

Accessing InterACTion: Ageing with Technologies and the Place of Access

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Abstract. In this paper, we reflect upon our participation in a pilot digital literacy project titled InterACTion currently being deployed in low-income housing for seniors the city of Montreal. To assess the complexities of access with respect to ageing in this real world setting, we draw upon Clement and Shade’s ‘Access Rainbow Model.’ We use the InterACTion project as a case study and formulate seven lessons that we have gleaned in the carrying out of the project, each of them working to display intricacies of access within a context of precarious ageing and situated engagements with technologies. Our interest in drawing from the model lies in our understanding of access a multi-layered concept that relies both on the establishment of technical requirements and on a host of entangled conditions that are crucial in determining an individual’s ability to use digital technologies.

Keywords: Access rainbow · Access · Digital literacy · Place · Ageing

1 Introduction

This paper focuses on the relationship between ageing and digital technologies, with a particular emphasis on devices such as laptops, tablet computers and other hand-held portables. These are the devices that promise users wireless telecommunication or networked services anywhere and at anytime. Within North American society, the wireless industry is burgeoning. However, if one looks at data on adoption rates, one notices that the demographic groups with one of the lowest rates of use are older adults.¹ However, is age itself the only relevant “variable”? What other factors determine or predict access to mobile networked devices and services?

To understand barriers to access in relation to older adults, we reflect upon our participation in a digital literacy project titled InterACTion currently being deployed in the city of Montreal in Québec, Canada. InterACTion is conducted with a community-based group of social service providers, Groupe Harmonie, an organization that works with older

¹ For instance, we can draw here from data gathered by the *Centre facilitant la recherche et l’innovation dans les organisations, à l’aide des technologies de l’information et de la communication (TIC)* (CEFRIO) for the province of Québec in 2010. Though their report noted the high uptake of technology by seniors, it further affirmed that ICT use by older Québécois lagged substantially behind that of younger cohorts. Some 54 % of adults over 55 regularly use the Internet (more specifically this corresponds to 68 % of those 55 to 64 and 40 % of those over 65). Some 75 % of the general population uses Internet while 94 % of those 18 to 24 use it) [1].

adults living in social housing in the downtown core of the city. InterACTion began in April 2014 and is on-going as of the writing of this paper. InterACTion is not only a pilot project, but it is a unique case study, for it highlights the desires, needs and barriers to access faced by groups of seniors living in poverty and requiring social assistance in an urban centre. While perhaps not the ideal target market from an industry standpoint, the case of InterACTion draws attention to real-world challenges for understanding the experience of access faced by many older adults in a moment where there is increasing pressure to go digital and greater gaps between rich and poor across the globe.

To assess the complexities of access with respect to ageing in this real world setting, we draw upon Andrew Clement and Leslie Shade's 'Access Rainbow Model.' The Access Rainbow Model is a heuristic tool that identifies seven interrelated layers that pose a challenge to access provision including: carriage facilities, devices, software tools, content/services, services/access providers, literacy/social facilitation and finally governance as an integrated socio-technical architecture [2]. For Clement and Shade, layers are stacked and ordered yet overlapping, and all of them are necessary for a model that "forms the basis of a workable definition of 'universal access'" [2, p. 1]. Lower layers of the rainbow point to the technical dimensions of access, upper ones refer to social aspects while "the main constitutive element is the service/content layer in the middle, since this is where the actual utility is most direct" [2, p. 4].

In using the Access Rainbow Model we reflect upon our engagement with the InterACTion project in their intertwined complexity, by this particular population. As Clement and Shade argue, communications infrastructures are already less accessible to certain individuals in society, often to those who continually experience systematic disadvantages connected to age, gender, income, language, ethnicity, disability and so on [2, p. 5]. Our interest in the model lies in its definition of access as a multi-layered concept that relies technical requirements and a host of conditions that determine an individual's ability to use digital technologies at different moments in the life course. While we agree that the model offers an important set of guidelines we also contend that in a real world setting, the image of a layered rainbow is not so easily applied. The strands not only overlap, but they are interwoven at each and every moment.

