DIGITAL FOOTPRINTS: EXPLORING DIGITAL INCLUSION IN ADULTS WITH MILD TO MODERATE INTELLECTUAL DISABILITIES

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ABSTRACT

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This study aims to explore digital inclusion for adults with intellectual disabilities. The research question is: How do adults with intellectual disabilities currently use digital media and the digital world? The study consists of eleven participants who range between ages 18-65 who have either a mild or moderate intellectual disability. The participants participated in an unique university course specially designed to match adults with an intellectual disability with undergraduate students that focused on learning and creating digital art. A qualitative methodology was used with a phenomenological approach to gather data in two ways: 1. one-to-one interviews and 2. field notes of the participant's interactions with the digital technology. The data was analysed through thematic analysis to discover patterns and themes to answer the research question. The results were six emergent themes: effects of digital literacy deficits, online social interactions, positive and novel experiences, knowledge equals autonomy, digital visitor, and caregiver's role. An unforeseen result was documented that creating digital art within a classroom environment with research participants (adults with intellectual disabilities) appeared to increase their self-esteem and social interactions with others. This study is a stepping-stone to creating a baseline on this population's uses and barriers of digital technology and the digital world. The results demonstrate how the lack of digital inclusion contributes to unnecessary barriers for adults with intellectual disabilities in accessing online art therapy and digital art therapy.

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Chapter 1. Introduction

This paper aims to demonstrate the need for digital inclusion for adults with intellectual disabilities to ensure they have equal opportunity to access and benefit from digital and online art therapy. Many groups of people are currently being left behind as society increases the integration of digital technology and the digital world as a vital aspect of daily functioning (Chadwick, Quinn, & Fullwood, 2016). Adults with intellectual disabilities are already a marginalized group that is currently experiencing another level of exclusion by not having the same equity in opportunity to digital technology and the digital world. Previous research has investigated this exclusionary phenomenon before, however the barriers and challenges experienced by specific subgroups are underrepresented through the homogenizing of the disability community in their experiences (Chadwick, Wesson, & Fullwood, 2013). To combat this problematic underrepresentation, researchers have expressed the necessity to complete more studies that record the lived experiences of specific subgroups within the disability community to provide more accuracy in the research findings (Chadwick & Fullwood, 2018).

This research study asks the question: How do adults with intellectual disabilities currently use digital media and the digital world? The study aims to explore this question by asking adults with intellectual disabilities about their personal experiences to find out how this community is currently utilizing digital media and/or what barriers they are facing to get an accurate depiction of the lived reality. Only after accurate baselines are established can future research explore what needs to be done to support more inclusive opportunities for this population. The participants in the research study participated in a digital art class. The goal of the class was for the participants to be exposed to the modality of digital art and cultivate a new way for self-expression. The study also aims to demonstrate the need to close the gap of digital exclusion for this population as more technological advances impact art therapy (digital art therapy) and more therapy services move online (online art therapy).

This paper will begin with a literature review to outline the current research in the disability and art therapy field and situate why this study is urgently needed. The methodology section will then outline the research question, the participants, and the purpose and process of using phenomenological approach within qualitative research of this study. Ethical considerations will be stated along with reflexivity of the researcher to provide context of the validity and reliability of the data collection. The results section will be organized in the themes that emerged during the thematic analysis of the data collection. Describing the themes and how they agree and/or disagree with previous research, along with outlining the limitations of the study will then be discussed. The paper will conclude with how the results potentially affect this community's potential opportunity to utilize digital art therapy and online art therapy.

Chapter 2. Literature Review

This literature review will explore where adults with intellectual disabilities are currently situated within the digital world. This investigation will be done by examining the phenomenon of the digital divide by addressing the barriers of access, digital literacy, and the benefits of digital inclusion for this population. This investigation will flow into the intersection of the current movement towards the use of digital technology and internet-based therapy within the art therapy field. Limited studies in this area and recommendations for future research will be noted. The search was conducted through an online database. Only academic articles were used and gathered through the parameters of keywords; Adults with Intellectual Disabilities, Adults with Developmental Disabilities, Adults with Learning Disabilities, Digital Inclusion, Internet Therapy, Telehealth, Digital Art Therapy, Internet Art Therapy.

Adults with an intellectual disability

Intellectual Disability (ID) is defined as "A disorder with onset during the developmental period that includes both intellectual and adaptive functioning deficits in conceptual, social and practical domains" (American Psychiatric Association, 2013, p. 33). Simplican, Leader, Kosciulek, and Leahy (2015) explain that after an individual receives a diagnosis of ID, these individuals are more likely to experience stigma, discrimination, marginalization and exclusion from their neurotypical peers and within society. It is not surprising that these negative social experiences lead to smaller personal and social networks in adults with ID than their non-disabled peers (Sallafranque-St-Lous & Norman, 2017). Sheehan and Hassiotis (2017) bring to attention that this population experiences high rates of mental health problems due to a mixture of biological, social and environmental factors.

The digital divide

Chadwick, Quinn, and Fullwood (2016) outline that today, access to and participating in online platforms is an integral part of an individual's daily life. Some authors state that information and communication technologies (ICT) are now a 'survival tool' to navigate today's world (Chadwick, Wesson, & Fullwood, 2013). Adults with ID, Chadwick, Quinn, and Fullwood

(2016) note, are currently being excluded from digital society: a phenomenon called 'the digital divide.' The digital divide is defined by Castells (2002) as, "The divide created between those individuals, firms, institutions, regions, and societies that have the material and cultural conditions to operate in the digital world, and those who cannot or cannot adapt to the speed of change" (p. 270). The digital divide is a social justice issue that further marginalizes and oppresses adults with ID from accessing information and economic advantages (Chadwick, Wesson, & Fullwood, 2013). Park and Burford (2013) express even if this population has access to digital technology, a secondary level of divide is caused due to a lack of digital literacy to experience the full benefits of the technology and digital environment. The disadvantages of the divide range from restricted access to educational info, missed job opportunities, potential social isolation (Cihak, Wright, Smith, McMahon, & Kraiss, 2015) and inequality to an increase in government resources toward digital only services (Watling, 2011). Sallafranque-St-Lous and Norman (2017) express the first steps to combat this current divide is to support adults with ID in access and training of technology in navigating and utilizing the device and the opportunity of having a device to access the Internet to ultimately engage in the digital world.

