

**Brian Detlor**  
McMaster University, Hamilton, Ontario, Canada

# **PUBLIC LIBRARY-LED DIGITAL LITERACY TRAINING TO OLDER ADULTS IN SOCIAL HOUSING**

## **Abstract**

This paper describes an in-progress two-cycled Action Research investigation of public library-led digital literacy training to older adults in social housing. Prior to the first cycle, the digital literacy needs and training preferences of CityHousing Hamilton (CHH) older adults were identified. These findings were then used to design and evaluate an Android tablet training program delivered by Hamilton Public Library (HPL) to CHH older adults onsite at their CHH place of residence (Cycle One). Findings from Cycle One were then used to design and implement another iteration of onsite HPL-led tablet training to CHH seniors (Cycle Two).

## **Introduction**

Digital literacy refers to the “*set of skills, knowledge and attitudes required to access, create, use, and evaluate digital information effectively, efficiently, and ethically*” (Julien, 2018, p. 2243). One way to obtain digital literacy is through training (Barrie et al., 2021; Bawden, 2008). Such training serves as an important vehicle by which to promote digital literacy, especially among marginalized populations. For example, marginalized older adults (e.g., those 65 years of age and older who live in social housing) often need digital literacy training to equip them with the ability to access information, utilize services, and maintain social connections through digital platforms. Such empowerment is crucial for ensuring participation of marginalized older adults in an increasingly digital society and for fostering a sense of inclusion and community engagement (Nedeljko et al., 2022).

However, barriers to the delivery of digital literacy training to marginalized populations exist. These barriers include: a lack of access to the Internet, data, hardware, and software; the inability to pursue education and training opportunities due to financial, mobility and geographic restrictions; learners not seeing themselves reflected in the digital literacy training programs provided; intimidation and fear of failure; and insufficient intermediate-level digital literacy training opportunities (Elfert, 2019; Huynh & Malli, 2018; Smythe et al., 2021).

Fortunately, public libraries champion efforts to overcome these barriers by providing digital literacy training to marginalized community members, such as seniors and low-income individuals, who may have no other means by which to obtain digital literacy skills (Wynia Baluk et al., 2023). Public libraries provide community members with complimentary access to digital literacy training, Wi-Fi, and various information technologies, from basic computers to advanced tools. They often offer diverse digital training methods, ranging from self-guided tutorials to personalized support, group sessions, guest lectures, specialized professional training, community partnerships, and technology-centered spaces (Julien et al., 2021).

How public libraries can best deliver this training is unclear. For example, a recent survey of administrators and instructors at public libraries across Canada about the delivery of digital literacy training indicates room for improvement and that public libraries need to fine-tune their learning environments and program components (Detlor et al., 2024).

In response, this paper reports on an in-progress two-phased case study of the delivery of digital literacy instruction by a public library to older adults living in social housing as a means of determining ways a public library can best deliver digital literacy training to this specific population.

### Conceptual Framework

The conceptual framework used in this case study investigation (see Figure 1 below) is adapted from a theoretical model developed by Detlor et al. (2022) on community-led digital literacy training success. Detlor et al.'s (2022) model is based on information literacy and educational assessment theories (Boyer & Ewell, 1988; Lindauer, 2004; Sims, 1992) which propose that the learning environment in which instruction occurs (e.g., funding, classroom resources, teaching staff, performance measurement) and program components (i.e., the specific features of the instruction itself such as the timing and location of the instruction, the skills taught, the pedagogical approach used) collectively influence learning outcomes (i.e., psychological, behavioral, and benefit outcomes).

