microsystem is the pattern of interactions that occur in face-to-face settings “with particular physical, social, and symbolic features that invite, permit, or inhibit engagement in sustained, progressively more complex interaction” The mesosystem is made up of the linkages and processes that take place between two or more settings (a system of microsystems). For instance, a mesosystem in this study would be the interaction between the lab and the learner’s family or the lab and the unemployment office. The exosystem is the linkages between two or more settings, but unlike the mesosystem, the central individual is not present in one of the settings but the events that occur in that setting have an indirect affect on the individual. In the case of the labs, an exosystem might be the lab and the office of the program director. The macrosystem is the overarching pattern of the micro, meso, and exosystems that are characteristic of the culture in which those systems are embedded. So in the case of the labs, the three systems operate within a larger cultural system that values online engagement and may require online activities as part of unemployment benefits. The final system within Bronfenbrenner’s model is the chronosystem which provides into how both the individual and the systems change over time. As such, an individual who enters a lab with a particular learning goal may change over time based on what is learned, but also based on changes within the other systems. CHANGE OVER TIME.
- Web based learning platform
- Designed for adult learners
- Supports goal-directed & learner-driven content
- Self-paced
- Links with other online and offline resources and systems
### Learner Web Learning Plans

#### Skills: How do computers work?

<table>
<thead>
<tr>
<th>0.1 Introduction to Learner Web</th>
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<tr>
<td>0.2 Introduction to the DTOP Learner Web Project</td>
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<td>1.0 Orientation to Tutoring in the DTOP Learner Web Project</td>
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<td>2.1 Way Tutoring is Meaningful to You</td>
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<td>2.2 Principles of Adults as Learners</td>
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<td>2.3 Essential Tutoring Strategies and Supports</td>
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<td>2.4 Reviewing Student Learning Plans</td>
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<td>Comprehensive Tutor Training Review</td>
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Population

- Participants were drawn from a wider, larger, more comprehensive 3-year project (BTOP work)
- Over 12,000 eligible learners participate
- Over 500 tutors were trained
- 50,000 hours were logged in 160 different computer labs in 6 locations

A follow-up study is being conducted to examine digital literacy acquisition within the BTOP project. This presentation examines a subset of data from that mixed-method 3-year study.
Data Sources

- Semi-structured interviews with learners (30-60 minutes)
- Semi-structured interviews with experienced tutors (45-60 minutes)
- Case studies (two follow up interviews one month and three months out)
- System data that captured tutor information, interactions with the online materials and demographics
Methods

- Interviewees came from three different learning environments
  - Adult Ed Center Run by the Public Library
  - Re-entry Program
  - Workforce Centers in an Urban area
- Interviewees represented an array of educational backgrounds, ages, home languages spoken, and races and ethnicities

All were new-to-computer users and began with introduction to computers content (computer parts, mousing, keyboarding)
By carefully examining responses to interviews, Learners and tutors served as informants to let us know about their challenges and how to overcome them. Discuss with last grouping.

Be sure to mention Dedoose and ability to collaborative coding. Facilitates qualitative coding and mixed methods through descriptors

Create & Refine Coding Scheme
- Read transcripts
- Shared insights
- Developed initial code scheme
- Applied to selected sample

Code Transcripts
- Four researchers read & coded transcripts independently
- Codes refined

Compare & Discuss Codes
- Inter-rater reliability established

Analyze & Identify Themes
- Analytics applied
- Focus on codes with high co-occurrence
- Patterns identified
- Themes emerged
Fly in the graphics. Remove the bullet points. Move code transcripts graphic to first box. Add transcript screen shot to the code transcripts graphic. Make images larger and more readable.
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Findings
Three Implementations

- Adult Ed Center Run by the Public Library
- Re-entry Program
- Urban Workforce Centers
Research Question 1

- How do different iterations of self-directed, tutor facilitated learning play out in different learning environments?
### Adult Ed Center Run by the Public Library

<table>
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<tr>
<th># of Learners</th>
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I added the three points below to preview how we are looking at the data.

Research Question 2

- What does self-directed, tutor facilitated learning look like?
Adult Ed Center Run by the Public Library

Lab Environment

- Communicated **reassurance**
- Implemented **consistency and presence to encourage practice**
- Use **physical positioning to communicate support**

“I started them off and I told them ok, we’re going to work for a little while, **and if you have any questions I’ll be here.** So I was always walking around, looking at them, checking what they were doing, if they were on the right pace and everything.”

“I say **thank you for coming.** I know that when things are getting good and you’re getting excited into learning and we got to end because you have an hour. But **don’t worry because we’ll be here next Thursday or on Tuesday and we’ll continue our program.”

“I’ve placed myself usually near the door so I can see someone when they’re coming in and then I always let them know that I’m available if they have any questions. They can raise their hand or come over. Just make contact with me. **The first point is that I let them know I’m there for them.”**
Adult Ed Center Run by the Public Library

Tutoring Model

- Differentiation using multiple tutors
- Learner-driven and self-paced environment

“Certain people have to the ability to understand something, grasp it and move one and are able to continue but others like to take their time to really time to get it in and know what they're doing, know what’s expected of them. So not everybody will be at the same level as they progress.”