Barriers. Adults with ID face a multitude of barriers to be able to successfully participate in the digital world. The first barrier is access to a digital device; most adults with ID are on a fixed income and due to financial and/or economic barriers cannot afford their own device (Chadwick, Quinn, & Fullwood, 2016). Watling (2011) points out that even though an individual may find funding from the government or a private donor, to get a device the reality is that the cost of owning the device is unaffordable (i.e. internet, specialized programs, any additional hardware). The second level of barriers include lack of digital literacy skills to fully use the device and navigate the internet (Chadwick & Fullwood, 2018). Under digital literacy skills, Watling (2011) notes that training is needed for areas including internet safety, understanding, managing and protecting against viruses and scams, how to safely shop online, and cyber etiquette (Chadwick & Fullwood, 2018). The next set of barriers is the lack of universal design of websites (Chadwick, Quinn, & Fullwood, 2016). This does not allow assistive technology to be useful in helping individuals who may have impairments in reading to navigate and/or understand the content of the website effectively (Watling, 2011). One of the last barriers is gatekeeping. Chadwick, Quinn, & Fullwood (2016) stress that the caregivers of adults with ID may not allow or provide the proper resources for these individuals to access the digital world.

All in all, the removal of barriers for adults with ID need to be implemented for them to benefit and not repeat the cycle of societal inequality in another environment (Chadwick, Wesson, & Fullwood, 2013).

Digital literacy. Digital literacy is the skill of being able to read, understand components like words, sounds, and visual images (Cihak, Wright, Smith, McMahon, & Kraiss, 2015) and have the ability to communicate back within the digital context (Park & Burford, 2013). Hartley, McWilliam, Burgess, and Banks (2008) indicate the difference between traditional media literacy and digital media literacy is the participatory component of the digital world. This skill of being digitally literate is essential, Cihak et al. (2015) asserts, to function, participate, and be included in today's society. Having the skill to understand and create content gives the opportunity for any individual to access information, self-expression, the ability to increase personal social networks (Cihak et al., 2015). Although the opportunities seem endless in the digital world, having access is not enough. Cihak et al. (2015) state that access does not equal skill development. Individuals who are not taught digital literacy are excluded from the full benefits of technology and the digital world. This phenomenon is described as digital exclusion. Park (2012) observes that individuals who lack this digital literacy skillset are put at a disadvantage in society as they're unable to engage in the interactivity of online information and social relationships.

Digital inclusion. Presently, the digital world is one more place that many adults with ID's are being excluded (Chadwick, Quinn, & Fullwood, 2016). Digital inclusion, Owuor et al. (2018) explains, is the idea of making sure all individuals in society have access and opportunity to benefit from the current technological advances. The digital world has the capacity to enable access, connection, and community involvement. By not including adults with ID, society runs the risk of repeating exclusion (past institutional isolation) in this marginalized community (Owuor et al., 2018). Owuor et al. (2018) state that our society must come together to generate more opportunities for access to promote inclusion and not enable spaces (digital spaces) to be segregated.

Online health services. The healthcare system, like many social systems has been moving more and more of their services online. Collie and Cubranic (1999) emphasizes that 'Telehealth' aims to meet more needs of underserved populations (i.e. people with disabilities) by using technology to increase health services. Sheehan and Hassiotis (2017) explain that the national health service of England, is currently using the digital world and technology to provide online/mobile medical interventions, video check-ups and consults (increasing access to specialists and greater frequency), access to more medical information (including online support groups), and online therapies. Online mental health services have increased many advantages such as overcoming problems of distance, lowering stigma enabling an increase in people using these services, and allowing more frequency and flexibility for clients (Chester & Glass, 2006). However, individuals with ID are not able to fully benefit from these new digital health services due to a multitude of barriers (Sheehan & Hassiotis, 2017).

Digital media in art therapy. Digital media is being used to explore “one’s creativity, self-expression, communication, social actions and identity formation” (Choe, 2014, p. 153). Carleton (2014) asserts that since this digital exploration has influenced the younger generations’ way of communicating and being in the world, art therapy must respond to meet these needs of expression. Art therapists who are not open to incorporating digital culture within their practice dismiss and disregard the digital generations’ identity formation (Carleton, 2014). In art therapy, Avramova-Todorova and Todorov (2019) identify that therapeutic digital media can range from, “video, animation, digital drawing, collage, photography, and augmented reality” (p. 44). Incorporating digital technology as a medium in art therapy has a range of benefits. Tablets offer portability and engagement of artists at all levels (Choe, 2014). As well, offering options for ‘mess free’ art making and can adapt to tactile sensitivities (Darewych, Carlton, & Farrugie, 2015). The medium of digital media offers another form of expression to communicate and engage in the therapeutic process (Hallas & Cleaves, 2016). Alders, Beck, Allen, and Mosinski (2011) advocate for the use of digital media in art therapy as it allows everyone, no matter their cognitive level, to participate in creative expression.

Online art therapy. As our lives become more and more digitally connected so are the opportunities increasing for online therapy. Mattson (2015) illustrates that as online services increase and technology advances, art therapy apps are being created that provide tools such as accessibility to a therapist, physiological sensors, and the ability to track moods throughout the day. The rise in this direction can be attributed to creating more access to mental health care, lowering the cost and increasing opportunities for portability (Mattson, 2015). A study conducted by Collie and Cubranic (1999) tested a pilot online art therapy group with two groups of five individuals. The researchers discovered that art therapy could be expanded online to meet the geographical needs of people living in rural areas (Collie & Cubranic, 1999). Collie, Prins Hankinson, Norton, Dunlop, Mooney, Miller and Giese-Davis (2016) conducted another study facilitating an online art therapy group for young adults with cancer. The study found that this was an effective way of bringing together a specific group of individuals to foster "comfort, connection and expression" (Collie et al., 2016, p. 7). Lastly, a study was conducted using the creative art therapies to reach rural veterans (Levy, Spooner, Lee, Sonke, Myers, & Snow, 2018). Levy et al. (2018) revealed that the participants in the study created their own art spaces in their homes that inevitably transferred into sharing their therapeutic process and progress with their families. As well, the researchers noted an increase in "communication and rapport" between therapist and client due to the client having to articulate their art-making process and finished product (Levy et al., 2018).