To unravel this interweaving, we offer seven lessons gleaned in the carrying out of the project. The lessons we articulate display the intricacies of access within an overall context of precarious living, and also emphasize the emplacement and contextuality of access. What does it mean for this particular group of people to age in a digital world full of promises of unfettered connectivity and technological abundance? How do we understand access within this context, and from their points of view? What lessons can be learned from the project?

2 Situating InterACTion: The Context

The non-profit community organization Groupe Harmonie² was created in 1983. Groupe Harmonie works with seniors (55 and over) in Montreal who are dealing with addictions, including alcohol, drugs and gambling. Groupe Harmonie reached out to

² www.groupeharmonie.org.

our research team *Ageing, Communication, Technologies (ACT)*³ to jointly put in place the InterACTion digital literacy workshops in two social housing buildings (*habitations à loyer modique* or HLM) located in the downtown core of Montreal. The two buildings are meant to house adults 60 and over who are living later life in a state of poverty (generally understood to be living with less than \$27,500 CAD annually) [3].

The initial task consisted in installing routers in the common rooms of each building to provide an Internet connection in the shared spaces to all residents without cost or password requirements. The InterACTion project intended to provide a physical, material connection, what Clement and Shade identify as the availability of an adequate carrier mechanism that is fundamental to the provision of services online. As it soon became obvious, enabling this physical infrastructure is far from being tantamount to access. To introduce the new infrastructure, a router with a connection, we organized welcome parties in the common rooms in April 2014 in the hopes of meeting residents, sharing food with them, explaining the project, asking them about their interests, showing them laptop and tablet computers, and instigating them into participating in future workshops. We initiated a door-to-door survey: some thirty residents responded to a simple bilingual questionnaire. With our initial impressions and feedback obtained from the welcome party and the survey, we purchased equipment (four laptops and six tablets), and we launched monthly workshops in each of the building (thus organizing two workshops per month). The workshops last two hours and consist in matching an elder with a device and a tech mentor. The one-on-one tutorial demands of the project, though an effective way to teach technology use and to share knowledge and to engage with elders, are labor and resource-intensive. We have had to mobilize a sufficient number of bilingual tech mentors (often student volunteers) and equipment for each session. At times, the demand has been so high that we have had to turn away elders from the workshops.

To date, we have given eleven monthly workshops in each building, for a total of twenty-two workshops and, at time of writing, the workshops are still ongoing. Since the beginning of the project, over fifty elders have partaken. There are about five residents who regularly attend and there are an average of six residents per workshop. Thus far, ten students and postdoctoral researchers have been involved from Concordia University and Université de Montréal, four members of Groupe Harmonie, a number of volunteers affiliated with Groupe Harmonie, as well as an administrator from Concordia University. During this time we have taken field notes and engaged in informal discussions with the participants.

As the name suggests, the overarching goal of InterACTion is to create a convivial, intergenerational environment for elders to learn how to use digital technologies, identified by Clement and Shade as fundamental to access through social facilitation. But also, and in no small part, an important goal was to find a way for Groupe Harmonie to promote positive human interactions among the building residents (whereas interactions can be fraught and conflictual at times), and to put to good use the common rooms that often go unfrequented by building residents. Here, situating the workshop within the often difficult milieu of shared spaces of low-income housing is

³ www.actproject.ca.

key to understanding learning as situated in particular spaces and places: in the HLMs, people 60 and over are living together in small individual apartment units out of necessity, and not necessarily out of choice.

3 Lessons

3.1 Lesson 1: Situated Methodologies—Accessing Information on Access

One of the key ways of determining access, and constructing meaningful interaction, is to have information on the needs of the population with which one is working. One way to access information is through participant observation. When we organized ‘WIFI welcome parties’ in the common rooms of both buildings in April of 2014, we quickly noticed that seniors seemed more excited about using the tablets and exhibited less curiosity about the laptops at this event. The tablets were initially objects of desire. They captured the interest of residents in the particular setting of the WIFI welcome parties, where the use of the equipment was more cursory, often done while standing up, and thus differed from the longer-length one-on-one workshop setting that would later be adopted. This initial reaction, combined with the societal enthusiasm towards the adoption of mobile tablet computers, and other research that points to the potentially high acceptance and satisfaction rate of seniors learning with tablets [4, 5] led us to speculate that they would serve as a preferred means of technological engagement in the workshops. This was not to be the case.

