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"Because I'm Old": The Role of Ageism in Older Adults' Experiences of Digital Literacy Training in Public Libraries

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ABSTRACT

This article explores the experiences of older adults attending digital literacy training sessions offered by the public library system in one city in Ontario. Semi-structured interviews with 12 older adults (age 60+) demonstrated the significance of societal and internalized ageism in shaping the experiences of participants, as well as the construction of the training as a "safe space" for experimentation. Implications for participants and future public library digital literacy training sessions are discussed, with particular attention to asset-based approaches, the need for skill development, and addressing the effects of ageism on participants.

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Introduction

Older adults are identified as a population with low levels of digital literacy and as negatively affected by disparities of access to digital technologies (Arthanat, Vroman, Lysack, & Grizzetti, 2019; Costa, Gilliland, & McWatt, 2019; Park, 2012). The exploration of differences between individuals with access to digital resources and digital literacy capacity and those without is sometimes described in terms of a "digital divide" (Lagacé, Charmarkeh, Laplante, & Tanguay, 2015). In an effort to bridge the gap created by this digital divide, public libraries in Canada play a pivotal role in digital literacy training for marginalized groups, including older adults, through community-based initiatives (Julien & Hoffman, 2008; Nordicity, 2017; Wynia, McQuire, & Gillett, 2019). This article explores the experiences of older adults attending digital literacy training sessions offered by the public library system in one city in Ontario. Interviews with older adults demonstrated the significance of societal and internalized ageism

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in shaping the experiences of the study participants, as well as the construction of the training as a "safe space" for experimentation. Implications for participants and future public library digital literacy training sessions are also discussed in considering how the interplay of the need for skill development and the effects of ageism may be addressed.

This study considers a subset of materials from a wider research study exploring digital literacy training provided through public libraries and other community organizations in Canada. This article focuses on the experiences of 12 older adults (age 60+) participating in library-based digital literacy training. First, the *Background* section highlights the current landscape of digital literacy training for older adults in public libraries. Next, the *Literature Review* offers an overview of the current academic literature related to older adults, their digital literacy skills, and training available to support these skills. The third section, *Methodology*, outlines the project design, methods, and theoretical dimensions of analysis. Our *Findings* highlight ageism, defined as "negative attitudes or behaviors towards individuals on the sole basis of their age," as a central theme emerging in the individual interviews, particularly in examining how participants described themselves and their peers after their participation in a digital literacy training session (Lagacé et al., 2015, p. 2). A number of secondary themes also surfaced in this analysis, including participants' needs and desire for digital literacy training; gender dynamics at play in participants' confidence or transcendence of ageist stereotypes; and participants' construction and experience of the training sessions as a "safe space" for exploration and learning. Finally, we discuss the project's *Implications*, highlighting the potential for asset-based approaches to digital literacy training for older adults and the potential for further research in this area.

Background

The Canadian Guidelines of Library and Information Services for Older Adults (2016) define an older adult as a person who is 60 years of age or older. This older adult population should not be seen as homogeneous; as the Canadian Federation of Library Associations (CFLA) suggests, "[t]he first principle of serving an older population is to recognize this great diversity and to be ever conscious of the dangers of stereotyping in planning collections, programs and services" (CFLA-FCAB, 2016). Therefore, understanding the specific needs of older adult library users and participants in digital literacy training may be understood as a part of a larger process of knowing the specific needs and wants of the older adult

population. This better understanding gives the libraries and community organizations greater potential to design and deliver the right kind of programming for this unique population.

This study seeks to develop a complex understanding of digital literacy training in public library settings and to understand how these initiatives seek to meet the needs of library users. Considerations of digital literacy emphasize the need for marginalized populations to enhance digital literacy skills in an effort to reduce social disparities associated with the digital divide (Lagacé et al., 2015). Digital literacy skills are understood as important for people of all ages; older adults are often highlighted when discussing the negative consequences of the digital divide (Lagacé et al., 2015). Older adults lacking status is understood to result from a variety of contexts including retirement from the workforce prior to the need for digital literacy in employment; not receiving digital literacy education in school; and the lack of peer online networks for reinforcement of digital skills (Arthanat et al., 2019; Barnard, Bradley, Hodgson, & Lloyd, 2013).

Definitions of digital literacy are wide-ranging. For the purpose of this study, digital literacy is defined as skills enabling one "to participate fully in the global digital society" (Bawden, 2001; Lankshear & Knobel, 2015; Media Awareness Network, 2010, p. 4). Similarly, Julien (2018) defines digital literacy as "the set of skills, knowledge, and attitudes required to access digital information effectively, efficiently, and ethically" (p. 2243). The definition used here refers to the ability to facilitate societal participation by accessing, engaging with, and evaluating digital information (Nordicity, 2017). Digital literacy is widely understood to provide older adults with connection and social inclusion; for older adults concerned with employment, digital literacy is also seen to support greater employability (Nordicity, 2017).

Public library-based community programming is a key human services sector response to the digital divide. Public libraries provide access to digital technologies, allowing community members to increase their levels of digital literacy (Media Awareness Network, 2010). As one of the last true public spaces, public libraries serve as primary locations of digital literacy training and access to technological resources more generally (Nordicity, 2017; Wynia et al., 2019). Libraries are community hubs and institutions for life-long learning that are free and therefore financially accessible. These hubs offer opportunities for leisure, entrepreneurship, social connection, and skills development. Their efforts to provide learning opportunities are described as contributing to poverty reduction and workforce development (Nordicity, 2017; Wynia et al., 2019). According to Nordicity's 2017 report on technology access for Toronto Public Libraries, "[c]onnectivity, technology access and digital literacy programs have

become top priorities for library systems across Ontario" (p. 14). One such example is the recent strategic partnership between the Toronto Public Library and CanAge, a partnership undertaken to strengthen each organization's ability to support seniors in Canada (Toronto Public Library, 2020).