Limited studies and future research. Limited research has been done on how adults with intellectual disabilities currently use and interact with digital technology and the digital world. Chadwick, Wesson, and Fullwood (2013) point out that many past studies have not distinguished between the participants' specific disability (physical, intellectual, etc.). By not specifying the specific disability, past research homogenizes this vulnerable groups' barriers to access of the internet and digital technology. Different disabilities will most likely experience different and distinctive barriers than other disabilities. This becomes problematic because the past research may not be representative of a specific community under the disability umbrella (i.e. adults with intellectual disabilities) as the studies are lacking heterogenous experiences in their findings (Chadwick, Quinn, & Fullwood, 2016). Focusing on adults with ID, Chadwick, Quinn, and Fullwood (2016) argue that this group is often viewed as a more vulnerable population and may result in even less access to the digital world than research has previously identified. Digital footprints (digital activities and contributions that are traceable) of adults with intellectual disabilities are still yet to be studied so existing research cannot fully pinpoint the full barriers or the full benefits of digital technology and the digital world for this population. Several researchers call attention to the need to involve adults with ID and record their lived experiences (Chadwick & Fullwood, 2018; Chadwick, Wesson, & Fullwood, 2013). Werner and Shpigelman (2019) identify the need of future research for this community is to uncover the specific barriers stopping access to the internet, uncovering the precise factors causing the digital divide and understanding the support needed in specific digital devices.

Conclusion

As our society moves towards the direction of full digital integration, more studies need to be done to ensure inclusion for all populations. Collecting the digital footprints of adults with ID is an important part of the necessary groundwork in order to identify and demonstrate the need to move towards creating and implementing future interventions to close the digital divide for this community. Additionally, as the art therapy field advances in introducing digital technology as new therapeutic media and offering more opportunities for online therapy, the research in digital inclusion is crucial as it is a pivotal intersectionality. If the true aim of digital technology and the digital world is equity, investigation of the gaps is paramount.

Chapter 3. Methodology

The following section presents the research question, participant selection, the methods used in this research study and the ethical considerations. It is important to note why the specific methods were chosen and how they were implemented. As the research relied on the participation of a vulnerable population, the methodology will be as transparent as possible noting all the ethical considerations to safeguard this population.

Research Question

How do adults with intellectual disabilities currently use digital media and the digital world?

Participant Selection

The participants for this study were from a convenience sample who were associated with the Centre for the Arts in Human Development. The Centre for the Arts in Human Development is a research center that provides creative art therapies for adults with intellectual and developmental disabilities (Concordia.ca, 2020). Fifteen individuals were offered a free eight month learning opportunity to learn more about and create digital art. All participants who participated in this free programing were over the age of 18 and had a mild to moderate intellectual disability.

Recruitment. Recruitment started with an advertisement letter about the free opportunity in learning more about digital media and digital art and also the potential to participate in a research study (Appendix B). After fifteen individuals signed up to participate in the digital art course, the principal investigator met with the participants to provide more information about the opportunity to participate in the research study (Appendix C). The participants were given a week to make a decision; interested individuals met again with the principal investigator and were provided with informed consent forms (Appendix D) which were read to them. Space for questions was offered. The participants were given another week to review the consent forms with their caregivers before signing.

Group size. At the start of the study, twelve adults consented to participate. Halfway through the study, one individual verbally withdrew from the study before his interview. In total, the data collection collected was from eleven adults with mild to moderate intellectual disabilities. Hesse-Biber (2017) states that the process of understanding the research question from a qualitative approach requires a small sample of individuals to enable the data collection to be in depth and meaningful.

Informed consent. The participants were read the consent form (Appendix D), offered space for any questions and were given time to review the form with their caregivers. The principal investigator checked in with the participants again before their interviews, asking how they were feeling and if they still consented to the interview. One individual, before their interview did withdraw their consent after being verbally asked. This individual continued their participation as usual in the free course.

Qualitative Research

A qualitative research approach was used to answer the research question. Creswell (2013) explains that qualitative approach to research aims to understand how an individual or a group of individuals experience a problem. This research begins with curiosity from the researcher about a problem or phenomenon experienced by a specific individual or group of individuals. To examine this problem or phenomenon, qualitative research seeks to collect data from the individuals who experience it first-hand (Creswell, 2013). Creswell (2013) states that this process of collecting data from the specific individual or groups of individuals is vital in attempting to capture the authentic voices of those who experience it and understanding the complexity of the issue.

Qualitative research has eight components. Creswell (2013) identifies the first component as the natural setting of where the research is conducted. To answer a qualitative research question, the researcher should collect the data from the participants in the natural setting where they would experience the problem. The next component is including the researcher as an instrument of study (Creswell, 2013). The researcher can never be fully neutral in the research process as they’re the ones that collect and interpret the data through their lens. The researcher then becomes in some ways apart of the research data. Creswell (2013) indicates that multiple methods is the third component of qualitative research. This is demonstrated through multiple ways of collecting, reviewing, organizing and analyzing the data. Inductive and deductive logic is implemented as the next component (Creswell, 2013). As the researcher reviews the data, Creswell (2013) explains that they are continuously zooming in and out to notice patterns, placing the data into categories and allowing themes to surface. The fifth component, Creswell (2013) notes, is the meaning that the participants attribute to the problem being researched. Qualitative research includes and welcomes multiple views (diverse or contradictory) of the participants' lived experiences. The next component is the emergent design in qualitative research (Creswell, 2013). The research remains flexible to meet the unforeseen needs of the participants under study. Reflexivity, Creswell (2013) points out, is the seventh component of this research process. The researchers must identify their background and how that may inform the study either in interpretation of the data or why they are interested in conducting the study. The last component is the holistic account of understanding and drawing conclusions to answer the research question (Creswell, 2013). Qualitative research understands that a human problem or phenomenon is complex and that multiple factors are always at play.

