Improving Digital Literacy in Older Adults

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The importance of digital technologies and the ability to appropriately utilize them has grown exponentially in recent decades. While the demand for use of modern technology across industries increases, people and organizations strive to adapt to delivering actions and outcomes not only in the physical realm, but the digitized cyberspace around us. New technological systems come into existence that are comparable to human life—rapidly. Many younger people who grow up using or being exposed to the use of technology appear to showcase fluidiety in the use of technology, similar to that of a second language. Yet older adults today who have experienced years of living with and without technology as a social norm or societal expectation display a difficult and frustrating learning experience. Theorizing that technological adaptability decreases with older age amidst a technological renaissance, the question gains prevalence—how can all humans get on board and further dissolve the distinguishable barrier between the world humans walk upon and the cloud-computing world that circulates around them?

Assuming that hard-technology based skills in addition to intuitive knowledge and functions soar in the younger population who lived little life *not* knowing the internet, cognizance is lackluster and proficiency in technology is the furthest thing from natural for older adults where the internet appears to be a newborn, foregin universe that is now consuming space and stripping away comfort in the world they know. Standard literacy expectations have evolved just as technology has, suggesting that digital literacy is woven into the fabric of basic human communication skills and survival skills, and the opportunity to seek knowledge is limited without it. For the world's inhabitants where technology does not grow up alongside of them, how can digital literacy be improved? Introductory programs and learning opportunities exist,

merely as an option, and a pandemic-infested world where the internet is necessary does nothing but push digitally-illiterate humans off to the side for them to watch the world go by. While the internet grows expeditiously, "individuals are required to use a growing variety of technical, cognitive, and sociological skills in order to perform tasks and solve problems in digital environments. These skills are referred to in the literature as 'digital literacy'" where the branching out of these skills can promote "multidimensional thinking" (Eshet, 2004). Assessing digital literacy across generations can measure the connect (or lack thereof) between them, "because unlike most everyday circumstances, where age is usually associated with experience, in the digital era, the opposite is true, with the younger users being more experienced than the older ones" (Eshet-Alkalai & Chajut, 2010). "Research in this article addresses the current status of digital-literacy improvement programs in how they are run, how participants feel, the successes and failures of such programs, as well as how society and the internet could evolve if and when the majority of its members have a firm grasp on technology.

Method

The article is based on three methods surrounding digital literacy: group studies to uncover differences in ability and understanding across age groups, educational programs to decrease those differences, and public resources aiding in the increase of digital literacy. Digital literacy is argued to be composed of five types, or branches: "photo-visual literacy, reproduction literacy, information literacy, branching literacy, and socio-emotional literacy" (Eshet, 2004). The group study distributed assignments to work on exercising and identifying strengths and weaknesses among different subsets of digital literacy across three groups of participants, in which 10 were "high-school students, 10 university students, and 10 adults over age 30…" (Eshet 2004). Second, the NTL program was created to enhance digital literacy education and ability for older adults and was created in 2019. NTL's curriculum consisted of 1-hour lessons covering technology 8 times a week, paired with "technology information, games, vocabulary, homework assignments and time for student questions" (Oest & McGinty, 2020). In the initial study, two groups of 8 students each were given a Lenovo tablet computer to aid in the practice and implementation of what they were learning. Students were taught how to navigate and use the tablet as well as how to operate Zoom Video Communications app. In an aim to examine just how pivotal public resources can be in the development of digital literacy for older adults, 12 adults aged between 60 to 82 years were involved in attending "digital literacy training sessions such as: *an introduction to the internet, search engine basics, introduction to word processings; or how to digitize media"* at a public library system in Canada (Barrie et al., 2021).

Findings

Across this study, different age groups displayed strengths in different branches of digital literacy. In the pilot study, "adults showed a higher degree of information literacy," meaning they are better at critically evaluating outside sources, than younger adults," yet in this study "the findings reveal that the younger the participants, the higher their ability to perform the task successfully" (Eshet, 2004). The NTL students who learned through use of a Lenovo tablet were "able to keep all of the tablets for as long as they live at the independent living facility," and 10 months after the study, "students continue to use the tablets" (Oest & McGinty, 2020). Upon examination of the lessons given through the public library paired with the interviews of the participants, "ageism emerged as a central theme, particularly when examining how participants described themselves and each other after a digital literacy training session" (Barrie et al., 2021).