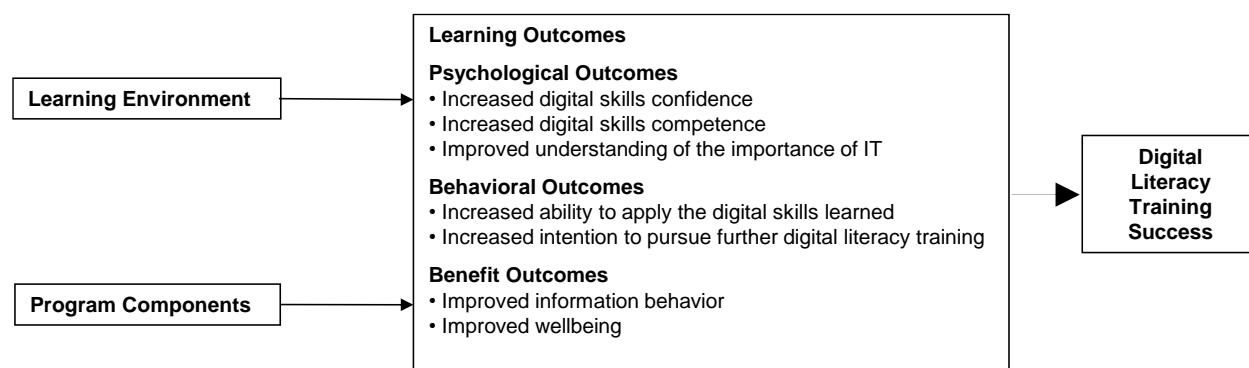


Figure 1: The study's conceptual framework

Importantly, by utilizing this conceptual framework, the case study aligns with the CAIS 2025 conference theme of "Back to the Future" by theoretically grounding its investigation on the lengthy and historic theoretical foundations of Information Literacy Instruction (ILI) produced in the Library and Information Science (LIS) field over the last 40 years. That is, the study draws on past ILI theoretical works from the LIS field to shape and inform a current research investigation on digital literacy training.

### Methodology

The study utilizes an Action Research (AR) approach (Susman & Evered, 1978; Myers, 2020) to investigate a case study of the delivery of digital literacy training to older adults in social housing. AR is a methodological approach that aims to solve current practical problems while expanding scientific knowledge. The method “aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework” (Rapport, 1970, p. 499).

AR differs from other research methods in that the researcher does not remain neutral in studying a phenomenon, but rather actively intervenes in the phenomenon under investigation and simultaneously studies the effect of this intervention. It is an iterative research process where learning occurs by both researcher and participants within the context of the participants’ social system. This learning occurs in cycles, where learnings from a prior intervention are applied to the next (modified) intervention where each cycle involves four stages of planning, acting, observation, and reflection.

Two organizations are involved in this AR investigation: CityHousing Hamilton (CHH) and Hamilton Public Library (HPL). HPL provides curated digital literacy training materials geared towards older adult digital literacy learners, as well as digital literacy training instruction. CHH provides access to older adults living in social housing. Both organizations are situated in Hamilton, Ontario, Canada.

Figure 2 below presents a visual of the two AR cycles carried out in this investigation. The diagram also illustrates a period of reflection that occurred before the start of the first cycle.

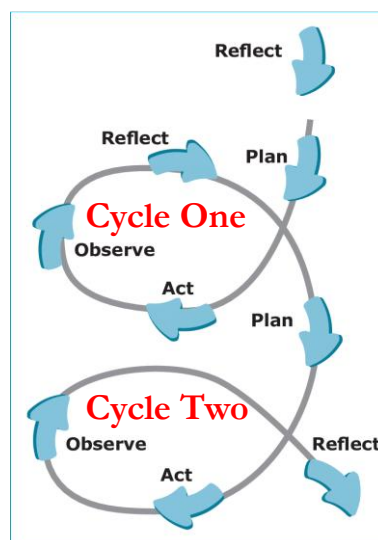


Figure 2: The Study’s Two Cycles of Action Research

*Initial Reflection*

Prior to Cycle One, 15 CHH older adults were interviewed to identify their digital literacy needs and training preferences (Wynia Baluk et al., 2023). Analysis of the transcribed interviews found that these seniors need training that is adaptable to an individual's interests, promotes confidence, and addresses financial barriers to using digital devices effectively. Findings also affirm the value of accessible training located within seniors' social networks (e.g., friends, family). In addition, in a related project at a seniors' technology lounge to a group of low-income seniors living on social assistance in downtown Toronto, older adults expressed a preference to have training on the basics of using an Android tablet or smartphone.