A qualitative approach is the best suited to answer the research question under study. To begin to understand the complexity of how adults with intellectual disabilities use digital media and the digital world, the data must come from first-hand experiences of this specific group. The data must also be collected where the experience happens. By interviewing and documenting the experiences of this specific group's interactions with technology and the digital world, qualitative research enables a more holistic understanding of the research question in order to answer it. Lastly, the reflexivity of the researcher, the emergent design of qualitative research and how the data is analyzed allows more factors and possibilities to arise in identifying the reality of this phenomenon and guiding future research.

Phenomenology. Within the framework of qualitative research, the research study used a phenomenological approach to answer the research question. Creswell (2013) explains that phenomenological studies attempt to take a group of individuals' lived experiences who have encountered the same concept or phenomenon and reveal the shared meaning of this phenomenon. The phenomenon under investigation in this study is the concept of digital inclusion. The individuals who may or may not have experienced this phenomenon are adults with mild to moderate intellectual disabilities. The researcher has chosen to use a phenomenological approach to understand how adults with mild to moderate intellectual disabilities currently use digital technology and the digital world and if/how they experience inclusion in this digital space.

Data Collection. Data collection was gathered using two methods. The first method of collection was through structured interviews. The structured interview questions where created by the researcher after reviewing the academic literature on the topic. This aimed to capture the individuals' lived experiences of the research question prior to their learning experience with the eight month course. The interviews were implemented within the first four weeks of the course starting to gather the individual's prior knowledge of digital technology. The interviews ranged from five minutes to twenty minutes depending on the individual. The second way the data was collected was through direct observation in the form of field notes. Hesse-Biber (2017) indicates that participant observation in the setting where the experience occurs is important to understanding the lived experience of the participants. The researcher was present for each digital art class for the first four months of the study and recorded the comments verbally shared by the participants during the class. The class was offered seven times within the first four months. The structure of each class consisted of ninety minutes which focused on one digital art assignment. The class was led by one undergrad student from Concordia University who was enrolled in a digital arts and design class, and there were four assistants to provide help to the participants. Field notes also consisted of any questions asked by the participants to the undergrad students teaching the class.

Data Analysis. Hesse-Biber (2017) states there are four steps in analyzing the data collection in qualitative research. The first step is data preparation (Hesse-Biber, 2017). The structured interview responses and field notes were typed into Microsoft word to place all the raw data in one spot. The next step is to explore the data. Hesse-Biber (2017) explains that after all the raw data is compiled in one place, the researcher now enters the review phase. In qualitative researcher analysis, the researcher begins to write memos as they review the textual data (Hesse-Biber, 2017). The memos place focus on what stands out as important and what data is connected. The memos in the first phase consisted of keywords: safety, knowledge, consume, assistance, connecting across distance, social interaction, gatekeeper, new experience, new social connections, challenge, autonomy, negative social interaction, knowledge transfer, generation of device content, accessibility/accommodation, barrier, deception, digital literacy, access, risk of consumption, possible generation of content using the internet, effect, engagement, enjoyment, generation.

The third step, Hesse-Biber (2017) notes is the specification and reduction of the data. This is the next phase of memo writing that is more analytical in attempting to connect the data and theory together through coding (Hesse-Biber, 2017). Hesse-Biber (2017) explains and defines coding as the researcher ascribing meaning to sections of textual data. Within coding there are three different types of codes; descriptive codes, categorical codes and analytical codes (Hesse-Biber, 2017). Descriptive codes, Hesse-Biber (2017) informs, is when the coder places a label on chunks of the raw data collected. This starts to organize the raw data. The researcher now moves into the creation of categorical codes. Categorical codes move the researcher from describing the raw data to creating categories that begin to emerge (Hesse-Biber, 2017). The categorical codes created were: consumption, knowledge and autonomy, social interactions, positive experiences, caregiver's role. After the categorical codes are finished, the researcher moves into creating analytical codes. Hesse-Biber (2017) describe this stage of coding as attempting to allow themes to emerge that can provide rich meaning to the participants overall experiences. The themes found consisted of, digital visitor, online social interactions, effects of digital literacy deficits, positive and novel experiences, knowledge equals autonomy, caregiver's role. The fourth and last step of analysis is the interpretation the researcher makes from the meaning the coded data has generated (Hesse-Biber, 2017). Hesse-Biber (2017) cautions the researcher to ask themselves in this last step whose voices are heard, whose are not and how the power of the researcher has on the findings of the research. The conclusions that can be drawn from qualitative research methodology is an intricate explanation of the phenomenon and the researcher's interpretation of the lived experiences of the participants under study (Creswell, 2013). Qualitative research, Creswell (2013) explains, provides a more extensive exploration in understanding the realities in the lives of a specific population when academic theories are left out or insufficient.

Ethical Considerations

The main ethical considerations noted are informed consent, the structured interview, the social locators of the researcher, and how respect and safety will be navigated during the research process. Hesse-Biber (2017) states that informed consent when using human participants is crucial as it is a “basic human right” to be informed (p. 74). The purpose of informed consent is to make sure no harm is done (mentally and/or physically) as the participants partake in the research (Hesse-Biber, 2017). This study approached informed consent in three ways mentioned above on page eight.

The next ethical consideration was the interview itself (Appendix D). The interview was generated with simple and direct questions to accommodate all levels of understanding. As well, a structured interview was implemented to reduce anxiety with a mixture of closed and open questions that gave opportunities to expand based on comfort level. The interview questions were generated, by the researcher, after reviewing the academic literature.