Discussion

Improvement in digital literacy for older adults offers nothing but a refresher for the quality of their lives, the internet as a place of exchange as well as a place of business, and society at large. Studies have been found "using the Internet has been associated with lower levels of depression in older adults and improved quality of life. Using mobile phones, tablets, and/or computers could open the doors for older adults to feel more connected to the outside world and able to participate in society again" (Shillair et al., 2015). A greater grasp on technology promises an increased quality of life and connection as older adults' "ability to cope with the levels of social support that they receive in relationship to their perceived needs for human interaction is a key factor related to their overall life satisfaction levels" (Shillair et al., 2015). While it is common for older adults to feel loneliness as both them and their families age,

this can be worsened by the little ability they may have to keep up with standard practices of

modern, primary communication used by their younger relatives, and lack of seeing family in

person. It is almost as if older adults have to choose between adapting or getting left behind, in

that "letter writing and personal visits have often been replaced by emails, texts or video calls

(e.g., Skype or Facetime). To stay connected with the younger generations, older adults may

need to learn how to use these new technologies" (Shillair et al., 2015). The internet not only

benefits older adults, but the online presence of this population helps expand the internet in

societal and business-related aspects.

    If more users join the internet, many new doors are opened. New data will be accessible,

and there will be a new market for researchers to explore as well as a new market for businesses

to serve. Users are customers and also create the demand for the product or services that they

use. Also, as more users join the internet, new ideas, discoveries, and movements have an

opportunity to be shared, made, and spread worldwide. Older adults having strong digital literacy

to use the internet appropriately is helpful and "is also linked to better mobility, slower declines

in cognitive function, and lower health care costs, thereby benefiting society at large" (Shillair et

al., 2015). If digital literacy is seen as a modern lifeline to connect those around the globe, the

large amount of opportunities can suggest a better chance at success. Digital literacy is key for

the assessment of digital citizenship to the internet, with which "digital citizenship becomes the

key to individual behaviors, because what integrates them are the collectively shared values of

civil society" (Milenkova & Lendzhova, 2021). Even when times are trying in society, "digital

literacy during social crises is crucial for maintaining the normal course of ongoing events and

their interpretations," because "digital citizenship contributes to the control of community

understanding and individual practices" (Milenkova & Lendzhova, 2021).

Ideas for Future Research

When considering the expansion of digital literacy improvement for older adults, meeting

the student where they are at, accepting those circumstances, and adjusting the educational

experience based on the specific condition seems to be a key to appealing to the learner. It can be

difficult to transmit and effectively convey information to a closed-off gate, especially when

ageism "plays a major role in older adults' digital literacy levels and learning" (Barrie et al., 2021) as

conscience is diminished when approaching technology "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" (Barrie et al., 2021).

Anxiety also poses limitations to absorbing information since "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" (Barrie et al., 2021). To improve

the learning experience starting with the students feelings "research shows that a safe, supportive space

for experimentation and facilitation of learning is key for older adults learning to use digital

technologies" (Barrie et al., 2021). A supportive approach can benefit older adults as " The roles

of tutors, peers, instructors, professionals, volunteers, and younger generations were considered

important" (Rasi & Rivinen, 2021). Learning in groups or an educational environment can

improve the inclination to learn and cease the intimidation behind doing so. Makerspaces, "collaborative

creative spaces in learning institutions with embedded ideals of entrepreneurship, skill development, and

community engagement" has put a larger eye on the importance of technology especially when it comes

to communication and discovery. In terms of improving the learning experience in regards to the conditions of the learners abilities, "some older adults have declining health or decreased mobility [which] may have made it difficult for participants to readily access the computers that were placed in the communities as part of this project" (Shillair et al., 2015). Impaired cognitive function can be helped by how lessons are presented. Visual learning can be promoted among older adults and their path to enriched digital literacy, since "usability research has indicated that it is easier for most users, beginners and experts alike, to learn from graphic interfaces, because they employ natural visual communication with the user" (Eshet, 2004). Not only is this accommodating, but beneficial in the long term due to the fact that "people with photo-visual literacy have good visual memory and strong intuitive-associative thinking, which help them decode and understand visual messages easily and fluently" (Eshet, 2004). With this in mind, one method of using visual learning tools would be "Using handouts with a detailed procedure to learn a new function can help reduce fears in learning" (Yoo, 2021).

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