### ***Cycle One***

Based on these initial reflections, the research team planned a training program with input from CHH/HPL administrators and HPL instructors. It was agreed that free Android tablets would be given to CHH older adult learners to keep as a means of motivating them to participate in the training and take it seriously, and to overcome financial barriers that require CHH older adults to purchase their own tablets. Further, it was agreed that the training would be delivered onsite at CHH residences to promote access and convenience to the training as most CHH older adults suffer mobility and financial constraints restricting their ability to travel to a local library branch to take the training. It was also agreed that the training would incorporate socialization components (e.g., buddy learning, group classroom learning) as a means of increasing the amount of social support available during the training itself.

The research question developed for this cycle was: *To what extent can incorporating onsite library-led Android tablet training that includes socialization components impact the learning outcomes of older adults residing in social housing who take the training?*

An HPL instructor delivered Android tablet training to CHH older adults at their CHH residence in February and March 2024. Participant recruitment and data collection occurred between January and April 2024 and comprised the following activities (Abouei et al, 2024; Elgamal & Detlor, 2024):

- *Pre- and post-interviews* with 18 older adult learners (3 males, 15 females) aged 65+ with low levels of digital literacy skills, two library and social housing administrators, and one library instructor.
- *Observations* of public library-led training across four weeks delivered onsite at CHH residences.
- *Biometric data collection* (e.g., eye tracking, skin conductance) and *audio/video recording* during two additional training sessions conducted in a mobile user experience lab led by a member of the research team conducted onsite at CHH residences.

Data analysis is currently underway and is expected to be finished by Spring 2025.

### ***Cycle Two***

Though data analysis from Cycle One is not complete, lessons learned were obtained that provided sufficient input for reflection and planning of Cycle Two. These lessons learned were identified from data collection activities conducted in Cycle One, a focus group session held in April 2024 of CHH older adult learners and one CHH administrator, and additional interviews held in September 2024 with CHH older adult learners who participated in Cycle One.

Based on these lessons learned, the research team planned out a training program with input from CHH/HPL administrators and HPL instructors. There was agreement to improve the Android training program itinerary and content by hiring a third-party company specializing in older adult digital skills training to develop an Android tablet training program and provide HPL instructors with a one-day workshop on how to teach this new training content to older adults. It was also agreed that the training program would extend from four weeks to six, provide handout materials in advance, offer an extended break during each training session, provide a Q&A period at the end of each classroom session, include more hand-on exercises during each class, and assign homework to be done before the next training session. The size of each classroom cohort would be held to a maximum of 12 older adult learners. Two cohorts of older adults would be taught. Two helpers (e.g., graduate research assistants) would assist HPL instructors during each classroom session. With help from the research team, older adults would self-form peer groups of two to four learners. These small learning groups would conduct their own peer-to-peer tablet training sessions. Each peer-to-peer group would self-determine meeting times, meeting locations, and the content to be taught and/or reviewed.

The research question for Cycle Two asks: *“How does the delivery of public library-led Android tablet training sessions to older adults living in social housing conducted in a classroom setting with the assistance of helpers onsite at the older adults' place of residence AND additional ad hoc peer-to-peer learning tablet training sessions (where older adults teach other older adults) affect the learning outcomes of these older adults?”*

The HPL-led tablet training sessions and data collection for Cycle Two began February 2025. The same data collection activities which occurred in Cycle One are being conducted in Cycle Two, with three differences: i) no pre-training interviews are carried out; ii) older adults are also asked to complete paper questionnaires that poll their feelings of wellness and computer proficiency once prior to the beginning of the training and once after the training is completed (in Cycle 1, these questionnaires were verbally asked during interview sessions); and iii) the mobile user experience lab sessions only involve peer-to-peer training where one older adult teaches one other older adult some tablet skills.

## Next Steps

By the time of the CAIS 2025 conference in May 2025, Cycle One's data analysis will be complete, and findings will be reported at that time. Further, Cycle Two's data collection will be complete, and preliminary findings will be available for presentation.