The third ethical consideration how the researcher will ensure the participants are safe and respected. The researcher will be following the Canadian Art Therapy Standards of Practice (Canadianarttherapy.org, 2019) to enable decisions to be made that are professional and ethical.

The last ethical consideration was the social locators of the researcher which will be further explored in the reflexivity of the researcher.

Reflexivity. When conducting qualitative research, the researcher influences the study at all levels (Berger, 2015). It is crucial to note the impact of the researcher, Berger (2015) states that the researcher may share intersecting social locators with the participants being researched. These shared social locators may enable blind spots in the research process and findings (Berger, 2015). On the other side of the continuum, Berger (2015) informs that the researcher may be so far removed from the participants that the researcher may lack sensitivity. This predicament in conducting qualitative research calls for reflexivity in the researcher. The researcher must evaluate and explore their “biases, beliefs and personal experiences” and how this may impact the research process and the research results (Berger, 2015, p. 220). The more reflexivity the researcher reflects upon and is transparent about, Berger (2015) concludes, the more credible the research findings are.

The researcher identifies as a member of the disability community although he does not share the direct commonality with the participants of having an intellectual disability. He has spent the last nine years advocating for individuals who experience disabilities in his work, volunteerism, and everyday life interactions. The researcher strongly holds the value of equity for all human beings in all interactions. This is one of the main reasons the researcher conducted this research, as he feels it’s important to increase inclusivity and access for this population in regards to digital technology and the digital world. Holding this belief may impact the researcher to focus more on the deficits to ensure advocacy and overlook other areas that may be important in the data collection. Knowing this, the researcher can reflect and ensure he captures the full essence of the participants' experience when analyzing the data collection.

Validity and reliability. Validity and reliability will be explained through the TACT framework (Daniel, 2019). Daniel (2019) explains that the TACT framework consists of four concepts that demonstrate the strength of qualitative research: trustworthiness, auditability, credibility, transferability.

The first concept is trustworthiness in the qualitative research (Daniel, 2019). Trustworthiness, Daniel (2019) states is utilizing a transparent process of organizing and analyzing the data collection in qualitative research. The research has been thoroughly explained how the data was collected, analysed and the presentation of the results. This is to ensure the readers can follow the researchers process of how he collected the data and transformed the raw data into the presented results.

Auditability is the second concept (Daniel, 2019). Daniel (2019) indicates that auditability is the researcher's process of reflecting and articulating the entire process at all stages of the research in terms of record keeping. In terms of this concept, the researcher is reflexive in his intentions for the research, the ways in which the data was collected, the context of the research and the researcher's limitations.

The next concept outlined is credibility (Daniel, 2019). Credibility, Daniel (2019) explains, is the validity of findings in how authentic and accurate they retell and represent the participants' lived experiences. In using qualitative research, the major task of the researcher will be sharing accurate accounts of the lived experiences of the marginalized community to the academic community. The researcher has consciously attempted to preserve the raw data collected by providing as much context to ensure its authenticity.

The last concept is transferability (Daniel, 2019). Daniel (2019) points out that the generated conclusions should be able to be generated again and again. This ensures reliability in the study. In this study, the conclusions drawn from the eleven participants will not be able to be generalized for the entire adult population who have an intellectual disability. This is due to when working from a phenomenological approach, the context, the place and time the data was collected is unique. These specific factors and conditions can't be reproduced as the factors and conditions are always changing the lived experiences of the participants under study. The results presented are a snapshot that are influenced by these participants' lived experience in this moment in time. Nevertheless, the conclusions generated will add to the academic literature to inform future study directions.

Chapter 4. Results

The results mentioned below are from eleven adults with mild to moderate intellectual disabilities and their personal experiences with digital technology and the digital world. These first-hand experiences were collected through interviews and field notes within the context of a digital arts and design classroom learning environment. The data has been analysed into six themes. The themes that emerged within the data collected consist of: (a) effects of digital literacy deficits; (b) online social interactions; (c) positive and novel experiences; (d) knowledge equals autonomy; (e) digital visitor; and (f) caregiver's role. The results have been presented in a visual chart created by the principal investigator (Appendix E). The hexagon size in the visual chart indicates the amount of times the theme emerged within the data set.

Themes

Effects of digital literacy deficits. This theme encapsulates the major learning curve digital literacy creates to those who do not possess this essential knowledge to navigate digital technology and the digital world. The lack of digital literacy skills for adults with mild to moderate intellectual disabilities appears to be multiple barriers, safety concerns, experiences of online deception and personal challenges. Digital technology barriers included simple navigation of the device itself and the internal applications. Participants voiced, "I don't understand the mouse, I've never used a mouse," "How do I erase my mistake off the computer?" and "How do I get the picture off the internet?" More advanced users who appear more digitally literate commented that barriers for them included literacy and memory difficulties. "The internet is challenging because I can't read or write," and "I have trouble remembering my passwords." The next difficulty was the limited knowledge of preventative safety on the internet. This included participants mentioning "getting scammed," encountering "viruses" and "losing all their information" on their digital devices. Although this was a concern for many individuals who had access to the internet, other individuals noted that due to safety concerns from caregivers, boundarie were enforced to reduce access to utilizing the device or internet to its full potential. One participant stated, "I have a cell phone so my mom and dad can track me and always know where I am." He further noted that although he has a cell phone, "I only use my cell phone for emergencies." Another participant complained extensively that although she had her own cell phone and iPad, she often felt frustrated because "there are too many limits." Deception appeared for one participant in the form of internet advertisements and an encounter with a Facebook impersonator. The participant noted, "I disliked the pop-up ads that try to trick me and one time there was a fake person using my photos pretending to be me." The reoccurring challenge mentioned when using the internet was how difficult it was to remember passwords. Three different individuals expressed how they either disliked passwords or could never seem to remember them which prevented these individuals from accessing their email accounts.