A second means of accessing information about access is through more formal mechanisms. As a follow-up to this initial encounter, we fashioned a short bilingual ten-question survey to learn more about the interests, desires, and current computer-related skills of the residents who would be our potential workshop participants. We asked what technologies they had on hand. Given the low level of access to both devices and networked services, an online survey would have been impossible: a door-to-door approach throughout both buildings was the only option. Yet even this proved to be a challenge. In a situation of social housing where people rely on government subsidies and are often under the scrutiny of governmental agents and agencies looking to cut benefits, people are suspicious and mistrustful. Residents most often did not want to open the door to talk about computer and mobile computing workshops. When people did answer the door and agreed to the survey, the desire for interpersonal contact meant that a short survey that would normally call for about five minutes often took over forty minutes and we often had to fill it out with them.

What did we learn from those who allowed us access to their homes and who were willing to share information through our survey? The thirty people who did answer indicated that there was a high level of interest in free Internet workshops and that if the community rooms could be opened for this purpose they would be used. The survey further outlined future challenges: the majority of respondents were self-assessed beginners or had “average” level of skills. When we asked what they would like to learn they suggested the some of the basics of Internet searches as well as email, Skype, photo scanning, Facebook and YouTube. But we also noted that “What would you like to learn?” had been the question that was most skipped. This query was frequently met

with uncertainty, and nearly a third of the respondents opted not to answer, unable to point exactly to what they wanted.

A large majority, 84 %, thought that learning more about digital technologies would have an impact on their lives with some 44 % indicating that they thought that this impact could be “big”. Yet this assessment of potential impact was speculative, for the majority of our participants cannot afford to keep up with technology, had never used a digital device for a sustained period of time in their working or personal lives and could not pay to ensure steady, in-home access to an Internet service provider or for a cell phone. As we learned from these first two forays into making contact, methodological inquiries are situated in place and are related to questions of access. Even the ways that one would find out about access is related to access to current technologies.

3.2 Lesson 2: Physical Affordances and Human Encounters

Clement and Shade point out that devices come with particular affordances, which, as other researchers in HCI have indicated, are often seen as some of most important and significant barriers for older adults [6]. Indeed access is often, from this perspective, tantamount to the design of the device and software. While for Clement and Shade, the main issue of access is the high cost of the devices, they also point to usability as a key issue. This intermingling of cost and design affordance became evident in our interactions with seniors partaking in InterACTion, yet even here there are important lessons about what can be learned from working with a group of people over time.

Given our observations at the WIFI welcome party, we initially expected tablets to be more popular. Yet within the first few workshops, it became clear that many of the seniors found it easier to work with laptops. The swiping motion needed for tablet-use was foreign to many residents and, for some, impaired hearing, vision and trouble with fine motor skills became important factors in selecting specific devices. For these participants, the keyboard and screen of the laptops provided them with better affordances. In fact, many of the women, in particular, commented that they were more comfortable with keyboards because of their previously acquired typing skills, which they had developed through a gender-based formal education and work experience. This skillset served as an entry-point, bolstering confidence in their ability to use the technologies. In this instance, while it may have initially seemed as if the design of the tablets offered better affordances, for some of our participants their histories of prior computer use and their embodied subjectivity influenced their choice of device, a point on the importance of embodiment in computer learning supported by the research of Christina Buse [7].

3.3 Lesson 3: Affordances: Financial Considerations

Ironically, although laptops were preferred by the majority of our participants, when making the decision about what they might buy most did not chose this option. Despite the participants’ discomfort and reluctance in using tablets, and their preferred use of

laptop computers at the workshops, those planning to purchase equipment decided to buy android tablets because of their relatively lower cost. These devices have been primarily devised for mobile use and networked connectivity, immediately articulating them to our regulatory context of pricing and contracts in Canada [8]. More affordable and potentially networked, the tablets were not used in the workshop setting, but later purchased anyway: the cost associated with services that is key.