“And because we were working as a group, a couple tutors with different ways of teaching, different ways of explaining things and that just helped, helped me communicate better not only with the person, but also with the tutors in the group setting.”
Adult Ed Center Run by the Public Library

Teaching & Learning Interactions

- Language consistency; removing barriers
- Encourage preparation and commitment

Usually what I tell everyone is if you **come just be prepared to learn**. Bring a notebook. You can take notes in your primary language. And read them later if you don’t understand them here. **Just take your time and come on a regular basis.**

I tell them if you’re wanting to do it in Spanish slick with the Spanish. **Because there are just certain things they kind of seem unexplainable in English.** If you say it in one language, if you translate it, it’s not going to have the same effect as it would have in it’s original place.
Re-entry Program

Lab Environment

- Positioning
- Relevant Practice

That's how we put the computer lab so everybody can just talk to each other and help each other. If I'm busy helping somebody, explaining to somebody so they can just lean over and "this is how you do it."

“She would just try to get us to check our email or she would send something and she be like you know check your mail a lot of stuff like that.”
Re-entry Program

Tutoring Model

- Collaboration & Peer-mentoring

I could see the difference really is age groups. The older guys... the majority of them really didn't ever touch the computer. So you really gotta be hands on with them. And then the younger guys you can really just explain to them, you don't gotta be hands on with them and they can get. But it makes a difference though, that's why we have some young guys with the older guys.
Re-entry Program

Teaching/Learning Interactions

- Expanding interpersonal skills & empowerment

I never really thought I could interact with a lot of people...different people, personalities and all that. So it's really good for people to listen to me and trust my word on the computer...so it's nice for people to look up to me. And they trust my word and I'm telling them the right thing. When I go back to the dome and a guy just told me, "you really helped me learn." So that just really made me feel good, like I've really helped somebody. So that that really be feeling like I accomplished something. I feel like if my people know, like my mom or my mother or somebody, that'll really make her proud because I'm helping people.
Urban Workforce Center

Lab Environment
- Everyone engaged in their own individual work

Learner: Well what works for me was block everything out, so if that can work for people I don’t know, cause a lot of people have problems blocking out everything around them. And I just block everything out and just focus on what I’m doing, so you gotta really concentrate and you really gotta focus and it’s hard sometimes for people. But that’s what I would tell people. Block it out and just focus.

Interviewer: Do they [learners] ever help each other?
John: No. They may recognize each other from Heather’s class, or something of that variety, but typically not.
Urban Workforce Center

Tutoring Model

- Self-paced work with 1-1 available as needed
- Multiple tutors with different expertise

Tutor: ...ultimately, it's the one-on-one. A computer class is not one that's a group activity. All you have to do is lose one student in the process. It slows the whole group down.

Learner: If the tutor don't know something, she can show me something on the internet, or he don't know some, show me somewhere on the internet where I can find the information, or another tutor come and show me something that the other tutor doesn't know. And it all just helps so everybody knows something that the other person don't know or they'll find on the computer to show me so it all works together.
Urban Workforce Center

Teaching/Learning Interactions

- Prioritizing the Needs of Learners
- Tutor Characteristics more important than technical knowledge
- Personal Connections

Learner: The workforce center employees are just great. They see us walk through the door; they start kicking people off of dedicated tutoring stations.

I say hello, we speak, we joke, and they help me out. They tell me things a little bit about their lives sometimes or about stuff with the computer that I didn’t know – they show me stuff on there.

Learner to Tutor (answering question of what makes a good tutor): Just like basically patience. Like I’ve said, I’ve done customer service which comes, you know you get a lot of patience. And I think patience.
<table>
<thead>
<tr>
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<th>Common Qualities</th>
<th>Context Specific Qualities</th>
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<tr>
<td>Lab Char.</td>
<td>• Positioning of tutor</td>
<td>• Peer support</td>
<td>• Re-entry Program</td>
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<td>• Differentiation</td>
<td>• Independent Work</td>
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<td>• Removing barriers</td>
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<td>• Multiple tutors</td>
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I took these from the keyword list we came up with. As I studied the list, it seemed these three keywords were more about outcomes than qualities of either the lab or the tutors.
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Implications

- Individual Learners
- Programs
- Vulnerable Populations
Implications: Individual Learners

- Gaining basic digital skills provided an initial structure
- Invited to imagine a world of new possibilities that ICTs make available
- Sustained practice with relevant, real-world content will help learners take steps toward full digital inclusion
Implications: Programs

- Tutor facilitation (also offered in languages other than English)
- Organization of the lab
- Affective factors
- Time for learners and for programs to develop
Implications: Vulnerable Populations

- **Access**
  - To computers, to supportive tutors

- Open-access labs are an invitation into digital world; function as on ramp to digital participation
  - Promote job skills
  - Combat social isolation
  - Build self-efficacy and confidence
Thank you!

- **Contact**
  - Jill [jcastek@pdx.edu](mailto:jcastek@pdx.edu),
  - Gloria [gljacobs@pdx.edu](mailto:gljacobs@pdx.edu),
  - Steve [reders@pdx.edu](mailto:reders@pdx.edu),
  - Elizabeth [elizabew@pdx.edu](mailto:elizabew@pdx.edu),
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