In considering the role of public libraries in digital literacy training, Wynia et al. (2019) describe these projects as "particularly important in fostering digital citizenship among older adults" (p. 1). The authors define digital citizenship as "'the ability to participate' in societies where internet access and the use of information technology are necessary when it comes to accessing political, social, and economic opportunities" (Wynia et al., 2019, p. 1). The mandate of public libraries is focused firmly on serving public needs; expanding literacy training to include digital literacy is a direct response to contemporary social needs. Willett (2016) describes this expansion of services as reflective of the "ideals of access with the aim of providing tools and resources for a broader public" (p. 323).

With this public service mandate in place, libraries have moved from being a receptacle of books and print materials to more dynamic community partners attending to multiple literacies in the development and delivery of service. Makerspaces are one example of the kind of innovation and adaptation that demonstrates response to community needs. The emergence of Makerspaces in public library settings over the past two decades has contributed to greater emphasis on digital literacy training (Marsh et al., 2017). Makerspaces are collaborative creative spaces in learning institutions with embedded ideals of entrepreneurship, skill development, and community engagement (Koh & Abbas, 2015; Willett, 2016). Digital literacy training involves professionals facilitating learning as well as effecting hands-on and user-appropriate learning, goals that are reflective of the Makerspace ethos (Koh & Abbas, 2015). Public libraries continuously expand services to include current and emerging technologies and are at the forefront of providing access to information and skills to wide variety of people (Nordicity, 2017). Makerspaces and digital literacy training courses reflect this underlying mission, necessitating "ongoing changes in libraries and librarianship in response to needs and interests of communities" (Willett, 2016, p. 320).

In expanding the meaning of literacy to extend beyond reading, comprehension, writing and numeracy, public libraries are understood as important community hubs for digital literacy training and access to technology. Libraries have worked with the community to understand the needs of constituents and to respond to these needs through the development of training and services. Public libraries seek to expand the capacity of constituents to use digital media based on the goals and priorities identified by participants, as well as those presented by global organizations

who establish minimum standards for skill development such as the Organization for Economic Co-operation and Development (OECD) (OECD.org).

Contributing factors to the development of digital literacy training in public libraries include demographic factors such as the aging "baby boomer" generation, who experienced the "information revolution of the late twentieth century" and thus often prioritize technology and use it at high rates (Williamson et al., 2006, p. 61). In 2016, 16.9% of Canadians were above the age of 65; older adults make up a significant portion of the population, and as a result represent a significant portion of library users (Wynia, McQuire, Gillett, & Wyatt, 2020). However, negative stereotypes and acts of marginalization and oppression can create barriers for older adults seeking to participate in society, including participation through the use of technology (Ranzijn, 2015). Older adults are a rapidly growing demographic with specific digital literacy needs and public libraries are uniquely situated to respond.

The scholarship suggests that older adults have lower baseline levels of digital literacy skills. While skills levels remain lower than the average, the benefits of digital literacy for this population are numerous, ranging from positive health impacts to increased social participation (Arthanat et al., 2019; Hill, Betts, & Gardner, 2015; Lagacé et al., 2015; Mitzner et al., 2010; Tsai, Shillair, & Cotten, 2017). Factors influencing older adults' limited digital literacy include high anxiety and low confidence related to technology use; while this may be seniors' experiences, studies show that support and explanation are effective in addressing these barriers (Caidi, Du, Li, Shen, & Sun, 2020; Hill et al., 2015; Mitzner et al., 2010; Steelman & Wallace, 2017).

Literature review

Research shows that older adults have lower baseline levels of digital literacy and skills, and lower adoption rates of the Internet, smartphones, and broadband services compared to other age groups (Arthanat et al., 2019). As Arthanat et al. (2019) state, this lack of familiarity stems from the majority of older adults having "spent the bulk of their upbringing and adult years in the predigital era with limited to no reliance on computers, the Internet or mobile phones" (p. 454). Older adults accordingly are less adept with technology, use it less, and lack the reinforcement of a peer online-network (Arthanat et al., 2019).

Various additional factors also influence digital literacy and technology use by older adults; for example, low-income seniors, also a growing

population in Ontario, may have less access to digital technology, while older adults who are wealthy, highly educated, or baby boomers are more active users of digital technology (Arthanat et al., 2019; Nordicity, 2017). Again, it is essential to keep in mind that, as Hill et al. (2015) note, "older adults are a disparate and heterogeneous group with regards to their digital technology use because their past employment, motivation, and existing knowledge varies" (p. 415). Older adults are often separated into the age groups of young old adult and old adult in order to avoid generalizations about aging, which is significantly influenced by socio-cultural diversity and complexity (Calero, Pérez-Díaz, Navarro-González, & Calero-García, 2013; Federici, Bellagamba, & Rocchi, 2005; Gouveia et al., 2017; Morrell, Mayhorn, & Bennett, 2000; Wicks, 2004; Williamson & Asla, 2009; Yoshinaka et al., 2016). The ages included by these terms vary, but young old typically refers to adults approximately 60–74 years in age, while old adult refers to ages 75+ (Calero et al., 2013; Morrell et al., 2000). Labeling all people over the age of 60 as older adults may risk blurring the heterogeneity that characterizes aging.

The concept of technology generations reflects the complexity of the technology skills and experiences of people of various ages. While age often negatively correlates with technological skills and experience, understanding the generational differences in technological practice, reflective of individual and collective change of social structures, adds useful nuance and context. Sackmann and Winkler (2013) research on technology generations suggests that individuals learn within particular technological environments and therefore their cognitive processes are shaped by the technological context in which they developed early learning skills and foundational knowledge. These foundational understandings may make learning in differing technological contexts more challenging. In other words, it may be challenging for members of different technological generations to cross over into a new technological realm because they may lack the core learning skills and foundational knowledge required to adapt to the new context. For example, Sackmann and Winkler (2013) cite challenges faced by persons born between 1930 and 1960 who have "difficulty coping with multi layered interfaces" (p. 494). Considering generation in addition to age allows for specific attention to the economic, social, political, and cultural context of digital literacy skills and experiences.