Online social interactions

Overall, the interviews provided rich data in the use of digital technology and the use of the digital world for cultivating social interactions. These social interactions were generally positive experiences, with previously known family and friends. The common 'pros' noted by participants for using digital devices or online services to socially communicate with others were (a) how easy it was; (b) the way you can connect with others; and (c) keeping in contact with people from far away.

Participants mentioned using their technology such as their cell phone to call people. Generally, though, most participants preferred to use the internet to access their email and social media for these social interactions. One participant expressed, "I use the internet to keep in contact with my friends because it's a lot easier." Many participants mentioned that the internet opened up increased access in communicating with others. Personal accounts from participants demonstrate this by noting that "Facebook allows you to call people," "I do Facetime my cousins who are far away," "I use the internet to keep in touch... with family that lives up North," "some friends don't have cell phones but they have Facebook," and "I use the telephone on the internet to talk." The usage of the internet appears to increase opportunities in the way these participants are able to interact across platforms and problem solve if someone is too far away, doesn't have a cell phone or use a variety of platforms to connect (email or social media).

Negative social interactions were noted by three of the eleven participants. They mentioned not liking the fact that other individuals had the ability to "put bad comments" on the internet, witnessing "gossiping about [the individual] on Facebook," and "There are a lot of emotions from other people on Facebook." Although these negative social interactions were mentioned, only one appeared to have encountered cyberbullying. When the participant mentioned their experience of cyberbullying, the researcher checked in with the participant to see if they were still comfortable sharing. The researcher again, checked in with this same participant at the end of the interview to ensure they were okay.

As most participants interview said they only talk to family and friends they knew in real life, a few commented on their experience making a new friend online. The experiences of new interactions range from interacting with many new people using Facebook to the new experience of how one makes a friend online is different than in person. Two participants note their navigation of this new experience by saying it's, "a new challenge than making a friend in person but it's a new experience I'm having" and "you can talk to famous singers and listen to their songs while messaging them."

Positive and novel experiences.

This theme of positive and novel experiences emerged in the researcher's field notes from the participants' engagement and utilization with the digital technology as they created digital artwork. Throughout the seven classes, the room was filled with comments of enjoyment such as, "amazing," "so cool," and "wow!" As each class came to an end, repeated comments arose expressing, "What's next?" The experience of learning how and creating digital artwork evoked many participants to voice that, "[They] have never done this before," "This is my first time creating digital art," "This is amazing and this computer does everything!" This class offered a space for this marginalized group to come together to learn and express themselves individually and collectively. The participants individually attained increased competency in their digital technology/literacy skills while collectively sharing their artwork in fostering increased social connections. To support this claim, common comments throughout the duration of the class featured, "I feel happy because I made something on the computer," "I like to making a book online, I think and it can happen," "I can't believe I did that," and "Look what I did." Overall, the experiences witnessed by the researcher in class was incredibly positive. All participants voiced their enjoyment throughout the classes, were seen smiling, connecting with others and had difficulty leaving when the class was over. It took encouragement from the undergrad students for the participants to leave at the end of class. As the participants left, they expressed interest in the next week, hugged the undergrad students in gratitude and were curious at what skills they would learn in the future classes.

Knowledge equals autonomy. In the individual interviews it was noticed that many of the participants that had more knowledge of digital technology and the digital world appeared to have more autonomy in their day to day lives. This perceived autonomy is drawn from examples of the particpants with more knowledge in this specific area travelled independently and/or had a job. Some participants' voiced they use digital technology and the digital world to, "ask Siri questions," "check the bus schedule," "use my cell phone to use google maps for traveling," and "I like the internet because Google has a microphone to help people like me who can't read or write because of dyslexia." The participants' increased knowledge demonstrates the attainment of accessing and customizing accessibility and accommodations in digital technology and the digital world. This appears to enhance the individuals' needs that lead to greater opportunities of being more autonomous in their life without relying primarily on the assistance of their caregivers.

Lastly, participants mentioned that the access to learning was important to expand their personal interests. Comments arose in the interviews such as, "I use the internet to look up information about history and wars," "how to make lemon cake," "church sites for sermons," and "read Wikipedia on my favorite artists." This utilization of the internet to provide increased access to learning may be beneficial in bypassing other personal or collective barriers of this community such as traveling to public libraries or waiting for the assistance of caregivers to attain this same knowledge.

Digital visitor. In the nine interviews of participants who had access to technology and the internet there was no mention of any participants specifically generating personal content for others to interact with. Passive consumption emerged in how the participants describe their activities within the digital world, exhibited by the use of passive verbs like "looking," "watching," "checking," listening" and "playing." This is further emphasized by the focus on the consumption of other's content. "I use Facebook to see my friends," "watch YouTube," and "look at pictures on the internet." It is interesting to note there was no mention of sharing content online, being critical of online content, or creating online content. This idea of visiting the digital world and not leaving a trace could be due to a multitude of reasons including safety, lack of digital literacy skills, gatekeeping, and/or challenges.

Caregiver's role. The theme of the caregiver's role in the participants life appears to influence how the participants have experienced technology, the level and amount of access available, and the knowledge of digital technology and digital spaces. Two dichotomous subthemes emerged in the interviews. Either the participant relied on the caregiver for assistance in navigating digital technology and/or the digital world or the caregiver was a gatekeeper who restricted access completely. In the realm of assistance, participants noted, "My dad helps me on the computer and fixes it," "My mom helps me navigate the website and helps me check my email," and "I have to ask my family to help me." These subthemes of reoccurring comments describe the reliance on caregivers to utilize technology and digital spaces. This may be happening due to the caregiver's lack of knowledge transfer to the participant in being autonomous or recreating similar dynamics of dependency of their established relationship to this experience.

The other subtheme is the caregiver being a gatekeeper that has only been noted in the interviews as restrictive. Two participants noted that, " I don't have a computer, cell phone or iPad but my careworker does…." and "I see my caretaker using those things." In other cases, two participants mentioned, "My cell phone has so many limits on it," or "I only use my cell phone for emergencies." This gatekeeping by the caregiver could be in place for many reasons but it limits the participants access to rich experiences and opportunities digital technology and the digital world can provide. The caregiver's role in experiences, access, and knowledge seems paramount to the participants' lives in relation to exploring and gaining the benefits of digital technology and the digital world.