## Conclusion

This study responds to a growing interest in how best to deliver public library-led digital literacy training in general, and to older adults living in social housing specifically. The goal is to make theoretical contributions and provide recommendations to practice on the delivery of digital literacy instruction to older adults living in social housing that lead to the bridging of the digital divide for this marginalized population.

## References

- Abouei, M., Elgamal, R., Detlor, B., & Head, M. (2024). Complementing older adult digital literacy training research with a mobile user experience lab. *Proceedings of the Twenty-Third Annual Pre-ICIS Workshop on HCI Research in MIS*, Bangkok, Thailand, December 15.
- Barrie, H., La Rose, T., Detlor, B., Julien, H., & Serenko, A. (2021). "Because I'm old": The role of ageism in older adults' experiences of digital literacy training in public libraries. *Journal of Technology in Human Services*, 39(4), 379–404.
- Bawden, D. (2008). Origins and concepts of digital literacy. In C. Lankshear, & M. Knobel (Eds.), *Digital literacies: Concepts, policies and practices* (pp. 17–32). Peter Lang.
- Boyer, C. M., & Ewell, P. T. (1988). *State-based case studies of assessment initiatives in undergraduate education: Chronology of critical points*. Denver, Colorado: Education Commission of the States.
- Detlor, B., Julien, H., La Rose, T., & Serenko, A. (2022). Community-led digital literacy training: Toward a conceptual framework. *Journal of the Association for Information Science and Technology*, 73(10), 1387–1400.
- Detlor, B., Serenko, A., La Rose, T., & Julien, H. (2024). A survey of public library-led digital literacy training in Canada: Perceptions of administrators and instructors. *Evidence Based Library and Information Practice*, 19(3), 23–41.
- Elfert, M. (2019). Lifelong learning in sustainable development goal 4: What does it mean for UNESCO's rights-based approach to adult learning and education? *International Review of Education*, 65(4), 537–556.
- Elgamal, R., & Detlor, B. (2024). Addressing the digital divide among older adults in social housing. Emergent Research Paper. *Proceedings of the Americas Conference on Information Systems (AMCIS)*, Salt Lake City, USA, August 15–17.
- Huynh, A., & Malli, N. (2018). *Levelling up: The quest for digital literacy*. Brookfield Institute for Innovation + Entrepreneurship. <https://dais.ca/reports/levelling-up/>
- Julien, H. (2018). Digital literacy in theory and practice. In M. Khosrow-Pour (Ed.), *Encyclopedia of Information Science and Technology* (4th ed., pp. 2243–2252). IGI Global.
- Julien, H., Gerstle D., Detlor, B., La Rose, T., & Serenko, A. (2021). Digital literacy training for Canadians, Part I: "It's just core public works", *The Library Quarterly*, 91(4), 437–456.

- Lindauer, B.G. (2004). The three arenas of information literacy assessment. *Reference & User Services Quarterly*, 44(2), 122–129.
- Myers, M. D. (2020). Action research. *Qualitative research in business & management* (3rd ed.). Sage Publications Ltd.
- Nedeljko, A., Bogataj, D., Toplak Perovic, B., and Kaucic, B. M. (2022). Digital literacy during the coronavirus pandemic in older adults: Literature review and research agenda, *IFAC-PapersOnLine*, 55(39), 153–158.
- Rapport, R. N. (1970). Three dilemmas in action research. *Human Relations*, 23(4), 499–513.
- Sims, S. J. (1992). *Student outcomes assessment: A historical review and guide to program development*. Greenwood Press.
- Smythe, S., Wilbur, A., & Hunter, E. (2021). Inventive pedagogies and social solidarity: The work of community-based adult educators during COVID-19 in British Columbia, Canada. *International Review of Education*, 67(1–2), 9–29.
- Susman, G. I., & Evered, R. D. (1978). An assessment of the scientific merits of action research. *Administrative Science Quarterly*, 23, 582–603.
- Wynia Baluk, K., Detlor, B., La Rose, T., & Alfaro-Laganse, C. (2023). Exploring the digital literacy needs and training preferences of older adults living in affordable housing. *Journal of Technology in Human Services*, 41(3), 203–229.