With this context for the generational and intragroup difference in technological practice and experience in mind, it is also clear that the lower baseline levels of digital literacy evident in the diverse demographic of people age 60+ can increasingly result in social exclusion in the contemporary world (Costa et al., 2019; Park, 2012). Digital literacy is becoming an essential skill in our society.

The myriad benefits of digital literacy for older adults are well-established. Technology can enable older adults to remain independent longer through facilitating everyday tasks, monitoring and maintaining health, and managing routines (Arthanat et al., 2019; Mitzner et al., 2010). Digital literacy allows for self-empowerment, facilitating social participation, and improving emotional and mental health through connection with friends and family and participation in social, cultural, and civic activities (Arthanat et al., 2019; Hill et al., 2015; Lagacé et al., 2015; Tsai et al., 2017). The removal of physical barriers associated with aging contributes to improved social connectedness and inclusion as well as a greater sense of self-efficacy, or the belief in one's capabilities to perform tasks and organize information (Caidi et al., 2020; Hill et al., 2015). Furthermore, these benefits extend beyond the individual; Wynia et al. (2019) argue that digital literacy offers the potential to address age-related inequalities through social cohesion and social capital by bringing diverse groups together and providing platforms for connecting diverse knowledge. The Media Awareness Network (2010) also connects digital literacy with societal benefits, stating that improved digital literacy in individuals results in economic and social benefits for Canadians more broadly.

Barriers to digital literacy are widely discussed in the literature. External factors limiting digital literacy include equity and accessibility related concerns such as financial constraints, lack of training and prior experience, and limited opportunities to use a computer (Barnard et al., 2013). In addition to age and generation, these are linked to socio-demographic variables such as income, language, disability, geographical location, housing, and more (Caidi et al., 2020; Media Awareness Network, 2010; Nordicity, 2017; Wynia et al., 2019;). Older adults also face the challenge of leaving the workforce and losing touch with previous means of information gathering, which were built into the workplace (Barnard et al., 2013; Wicks, 2004). Internal barriers are also a major limiting factor for older adults' digital literacy. Low confidence, high anxiety, and fear are frequently experienced by older adults when approaching information technology (Caidi et al., 2020; Hill et al., 2015; Mitzner et al., 2010; Steelman & Wallace, 2017). Fears of breaking the technology or a breach in security allowing for theft of personal information are common, as well as anxiety of learning a new skill that is often not intuitive, as user interfaces shift more toward streamlined design with fewer cues for functions (Mitzner et al., 2010; Steelman & Wallace, 2017; Vaportzis, Clausen, & Gow, 2017). Anxious learners tend to rely on memorization-style learning, which creates its own challenges long-term with users being unable to follow the same process after a system update or on a different device, for example (Steelman & Wallace, 2017). As Steelman and Wallace (2017)

note, these fears and anxieties act as a barrier to exploration and wayfinding in digital learning, which are critical to gaining digital literacy skills. Support and explanation are often the primary factors by which older adults are able to overcome this fear and anxiety (Hill et al., 2015).

Digital literacy training in public libraries offers this kind of support and explanation. Digital literacy is learned through social practice and group interaction rather than by simply providing access to technology (Park, 2012). On this basis, Schreurs, Quan-Haase, and Martin (2017) write:

> The concept of the digital literacy paradox highlights how learning is a social process and thus digital literacy is best acquired in social settings where family, peers, mentors, and gatekeepers come together to provide an environment for exploration. The paradox emerges when older adults need to gain experience with ICTs [Information and Communications Technologies] to develop their skills, but they are apprehensive about using ICTs because they do not have the needed skills (p. 6).

Digital literacy training fills this gap, providing a social setting to explore and develop skills. Public libraries are an ideal setting for the training, as local community groups and institutions play important roles in digital learning practices of older adults and simultaneously work to fulfill older adults' social needs, contributing to positive aging (Lenstra, 2017; Williamson, Bannister, & Sullivan, 2010). Retirement is a stage of life typically specific to older adults that enables or prompts them to use their local public library's resources, spaces, and programs due to additional spare time and a desire to keep learning as an aging person (Wynia et al., 2019). As Wynia et al. (2019) write, library staff are uniquely situated to respond to these needs:

> Creating a sense of respect and belonging among a group of people of varying ages, languages, religions, cultures, personal histories, and socioeconomic backgrounds is a task at the heart of what public library staff members do on an everyday basis. (p. 15)

In this light, digital literacy programs are a method of fostering equality among different age groups, offering older adults opportunities to gain skills that younger adults, youth, and children are afforded on a regular basis (Wynia et al., 2019). In Canada, public libraries often have dedicated programs and content for the older adult demographic; according to Wynia et al. (2019), an "environmental scan in Canada revealed that 23 of the 40 library systems offered programs that were specifically labelled for an older adult audience" (pp. 12–13). Older adult digital literacy training is widely available in Canada's public libraries. However, these programs are always shaped by their location, context, resources, and societal ageism (Lenstra, 2017).

Methodology

The data analyzed in this study are a sub-set of interviews undertaken as part of the first phase of a two-phase investigation exploring digital literacy training provided by public libraries and other community organizations in Canada. The study is a partnership between McMaster University, State University of New York at Buffalo, and Ontario Tech University as well as the Hamilton Public Library, McMaster University Office of Community Engagement, Canadian Urban Libraries Council, and the Canadian Federation of Libraries Association. The project received ethics approval from the Research Ethics Boards of McMaster University and Ontario Tech University. The first phase of the study involved interviews with administrators, instructors, and participants of digital literacy training at public libraries and community organizations. Participant observation of training sessions, demographic surveys of training participants, and analysis of training-related documents were also included in the first phase. The second phase will include national surveys of public library administrators, instructors, and training participants. The overall goal of the study is to identify best practices for digital literacy training programming and to prepare a toolkit that public libraries and community organizations can use to evaluate these initiatives. In addition, the study seeks to contribute to theoretical understandings of digital literacy and digital literacy instruction. Participants were recruited via direct contact after a digital literacy training session, and all provided informed consent to participate in individual interviews. Interviews lasted from five to 15 minutes in the library space. Interviews were digitally recorded and transcribed by a professional transcription service. The interview protocol is provided in Appendix 1, supplementary material.