Most residents do not have Internet access in their own units and cannot afford it seeing as the average cost in Canada is extremely high—approximately \$75 a month—and it goes up incrementally every year and often requires a credit card or a credit check. Without either a credit card or a sustained connection in their own apartments, the participants cannot partake in being systematically networked, and therefore see little reason to own either a laptop or tablet. Yet the desire to be a part of a networked society they cannot necessarily afford is present. In one instance, a participant who is using the workshops to write her memoirs on a laptop computer does not need Internet access for the purposes of her project. Yet she still wants connectivity explaining this is “because I am missing out on so much.” Likewise, because of limited funds, she has decided a tablet is a better option for her because of cost, despite the fact she prefers typing on a laptop.

Through this and other conversations with these elders, participants have openly talked about their desires: they imagine themselves wandering the city with tablets surfing the Internet in a park or going to a coffee shop to be a part of a larger cultural scenario of anywhere, anytime connectivity. However, for most of these residents the reality of ownership and unfettered connectivity is quite different: it is mitigated not only by the affordances of the device, but by their ability to quite literally afford to stay connected [9].

3.4 Lesson 4: Language and Literacies

There are other factors of exclusions linked to socio-economic class that influence the ability of our participants to interact with these devices- and to engage in digital learning. While Clement and Shade emphasize the need to enable digital literacy and of the requirement of a “broad range” of knowledge and skills required to engage with network society, *general* literacy is not included in their figuration of access. Lower levels of literacy (along with lower levels education and income) have elsewhere been identified as correlated with non-use of ICTs [10], a consideration that needs to be foreground in an examination of the conditions of access of an older and impoverished population. Canadian data from the International Adult Literacy and Skills Survey reveals that only 18 % of respondents over 65 are situated at a literacy level of 3 or above—level 3 being “the desired threshold for coping well in a complex knowledge society” [11]. A large majority (82 %) of Canadian elders have been deemed to have general literacy challenges. Surprisingly, Canada has significant gaps between levels of general literacy, and has a notably “higher proportion of its population at the highest and lowest levels” [12] thus emphasizing the need to consider general literacy as an important marker of social inequality in the country.

A number of the residents who participate in our workshops have variable levels of literacy that impact their ability to use the Internet, and especially to conduct keyword-based searches. Although this was not an intended part of our project, those least able to read and write are excluded from the workshops either through their reluctance to engage in a public setting that would put their lack of literacy on display or through an exclusion fostered by our reliance on flyers and posters to promote workshops.

As Clement and Shade suggest “[k]nowledge includes an understanding of the various types, sources and uses of a global networked information; the role of information in research and problem solving; and systems whereby information is stored, managed and transmitted” [7, p. 11]. Such information and network literacy assumes an array of knowledge related to information retrieval. With years of Internet use, one builds a verbal and visual lexicon to facilitate software use. Even simple web searches rely on decoding expressions like “quick search,” “I’m feeling lucky” and icons like drop-down arrows, hour and magnifying glasses and spinning beach balls all have a symbolic value that is learned progressively by users and comes to be taken for granted as it is incorporated into what Bourdieu would call one’s “habitus” [13]. The perceived work required to acquire this lexicon can feel like a daunting task for beginners as we found in our workshops. Everything needs to be explained and sometimes translated. Here again, the term literacy is even connected to an ability to operate in several languages in a context like Québec, a province that primarily comprises Francophone speakers who are living in a digital world dominated by English.

Most of our participants are Francophone and they immediately found themselves with the need to customize language settings, as many are ill at ease with the default English configuration of software. This was also the case for several seniors who had visual impairments, and who were burdened by dim screens and unable to read the small characters. In these cases, device and software settings needed to be altered. Customization and the use of optional accessible interfaces require a level of proficiency beyond those afforded by a beginner, presenting a further accumulation of barriers and challenges to be confronted and overcome.