Chapter 5. Discussion

The discussion section will review the research question and the results for how each theme either connects, challenges, or contradicts earlier research findings and/or previous theories. The research question that the researcher aimed to answer was: How do adults with intellectual disabilities currently use digital media and the digital world? The researcher discovered six themes that emerged with the data set. The themes were (a) effects of digital literacy deficits; (b) online social interactions; (c) positive and novel experiences; (d) knowledge equals autonomy; (e) digital visitor, and (f) caregiver's role.

Themes

Effects of digital literacy deficits. Out of the eleven participants interviewed, nine had some type of access to either a computer, cell phone, or iPad. These same nine individuals also had access to the internet on these devices. Chadwick, Wesson, and Fullwood (2013) stated that adults with ID are further marginalized by the digital divide. In this sample, it appears that only two individuals out of eleven are currently experiencing the first level of the digital divide because they do not have access to digital technology and the internet. Park and Burford (2013) further express that even if adults with ID do possess access to digital technology, this population would most likely face the secondary level of the digital divide due to a lack digital literacy skills. Park and Burford's (2013) theory was exemplified in the results from this research as there were sixty-two specific indications within the interviews and field notes about the participants either having a lack of digital literacy skills, safety issues, experiences of online deception, and personal challenges in technological navigation.

The researcher directly witnessed multiple individuals experiencing difficulty operating the digital technology devices within the classroom. Participants voiced, "I don't understand the mouse, I've never used a mouse," "How do I erase my mistake off the computer?" These difficulties prevent the participants from not only effectively operating a digital device but the inability to independently get online and access the full benefits of the internet. This second level barrier, Chadwick & Fullwood (2018) note, restricts the user from fully using the device and the knowledge to use the internet. This is problematic because Chadwick, Quinn, & Fullwood (2016) hold the position that the ability to participate online is an important part of an individual's daily life. The research study results appear to infer that these participants' ability to access the internet may not be reflected within the general population and as a result are missing opportunities and are limited in their independence.

In the interviews, the participants that had digital literacy skills to navigate the device and access the internet, experienced concerns for their safety. Participants noted "getting scammed," encountering "viruses" and "losing all their information" on their digital devices. This aligns with Watling's (2011) concerns about how crucial internet training is for this population to prevent virus' and becoming the victims of scams. This concern was further experienced by one participant as he expressed his negative experience with, "pop up ads that tried to trick [him]" and a fake profile on a social media site using his personal photos "pretending to be [him]." This community has been and is already labelled as a vulnerable population and Watling's (2011) concerns combined with the results of these first hand experiences clearly indicates a need for digital literacy training to ensure online safety.

All in all, the overarching theme of the effects of digital literacy deficits demonstrates the limited ability of the participant's current experience of the digital world and their digital device(s). This lack of digital literacy, reiterates the statement made by Cihak et al. (2015) that an individual has to be digitally literate to, on the most basic level, understand and create content on the internet. As further themes are discussed, the results provide a lack of evidence in any participant creating content before this class to share on the internet.

Online social interactions. Adults with ID are more likely to experience stigma, discrimination, marginalization and exclusion (Simplican, Leader, Kosciulek & Leahy, 2015) and these experiences often lead to small social circles (Sallafranque-St-Lous & Norman, 2017). The results display that two individuals didn't have access to online social interactions and nine individuals did have the potential opportunity to online social interactions. Out of those nine participants, only two individuals talked about using the internet to expand their social circle of people that weren't already friends or family members. However, the nine participants who did use the internet to stay connected with friends and family noted the experience being mostly positive, and had more social interactions because of the digital technology and the digital world.

The nine participants noted how easy it was to communicate with others using different social media platforms and communication tools (voice-to-text and video chat). This ability to connect with friends and family appeared to strengthen their relationships. As well, the ways an individual can communicate may meet the diverse needs of this population. This was brought up in the interview when a participant stated, "Some friends don't have a cell phone but they have Facebook." This bypasses some forms of the digital divide by problem solving when certain individuals don't have access to the same technology that other individuals have. This is further explored in another direction as participants noted the opportunity to communicate with friends and family who lived great distances away and the increased frequency of social interactions with friends and family who were in close proximity. These findings of increased social interactions due to digital technology and the digital world may begin to be a preventative measure towards the likelihood of further social isolation and its negative effects on wellbeing. Sheehan and Hassiotis (2017) have brought awareness to this populations high rates of mental health problems. The increase of access to tools that help create and maintain strong social supports with the availability that digital technology and the digital world can offer seems one way of lowering rates of mental health problems.

As with any positive experiences there will be negative experiences. Three of the nine participants noted negative experiences online. This once again aligns with, Simplican, Leader, Kosciulek and Leahy's (2015) statement about the increased likelihood of experiences of stigma, discrimination, marginalization and exclusion. Digital spaces operate like public spaces and individuals of any background will encounter some sort of negative social experience(s). The research participants expressed seeing "bad comments," "witnessing gossiping about [themselves] online," and the overwhelming "emotions that were often [displayed from others] on Facebook." To effectively deal with these negative experiences, the need for digital literacy training, especially online safety, is needed. Knowing about cyberbullying, how to report it, and how to seek support is crucial to use these digital spaces safely and lower negative experiences. This reflects existing efforts to raise awareness about bullying and safety in public spaces like schools.

However most of the participants expressed that digital technology and the digital world have strengthened their relationships. It would appear these increased social interactions positively influence these individuals' lives even with limited digital literacy. What would these positive aspects look like if these same individuals were able to increase their digital literacy knowledge? Would more individuals expand their social circles, join/create online support groups or raise awareness to society about their personal experiences of marginalization? Cihak et al. (2015) propose that the more digitally literate the individual is, the more likely the individual will have the ability to use the internet as a place of self-expression and increase social networks. As we further explore the themes that emerged, the importance of self-expression is needed for this population.