Detlor et al.'s (2011) model of Information Literacy Instruction Factors Affecting Student Learning Outcomes and Serenko et al.'s (2012) model of Student Learning Outcomes of Information Literacy Instruction guided the formation of interview questions posed to people who took part in a training session (end-users). These questions asked interviewees to reflect upon the learning environment and program components of their training sessions, as well as the outcomes of the digital literacy instruction received (i.e., psychological, behavioral, benefit outcomes).

Immediately after a training session occurred and prior to the interview sessions with end-users, a questionnaire was administered individually to each end-user who agreed to participate in the study. This questionnaire collected basic demographic information such as age, gender, and education (see Appendix 2, supplementary material). These demographic categories were used as dimensions of analysis for this study.

The sub-set of 12 interviews analyzed for this article involved the 12 participants who were 60 years of age or older. Of the 12 participants, 6 were women and 6 were men. Their ages ranged from 60 to 82 years, with a median age of 72 years and an average age of 70 years. Due to the small sample size of the study, participants were not categorized into age groups of young old adult and old adult. Further research may be useful to explore the specific digital literacy training experiences of these sub-categories of older adult. These participants attended digital literacy training sessions such as: *an introduction to the internet*; *search engine basics; introduction to word processing; or how to digitize media* (e.g., slides or VHS tapes). No newcomers to Canada were included in the participant sample. The highest level of education completed by participants ranged from high school to a graduate degree. The participants attended training at one public library system in a medium-sized city in one Canadian province.

Dedoose, a qualitative data analysis software tool, was used to store all data collected in the study. Qualitative data analysis methods advocated by Miles, Huberman, and Saldana (2014) and Charmaz (2014) were used to explore and identify categories and themes in the data. This approach was inductive and exploratory in nature and assumed that the opinions and reflections of both researchers and participants help constitute a shared understanding and interpretation of the phenomenon under investigation.

Three rounds of in-depth coding were conducted. The first round involved the creation of a codebook (see Appendix 3, supplementary material). The codebook was based on sensitizing concepts from theories identified above used to structure interview questions (Detlor et al., 2011; Serenko et al., 2012). Despite the use of a codebook to guide the initial coding of the data in this first round, the researchers also freely created new codes during the first round of analysis.

From this first round, an initial set of factors affecting digital literacy training success was identified. These factors were: i) organizing and training staff; ii) acquiring sustainable funding; iii) reaching marginalized populations; iv) offering training at convenient times to end-users; v) marketing the training; vi) sharing and adopting best practices; and, vii) collecting and analyzing performance measurement data.

The second round of data analysis explored these factors further, considering their interrelation and difference between groups. This involved considering how the characteristics of a digital literacy training session affect end-user perceptions of the training, as well as end-user confidence and interest in using new information technology in the future, as a result of participating in a training session. Differences between youth and older adults and between men and women were specifically analyzed.

The third round of data analysis attended specifically to older adult participant interviews, informed by the themes previously identified. In this final round of coding, data from the subset of 12 semi-structured individual interviews was again qualitatively analyzed using an inductive thematic approach and grounded in an information literacy framework (Detlor et al., 2011).

As part of the larger study, this article draws on end-user participant interviews to explore and summarize considerations specific to the older adult population, aiming to ultimately lead to increased community uptake of digital literacy initiatives, improved digital literacy skills development, and greater digital literacy appreciation among community members. However, the small size and limited diversity of the participants limits the generalizability of the conclusions that can be drawn from this study; the findings from the analysis reflect the experiences of a particular group of older adults and may be used to develop preliminary understandings, provoke questions, and suggest directions for further research.

Findings

Through inductive thematic analysis of the 12 interviews, ageism emerged as a central theme, particularly when examining how participants described themselves and each other after a digital literacy training session. Secondary themes comprised participants' needs and desire for digital literacy training, gender dynamics at play in participants' confidence or transcendence of ageist stereotypes, and participants' construction and experience of the training sessions as a "safe space" for exploration and learning. The themes are presented as they emerged in most interviews; that is, first exploring the participant's reason or need for attending the training, then moving on to themes of ageism in the body of the interview, followed by the gender dynamics observed in certain participants, and finally, to the role that the training environment played for participants. Pseudonyms are used when referring to participants.

Reason for attending the training

Findings from the study reinforce older adults' specific needs that digital literacy training can fulfill. When speaking about their reasons for attending training, themes of limited skill, inability to participate in society, and needing a place to practice skills emerged. Participants described their lacking digital literacy skills or limited abilities as a primary reason for attending the training. For example, one participant, Wendy, stated, "I am

illiterate as far as technology is concerned," while another, Carol, said, "it's literacy for me because I don't know nothing about computers. That's why I come." The lack of familiarity and ability described by Arthanat et al. (2019) is evident in examining these participants' reasons for attending training sessions.

Engaging fully in society was another reason referenced by the older adults interviewed for this project. One participant, Tanya, discusses the skills she needs to learn in order to participate in culture and events:

> [E]verything's on a computer […] I've resisted as much as I can, but you can't. […] [M]ore and more things you have to do online. We just went traveling. We went to Europe, and I couldn't get into a museum because I didn't buy the tickets online before I went. […] I couldn't actually go to that museum while I was there, because I hadn't bought the tickets online – you can't do anything anymore. So many things are dependent online.

Similarly, other participants spoke more generally about needing to catch up with rapidly changing technology. Rob spoke about being "a little bit behind on the information highway," while Carol said, "since the technology is going so fast ahead, I want to try to see if I can do it." Another participant, Wendy, referenced younger family members for her reason for attending the training, showing the importance of maintaining social connections with family and participating in family life in a digital way:

> I've got a computer so I definitely do want to do it and use it and learn because I have children and grandchildren that do all this and I want to be able to be somewhat fluent in it.