3.5 Lesson 5: Interpersonal Barriers and the Need for “Warm Experts”

As a way of promoting universal access, Shade and Clement emphasize the need for community centers and libraries to provide free internet access, and to be located in proximity to the dwellings of people who would need them the most [2, p. 11]. Ironically, there are libraries and community centers near the two HLMs providing WIFI access, public computers, and affordable workshops on a regular basis. Although we found that these seniors were aware of these devices and publicly available services, our participants remained reluctant to make use of them. They are trapped in a double bind. On one hand they were unprepared to use the technologies alone, did not have access to them in their rooms, nor did they have anyone to turn to in their immediate environment. On the other, they were unwilling to reveal their precarity, alienation and isolation in a public setting. Conversely, the one-on-one setting of the InterACTION workshops for these participants broke through the barrier of personal reluctance by

favoring an approach based on establishing a rapport between participants. Clement and Shade point to the importance of “the social aspects of learning” and the importance of “informal learning environments” where “local experts” can engage in casually mentoring future users, on the job and on the fly, in situations with little pressure. In such contexts, the acquisition of skills occurs in informal settings.

By emphasizing a bi-directional sharing of knowledge and stories our students and other tech-mentors became surrogates for what Maria Bakardjieva [14, 15] calls ‘warm experts,’ or “a close friend or relative who possesses relatively advanced knowledge of computer networks and personal familiarity with the novice user’s situation and interests” (15, p. 74). Warm experts, for Bakardjieva, are uniquely enabled to find potential uses and relevance of the Internet for the learner because they have established relations of trust over time. In this respect, understanding “human practices” not only as a set of skills, but as a part of a set of affective and emotional approaches that can facilitate learning in a particular place, are essential and entangled factors that are typically associated with the macro-level.

3.6 Lesson 6: Spaces of Access

Clement and Shade note that “[g]overnance is about the ways in which decisions are made concerning the development and operation of the information/communication infrastructure” [2, p. 12]. In their discussion of governance, they make specific and explicit reference to a policymaking perspective, which they tie to the actions and abilities of actors from the public and private sectors who play a politically prominent role in affording access to individuals through the imposition of particular legislative choices.

Our case study brings us to consider that governance, regulation and communication infrastructure operates in smaller and more precise, but still immensely powerful ways at local levels- in place. For instance, the structural specificities of the HLM have had an impact on the ways seniors can engage with technologies on site. Despite the fact that WIFI had been made available in the common room, what we imagined as their potential digital commons, the daily realities of the residents have an impact on the uses of this common space, which in turn influence their ability to practice their newly acquired skills to reinforce their learning between our monthly sessions.

While there may be technical connectivity in the common rooms, taking care of the issue of “carriage” identified as essential within the Access Rainbow Model, there were in fact few opportunities for the residents to frequent the space and to use this Internet access to reinforce their learning. Over the years, the use of the common room has been an instigator of conflict among the residents, some of whom are grasping with physical and psychological impairments, and who are not all co-habiting *by choice*. The common space is kept locked by the governing body that controls this residency. Unless Groupe Harmonie is physically present in the building to prevent both conflict and theft, access is restricted for residents who might want to avail themselves of this common connectivity. In addition, because of the lack of funding to the maintenance of the building, no one is currently employed to clean the common room, which deters its use. Keeping the room locked has become a cost-efficient alternative to finding

adequate staff or volunteers to do rudimentary maintenance. Because of these circumstances, a bench located outside of the locked common room has become an important and impromptu point of access in one of the buildings, as the WIFI network is still accessible from there and the bench itself has no history of contestation.