Wynia et al. (2019) discuss this idea of participation as "digital citizenship," referring to the necessity of internet use and information technology to access opportunities in society. These quotations reflect similar statements from most older adult participants interviewed—participants seek to keep up with technology in order to participate more fully in society.

Another participant, John, referenced the theme of retirement and leaving the workforce, where he was able to stay current with digital literacy skills, as a reason for attending training:

> At the time, the computers were coming out; I used to be on the front edge, all of these things. Writing programs and everything. Now, I think I'm sort of falling behind; I'm on the tail end.

As Wicks (2004) and Barnard et al. (2013) note, leaving a work or education environment often means losing touch with current digital technologies and reasons to keep up to date with new technology. John demonstrates the reality of this concern.

The need and desire for digital literacy training for older adults are evident. The older adults interviewed in this study reflect broader patterns

supported by the literature of the skill limitations and motivations that older adults experience, leading to them seeking out a space to address these needs.

Ageism

The primary theme that emerged in these interviews was the role of ageism, or negative attitudes or behaviors toward individuals based on their age, in older adults' experiences of digital literacy training.

Other research has shown that ageism plays a major role in older adults' digital literacy levels and learning. These studies illustrate older adults having low confidence or feeling inadequate due to lack of knowledge; portrayals of older adults as irrelevant or resistant to technology; the knowledge of older adults with high levels of digital literacy as not taken seriously; the barrier of feeling "too old,"; or older adults comparing themselves to younger generations who are described as "intuitively" able to have digital skills (Costa et al., 2019; Lenstra, 2017; Schreurs et al., 2017; Vaportzis et al., 2017). These stereotypes and consequences of ageism are reflected in our study's findings.

Identification as older adults was a strong undercurrent in almost all participant interviews, even though no interview questions specifically focused on ageism. Sometimes, this came up in subtle ways, when participants spoke about their skill level and need for training, but in several instances, it was explicitly stated, both in terms of participants' own self-description and their discussion of other older adults at the training or older adults as a category.

Examples of self-description came from several participants. Suzanne, in referencing her age, said "I don't really consider myself very up to date." Similarly, John described himself as "falling behind," saying, "I'm on the tail end. It takes me a little while to get to build my confidence up to work with these things."

Joyce said, "[W]e can all do things like send emails, but we don't have the intuition to move around and [pick up] jargon," referring to herself as part of a larger identity category of older adults who, as she states, do not possess technological intuition or language.

Most explicitly, Tanya stated: "I don't know anything because I've never had the formal training because I'm old," connecting her identity as an older adult directly to the experience she has not been able to have in terms of digital literacy.

Comparisons or generalizations were also expressed by several older adult participants. Suzanne described the differing abilities of age demographics, stating, "At this point, this year, at the age of 40 and above, [people] aren't as technology-savvy." She also spoke somewhat negatively

about older adults who are resistant to technology: "I have heard people, my generation [and] younger by a bit don't want a computer."

Linda, too, talked generally about older adults' limited abilities with technology:

> I know a lot of […] older people, especially [are] not that familiar with computers and I think they're kind of afraid to just go ahead and try these things. They always think, oh, they're going to break something.

Alan spoke directly about the other older adults attending his digital literacy training session:

> I think for some […] it was probably confusing, and they probably couldn't walk in and do it. […] I suspect for some, [the instructor] went through the instructions pretty quick […]. I was sitting in the front row. I could see it and I could write it down. And I'm familiar enough […] Without people to guide them when they come back, I think it would be tough for some.

While Alan is confident in his own skills as an older adult, he differentiates himself from the rest of the group (also all older adults), repeatedly describing how, "for some" who are less familiar with digital technology, the training session may have proven too difficult.

Themes of resistance, fear, inability, and falling behind—these negative portrayals of older adults' digital literacy skills are ingrained deeply in society. Without specific inquiry, interview participants engaged in ageist stereotypes and attitudes to describe their own experiences of deciding to attend and participate in digital literacy training sessions.

Ageism, like many other forms of discrimination, is embedded in society and thus affects individuals on both internal and external levels. Arthanat et al. (2019) found that reluctant attitudes toward digital technologies are underscored by "fears of the unknown in which ageist attitudes are internalized, including that in later years of life, there is a decreased ability to learn new information and master new skills" (p. 456). Similarly, Mitzner et al. (2010) discuss how the difference in perception of technological abilities between younger and older people is largely due to confidence rather than actual skill—older adults often underestimate their own knowledge due to internalized ageism. Self-perception is influenced by the social environment and societal attitudes toward older adults. According to Barnard et al. (2013):

> The idea that people are too old to learn may come from an individual him/herself, but also from the environment. If the self-perception is too negative, people will not start with the learning process, but reject the technology as being too difficult for them. (p. 1723)

Internalized and external ageism affects individuals' confidence, self-perception, and willingness to learn. It impacts the identity of older adults

as well; as Caidi et al. (2020) state, personal narratives, affected by social relations, contexts, and imaginaries are important for meaning-making and identity. Ageism's effects on digital literacy can result in social exclusion. As a participant in Williamson et al. (2010) study said, "[A]s we age, we get marginalized if we can't do [technological] stuff" (pp. 185–186). In addition to these individual and social impacts, ageism also has an effect on the actual digital literacy skill level of older adults. Lagacé et al., 2015 study discusses the extent to which older adults' endorsement of ageist stereotypes affects digital technology usage competency. The authors give the example of how, in the workplace, older workers are negatively stereotyped as less productive, less motivated, and less capable of learning and adapting to changes than younger workers. This ageism at work generates feelings of dissatisfaction among older workers, intensifies psychological disengagement, and lowers self-esteem (Lagacé et al., 2015). Thus, as the authors note, "one of the most insidious effects of ageism is that with age, individuals may internalize, i.e., integrate stereotypes into their self-concept and behave in such a way as to paradoxically confirm and reinforce these stereotypes" (Lagacé et al., 2015, pp. 2–3). This study's results showed that internalized ageism partly determined older adults' abilities with technology: the higher their level of agreement with age-based stereotypes, the lower their level of competency. Lagacé et al. (2015) reinforce that ageism must be taken into account to explain the digital divide. Ageist stereotypes impact the societal treatment and portrayal of older adults, their perception of other older adults, their self-perception, and their digital literacy skills.

Martin (2009) discusses the impact of ageism on identity for older adults and offers ways forward that connect learning and identity. He highlights the role that learning plays in constructing one's own identity and goal-setting for growth, arguing that older adults can actively participate in what they do and how they are perceived; digital literacy is one facet of such participation and learning (Martin, 2009). According to Martin (2009), digital literacy for older adults can address "the ageist stereotypes which devalue and disempower senior citizens by presenting them as unproductive and dependent, and thereby rob them of their own self-worth" (p. 12). Similar ideas were expressed in our participants' discussion of the digital literacy training as a safe space for learning and growth.

Gender

Gendered dynamics were a second theme evident in analyzing the participant interviews. While most participants engaged with ageist stereotypes,

some engaged with these stereotypes in distancing themselves from other older adults, who they deemed as less competent or confident. The three participants who reinforced ageist portrayals while distinguishing themselves from these stereotypes were all men. Although conclusions cannot be drawn from such a small sample size of participants, a discussion of the gendered dynamics possibly evidenced by these three older adult men follows.

Alan, as discussed in the *Ageism* section, told interviewers that "for some," referring to the other older adults in his course, the training was probably confusing, but due to his familiarity with the content, for him "it was fairly easy and straightforward."

Dennis, too, expressed his own confidence in his skills and his ability to learn new skills, but for other older adults in his training session he casts some doubt, he states: "It depends on the senior. The other guy [who] was there seemed to work with computers a lot. The lady in the back row, she doesn't seem too confident; that lady [who] left that paper doesn't seem to be confident." Dennis specifically referenced the gender of the other participants in his course, stating a perceived high skill or confidence of a male participant and a perceived low confidence of two women participants.

Finally, Pete similarly noted his own skill level and comfort in comparison to other participants who found the material more challenging. When asked by the interviewer if he had any challenges, Pete responded: "[F]rom my level of […] literacy, not really, but as [the instructor] was walking around, I could see that there were people having some challenges."

Pete also referenced his wife when asked about why he had decided to come to the training:

> I'm fairly good on the computer, of course you get an app computer at home and I work mostly on Microsoft. But my wife, she's never really worked that much on the computer […] so she wanted to come. But then I thought, you know what? I could still definitely learn something, which even today I did, quite a bit actually, little things that still helped me.

In comparing his own skills with technology with his wife's lack of experience, Pete reinforces a gendered dynamic in which men have higher confidence, more experience, and greater skills with digital technology (Hadziristic, 2017; Vaportzis et al., 2017).

As Hadziristic (2017) states, gender stereotypes affect perceived and actual gender differences in technology use and ability. These stereotypes are embedded into society in such a way that from a young age, children's ideas about intellectual ability and career ambitions are affected by gender roles (Hadziristic, 2017). Women are underrepresented in post-secondary

STEM disciplines, among graduates, and in STEM/ICT professions (Serenko & Turel, 2021); in Canada, women are about 23–25% of those in ICT professions (Hadziristic, 2017). A 2014 study from Google found that factors such as social encouragement, self-perceived proficiency, academic exposure to computer science courses, and perceptions of career success play into this discrepancy. Vaportzis et al. (2017) similarly note that studies have found that men are more likely to use or own technological equipment compared with women. In a 2006 study, Czaja et al. (2006) also found that older women used fewer types of technology, were more anxious, and had less positive general attitudes about computers relative to older men.

Like ageist stereotypes, gender stereotypes can be self-fulfilling. Gender roles and dynamics are socially constructed—when women are told from a young age that a career in technology is not for them, they may choose to engage with digital technology less in favor of paths that are more socially encouraged for their gender, resulting in lower skill level and confidence. Conversely, men may have increased skill and confidence with technology despite no innate higher abilities. The above excerpts from the three older adult men demonstrate the perceived higher skill and confidence, specifically in comparison to women, that may be a result of gendered dynamics in technology learning and use.

Training environment

A third theme emerging from participant interviews is the success of the public library digital literacy training as a safe space for learning. Research shows that a safe, supportive space for experimentation and facilitation of learning is key for older adults learning to use digital technologies (Barnard et al., 2013; Betts, Hill, & Gardner, 2019; Steelman & Wallace, 2017; Tsai et al., 2017; Vaportzis et al., 2017). Almost all older adult participants, regardless of anxiety or confidence levels, described the training session as a space that enabled supportive learning in a way that learning on their own did not. Participants discussed the training as a place where they could face their fears of breaking the technology or making an irreparable mistake, exemplifying a common theme discussed in the literature on older adults and digital literacy (Vaportzis et al., 2017). They also spoke more generally about addressing anxieties around technology use with the support of an instructor and other participants. Carol said:

> [F]or you it's easy but for me it's not easy because I'm afraid to ruin the computer or break the computer. They said "No, you'll never break the computer." They said, "We'll help you." […] Now I want to see what [the instructor] is going to do for us so that if I need extra help, I will go to him and learn.

Linda expressed similar sentiments, saying that older adults generally think "they're going to break something […]. I think [the training] gives you a little confidence to go ahead and just try these things out and see for yourself."

Joyce stated that she would tell a friend that the class increased her comfort level by giving her a place to try different techniques and letting her "talk with other people, which gives you some confidence […] you've seen how things work and things aren't going to collapse if you push the wrong button."

John, too, said that he is "always apprehensive when [he is] working with machines […] Thinking that I'm going to do something wrong." As he noted, "I don't necessarily [try new things online] because you're sort of hampered sometimes by your own inabilities." But in discussing the training's impact on his confidence with technology use, John said, "It made me feel [like] I could do it."