3.7 Lesson 7: Meaning, Purpose and Intermittent Access

Clement and Shade identify content as a principal constitutive element, explaining that “this is where the actual utility is most direct” [2, p. 4]. Yet what does this mean for users living in conditions where there is an accumulation of barriers to access? One of the key elements that determined *return* participation for our residents was finding a *reason* to use the internet, a sense of purpose—what Jean-Paul Sartre [16] identifies as a ‘project’—that actually imbue the sessions with meaning. Likewise, Clement and Shade suggest that content and services “must include the ability for users to interact in a creative and participative fashion as well as simply to receive stimuli” [2, p. 10]. These reasons expressed for wanting access to content were often very personal in nature. For instance, one woman who intermittently attends found exercises that could improve her back pain and learned to look them up on YouTube videos. As she doesn’t own a computer, she used the sessions to write down notes on paper that she then could carry up back up to her unit. Even without owning a computer, motivated by her own discomfort and desire for information on her pain management, she nevertheless found a way to make our sessions and even the most intermittent of access work to her advantage.

Information management in the context of intermittent access became key. Because they lacked ownership of a device, participants tended to forgo an interest in learning that would require sustained use or daily management (such as email) or use that demanded privacy (such as Skype). As such, the workshops became focused on acquiring information and viewing online materials that would not conflict with these concerns. As they perceptively pointed out to us “why would I get an email address, if I can only look up my emails once a month?” This situation of lack of sustained access, and temporal breaks between sessions, also indicates the ability of residents to find resilient and creative workarounds. Some began to carefully think about topics they wanted to look up and learn in the intervals between workshops. Others began conversations amongst themselves in the preceding weeks in preparation for the workshop. Many, in fact, now come with a list (written or otherwise) of things they specifically want to do or ask during sessions.

For example, two participants are working together to make lists of old buildings in the Montreal downtown area that have been important places in their lives, such as hospitals, schools, churches, parks and restaurants. They began using the monthly sessions as dedicated time to work on what they termed as “their project” of searching through city archives to find information and photos. During the workshop, they used these Internet results as prompts to tell stories about their childhood and how their lives in Montreal have overlapped indicating the juncture of finding meaningful content with “the social aspects of learning” taking place in “supportive” and non-censorious environments, which as Clement and Shade argue “are often overlooked” [2, p. 12].

4 Conclusion

From the momentary ephemerality of the WIFI welcome party, to the door-to-door survey through our sustained and on-going encounters with the participants in the InterACTion project, it is evident: first that when dealing with human computer interaction, it is vital to consider the question of place and its important as a mediating variable that influences digital learning of those who are older. Second, we can see how uneven access to wealth has its tributary effect differential experiences with ICTs. It creates precarious and often difficult living situations for our InterACTion participants; it entails a host of interconnected material and other barriers to the uses and learning of technologies that require troubleshooting and innovative workarounds. Industry documents are often geared towards exploiting the untapped seniors market and promote a language of innovation that makes it seem that all have unfettered access to perpetual connectivity in a networked society. This focus does not take into account the large percentage of elders in ‘developed worlds,’ such as those living in Montreal HLMs, who are not living in the top 20 percentile. In this context, the realities of poorer seniors are neglected experiences from the purview of a pure marketing mentality towards ICTs, which is typically interested in the lives of affluent seniors who have ‘successfully aged.’

By reflecting on the lessons presented above, we want to inform the development of future learning activities and indeed inclusive design approaches. But mainly, we intend to emphasize that learning to use technologies always occurs within the specificity of context—in the dynamics of a place and at a particular time. In this consideration of place, the age and generation of the users are vitally important to consider. However, they are not the only consideration. Any thinking about digital technologies and elders cannot be done apart of an understanding of variegated ageing experiences and the realities of precarious ageing, where socio-economic factors of exclusion such as class, education, and language (and also culture, race, ethnicity and gender) are compounded when it comes to interacting with technologies.

As we have seen, the Access Rainbow Model usefully pinpoints the multi-faceted and complex ways that access to digital technologies and learning are connected in specific places. In their discussion of access, Clement and Shade make use of the rainbow as a visual metaphor for the plural barriers to access, yet the assemblage of layers cannot aptly reflect the entangled nature of the ways access is lived by the elder participants of the InterACTion workshop. Barriers to access are plural, certainly, but they merge, overlap and crisscross persistently: they are closer, perhaps, to a ball of string or a bowl of rainbow-colored spaghetti than a neat rainbow.

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