Similarly, Linda also said that "[the training] improves your confidence and [lets you] try out some of these things on the internet." Rob noted the supportive atmosphere of the training, saying, "I find that I was very comfortable in there." And Pete, despite confidence in his existing skills going in, still found the training to be helpful for himself, stating, "I still did learn some little things that actually helped me." Pete also described the way that the digital literacy training session can be different from at-home learning: "[M]y wife and I were playing around on the computer at home and I was trying to show [her] something, but [the instructor] did a great job of explaining it and I could see her go, 'I get it now'."

Barnard et al. (2013) state that for older adults learning to use digital technologies, "[a]vailability of support, technical and emotional, is crucial in the experimentation phase" (p. 1723). A supportive environment is essential for experimentation, exploratory learning, and decreasing anxiety for older adults (Betts et al., 2019; Sackmann & Winkler, 2013; Steelman & Wallace, 2017; Tsai et al., 2017). In a 2017 study, older adults participating in a focus group after digital literacy training talked about the "value of a safe learning environment where they could learn about digital technology in an accessible, appropriately paced, and inclusive manner" (Betts et al., 2019, p. 1155). Having a supportive instructor who guides experimental learning is key (Steelman & Wallace, 2017; Vaportzis et al., 2017). The public library setting is also ideal as a safe environment for learning, since public libraries are represented and constructed as comfortable places of lifelong learning (Williamson et al., 2006). With the library setting comes an additional social benefit of building supportive relationships with public library volunteers and staff (Lenstra, 2017).

Implications

These findings may be useful when considering future directions of digital literacy training for older adults in public libraries. The role of societal and internalized ageism, as well as reasons for attending training, potential gender dynamics, and the existing experience of the library training as a safe space for learning, offer insights into the experiences, needs, and priorities of older adult learners.

As Willett (2016) notes, it is important to problematize library ideals of access and reflection of community needs, looking at who might be left out, how these narratives of access are constructed, how older adults are experiencing the culture of digital literacy training in public libraries, and takeaways for the future of the training. It is essential to maintain an understanding of the lower digital literacy levels of older adults and the real need for learning and instruction, while not reaffirming ageist stereotypes.

In examining the reasons that older adults tend to come to the training, one implication involves recognizing and addressing the anxiety that might bring learners to the training. Older adults experiencing anxiety around technology might not be receptive to typical instruction methods. For example, according to Hill et al. (2015), emphasizing the benefits of digital literacy may not be a helpful technique for anxious learners:

[O]utlining positives without addressing the fears will not lead novices to engage or adopt digital technologies. Therefore, in order to achieve inclusion at a macro level, training programmes and policies should be cognizant of the barriers to technology and explicitly address them as a first step. (p. 421)

Addressing the barriers of fear and anxiety, even at the policy level, is key for older adult learners. Instructors (and the training of instructors) can also take this into account by building rapport and trust with training participants, as well as slowing down, offering time and patience, and promoting independence when the anxiety has lessened (Arthanat et al., 2019; Steelman & Wallace, 2017).

Creating classes solely for older adults is another possible future direction to address anxiety as well as some aspects of ageism. As Dennis, an interview participant, suggested, "Maybe they should advertise computer courses for basics for seniors because that may be less intimidating." He continued, "If you advertise it for seniors alone, I think it would be a more comfortable fit for people that are older and intimidated by the whole thing." Similarly, Wynia et al. (2019) state that in Canada, some libraries have "labelled programs as for older adults to intentionally honor the uniqueness of later life and to create a designated space for them" (p. 13). The importance of the "safe space," as discussed by older adult

participants, could expand to programming or spaces that are only for older adults in order to facilitate maximum comfort.

However, opinions differ on the closed space technique. Some libraries in Canada avoid labeling programs specifically for older adults "to prevent deterring potential program participants who did not see themselves as 'older'" (Wynia et al., 2019, p. 13). Williamson et al. (2006) also found that baby boomer focus group participants "made it quite clear that they were not keen to enroll in courses characterized as 'Internet for oldies'" (p. 67). Costa et al. (2019) suggest moving beyond the older adult identity category to "devise an understanding of generational practices that is not solely or mostly reliant on age differences" (p. 568). Understanding that older adults are not a homogenous group and tailoring training accordingly, whether that means creating closed spaces for seniors, incorporating other demographic or generational differences, or simply marketing the training by the content being taught, are all viable options that might contribute to a comfortable training environment.

Understanding the digital literacy training experience of older adults is a necessary step in addressing ageist stereotypes and internalized ageism. Recognizing their unique perspective and emphasizing the knowledge that they bring to the training themselves may both empower older adult learners and provide useful information and direction for digital literacy training in public libraries. One way to work toward these goals is to involve older adults in planning and possibly facilitating the training. Research shows that direct engagement with older adults in the program development process is a key factor in a positive learning environment and in addressing ageism (CFLA-FCAB, 2016; Martin, 2009; Wynia et al., 2019). The *Canadian Guidelines of Library and Information Services for Older Adults* recommend involving older adults in the library's planning process "either by establishing a seniors' advisory committee, or through regular liaison with seniors' organizations and seniors' centres" CFLA-FCAB, 2016 (CFLA-FCAB 2016), p. 2). Engaging with older adults allows libraries to directly understand their programming needs and wants while recognizing their agency and power (Lenstra, 2017; Wynia et al., 2019). As Lenstra (2017) writes, "older adults are not passive recipients of support services created for them by other members of their communities. Instead, they actively shape the community-based information infrastructure that they and others participate in throughout the course of daily life" (p. 66). According to Lenstra (2017), when libraries do not engage in consultations, older adults still express their agency by negotiating and attempting to adapt the library's services to their needs. Furthermore, older adults often have their own technological devices and bring them to public libraries to learn to use them despite the common regulation of institutions

providing support "only to those devices owned by the institutions" (Lenstra, 2017, p. 72). Such expressions of agency can be difficult for librarians who are mandated to provide only certain services; it is therefore helpful at both a participant and organizational level for consultations or partnerships to occur in advance, in order to best meet the needs of staff and communities.

In addition to recognizing the value of older adult perspectives by directly engaging with the community prior to implementing training, an asset-based approach to digital literacy instruction can work to address ageism and promote positive learning. As Wynia et al. (2019) note, the public library's focus on social inclusion may predispose public library staff to rely on deficit-based thinking, or how learners may be deprived or disadvantaged, and attempting to include learners through training grounded in that understanding. The authors write:

> Deficit-based thinking within the field of older adult programming may thus create conditions that are favourable for compassionate ageism to take root in libraries. Compassionate ageism entails stereotyping older adults as poor, frail and dependent and neglecting to recognize their strengths and capacities. Using an asset-based approach to program development, focusing on the capacities of individuals rather than their deficits, is thus an important recommendation. (Wynia et al., 2019, p. 17)

Instruction that works from a recognition of the strengths and abilities of older adults can address the ageism pervasive in society. An instructor who works from an asset-based approach can build the confidence of older adults and lessen the fear and anxiety that they might feel. In this case, narratives of being "behind the times" or being innately less able to learn technological skills might be less present in participants' mindsets. An asset-based approach may also be able to mitigate the gender dynamics at play in digital literacy training by promoting the confidence and unique skillset of all learners. Wynia et al. (2019) suggest incorporating older adult volunteers into public library training sessions; similarly, Tsai et al. (2017) recommend encouraging older adults to teach each other, promoting peer-based social support and the diffusion of digital literacy. Such methods reinforce the assets and knowledge of older adults.

Other strategies mentioned in the literature that can work to address societal and internalized ageism and enable a positive learning experience include: creative marketing to reach populations that do not access the internet or are unable to access the physical library (Wynia et al., 2019); blended workshops for teaching, which would incorporate multimedia learning activities and materials, adapt to the learning styles of each older adult, stimulate new ways of learning, and allow students to have an active role (Martínez-Alcalá et al., 2018); and framing digital literacy as a path to

continuous learning, rather than an imperative to catch up with the times—it can be a way of staying intellectually engaged, incorporating learning into a positive older adult identity, and a method of gaining information, communicating, and socializing (Costa et al., 2019). These strategies could work to continue building a safe space for digital literacy learning for older adults and emphasize the unique knowledges, stories, and abilities of older adults moving forward. Engaging older adults' specific knowledge and experiences, with attention to the distinct experiences of technology generations, to collaboratively design digital literacy training in public libraries might enable older adults to unlearn ageist stereotypes and build and maintain confidence in their own skills, knowledge, and goals.

Conclusion

Digital literacy training in public libraries is an accessible, successful method of increasing digital literacy levels across demographics. Deepening our understanding of participant experiences with digital literacy training is essential to its growth. This study contributes to theoretical understandings of digital literacy and digital literacy instruction by offering insights into the experiences, needs, and priorities of older adult learners. In examining the experiences of 12 older adults who participated in digital literacy training sessions in one city in Ontario, this study demonstrates that societal and internalized ageism, skill limitations, high motivation, gender dynamics, and perception of safety and comfort in the library space are key considerations for digital literacy training for older adults in public libraries. These considerations may be addressed through increased understanding in the human services of the barriers older adults face in approaching technology and emphasizing an asset-based approach to digital literacy training to engage older adults' specific knowledges and experiences.

As Dennis, an older adult participant, says, "I don't think we can generalize about seniors. There are a lot of seniors that don't have computers, that don't even want anything to do with them. There's other seniors that are very keen to learn whatever they can learn and they enjoy it." The implications discussed in this article are not static conclusions about all older adults, but rather a snapshot of potential themes and future directions for older adult-specific digital literacy training. The study's small sample size and limited diversity cannot reflect the many varied communities and heterogeneous processes of aging that older adults identify with and experience. Approaching the topic with a specific lens of intersectionality would also highlight the many ways in which power structures and dimensions of identity create unique experiences for older adults engaging in digital literacy training (Crenshaw, 1991). As Wicks

(2004) notes, within the older adult category, age differences can create distinct groups; Williamson and Asla (2009) also discusses the distinction in digital literacy learning of people in the fourth age, which is characterized by illness, frailty, dependence, and imminence of death. Setting is also key, as older adults in retirement or long-term care homes can have vastly different needs and experiences than other groups of older adults (Wicks, 2004). Older adults with lower socio-economic status may have lower levels of digital technology use, and there may be implications for other equity-seeking groups as well (Arthanat et al., 2019). Further research could examine the experiences of older adults in public library digital literacy training with attention to intersectionality, equity, and marginalization.

The implications discussed here are important to consider for future planning and implementation of digital literacy training in public libraries; however, it is essential to recognize the challenges and limitations that libraries and their staff face. Limited funding is a major barrier to change or expansion of digital literacy programming (Julien et al., 2020; Julien & Hoffman, 2008). Increased pedagogical training for instructors that would allow for an approach tailored to older adults can be difficult to budget for and schedule, and the multi-faceted roles of library staff can limit the time and attention allotted for a focus on digital literacy training (Julien et al., 2020; Julien & Hoffman, 2008). As Julien et al. (2020) note, increased formal evaluation of digital literacy training programming in public libraries may serve to justify the investment of public and private funds into digital literacy programming.

Further research on older adult experiences of digital literacy training will be useful to inform funding allocations as well as the specific needs and challenges of older adults. Looking forward, part of the literacy work undertaken through library-based initiatives may need to challenge older adult participants to deconstruct the negative stereotypes about their capacity to become digitally literate. It is also vital to support the development of alternative narratives that reinforces the capacity of older adults to gain digital literacy and to integrate technology use into their daily lives. The national survey that will be conducted in phase two of this study will provide further insight of the investments being made in digital literacy training and their outcomes for training participants and the nation. Gaining further understanding in these directions will offer libraries increased information and opportunities with which to design and deliver programming for this unique population.

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