Positive and novel experiences. Throughout the seven week digital art class, the researcher observed the participants having a profound experience. Witnessing specific experiences of participants learning new tools to create digital art allowed the theme of positive and novel experiences to appear ascend in the researcher's fieldnotes that did not arise in the interviews.. The experience cultivated a new means of self-expression using digital art. In the academic literature, Alders, Beck, Allen, and Mosinski (2011) emphasize that it is possible for digital media to be accessible to any individual, no matter their needs, to facilitate creative expression. The modality of digital media has the factor of being accessible to everyone through its wide range of adaptations and approaches.

The participants in the study all shared the commonality of having an intellectual disability but many of them also have a diverse set of comorbidities. These comorbidities included physical limitations, sensory under/over stimulation issues, dyslexia or the inability to read, write, or talk. Even with these barriers, all participants were able to have a positive experience learning to use the computer and create digital art. The class was often filled with engaging comments such as, “amazing,” “so cool,” and “wow!”. As the class came to its end each session, the participants always asked, “what they would be learning the next week?” and expressed their excitement to come back. The participants who did not have access or much exposure to technology made sure to express this novel experience to others. These participants shared with everyone in the vicinity their excitement by saying, “[they] have never done this before,” “this is my first time creating digital art,” “this is amazing and this computer does everything!”

It is important to note that one thing the researcher did not foresee from the participants was a sense of each individual’s self esteem improving. This perceived improvement seemed to lead into the participants initiating more social connections with others in the classroom. Sallafranque-St-Lous and Norman (2017) advocate that access and digital literacy training is the first way to combat the digital divide for adults with ID. The outcome of weekly exposure to digital technology and skill acquisition clearly demonstrated the benefits of why increased access to digital technology and the digital world, and digital literacy training is so essential for this community. At the end of each class, the comments ranged from participants of “I feel happy because I made something on the computer,” “I like making a book online, I think and it can happen,” “I can’t believe I did that.” This rise of self-esteem led to the participants wanting to engage with other participants and other individuals in the classroom environment. They were proud of their creation of digital artwork each week and sought out more social interactions to show off what they were able to produce. Verbal individuals constantly said, “Look what I did!” and non-verbal individuals were beaming as they waved over others to witness their accomplishment. This unforeseen growth in self-esteem and burst in social interactions lead the researcher to wonder if this was the effect in one classroom? What if these participants were to share their digital artwork online for a bigger audience? Would this lead to even more growth in participant’s belief in oneself? Would this sharing spark new conversations with friends and family and possibly start new online connections? Would this exposure of adults with ID sharing their digital art online lower stigma and increase awareness of this community?

Knowledge equals autonomy. In the interviews, the more knowledge a participant appeared to have about digital technology and/or the digital world seem to correspond to more autonomy in the participant's life. Cihak et al. (2015) state that the individuals who experience the digital divide are limited and often restricted from access to educational info, job opportunities, and further social isolation. The interviews provided rich information about participants who had more knowledge in their digital literacy skills were able to attain information by "ask[ing] Siri questions," looking up "bus schedules," utilizing "Google maps for traveling," finding recipes online and information on their personal interests, such as history and religion. The independence associated with understanding how to look up different types of information provided these participants with more autonomy in their life. As aspects of looking up transportation and using cell phones for navigation increased their independence in their daily lives, they depended less on their caregivers. This autonomy demonstrates the importance of digital literacy as, Cihak et al. (2015) informs that to participate successfully in today's world, individuals must have the skills of digital literacy to understand and enable the opportunity to access information.

Another aspect of knowledge leading to autonomy is accessibility. Accessibility in the use of technology can help individuals with special diagnoses to overcome personal barriers. One participant spoke about having dyslexia and how digital technology and the digital world is able to help him with this diagnosis. He shared tools he knew about and used. One tool he expressed using daily was the microphone option on Google's to help him read or write and navigate the internet. As well, how voice-to-text allowed more independence for himself instead of relying solely on his caregiver. This is one specific, but significant instance, where having the knowledge of these voice-to-text accessibility options in digital technology and the digital world improved this participant's independence in the world. Without this knowledge of this specific accessibility option, he would be dependent on his caregiver.

As stated earlier, this population is more likely to experience the digital divide and there were areas that were not brought up by the participants in the interviews. No one mentioned using the internet to access any type of health services, booking appointments or creating content to share with others. This is concerning as, Collie and Cubranic (1999) illustrate the movement towards increasing digital health services such as, 'Telehealth' to meet the needs of underserved populations. Without access or opportunity to training, the ability to participate in online support groups, online therapies or online (video) doctor's appointments is not possible (England, Sheehan, & Hassiotis, 2017).

The results from this study infer that this community is not currently using these types of services and may not have the opportunity to as well. These lack of results show the gap in this population not accessing these essential services. This is significant because this population experiences higher rates of mental health problems (Sheehan & Hassiotis, 2017). This may be a limit in the interview questions (as these questions weren't directly asked) or it may be due to a lack of knowledge in digital literacy that these services or opportunities are available and possible to acquire.

Digital visitor. White, Connaway, Lanclos, Hood and Vass (2014) propose that there is a continuum of categorizing an individual's online presence that ranges from 'digital visitor' (para. 4 to 'digital resident' (para. 6). Digital visitors are described as going online for a clear goal and leave little to no trace (White, Connaway, Lanclos, Hood & Vass, 2014). A digital resident, White, Connaway, Lanclos, Hood & Vass (2014) explain are individuals who go online to connect socially with others and leave a digital footprint. White and Le Conu (2011) add that digital residents live a portion of their life online through creating content to share with others about things such as their personal lives. The importance of distinguishing between what a digital visitor and a digital resident is that the results of this study show the participants are in the latter category. First off, in all nine interviews of participants who had access and had experiences of being online, not a single one mentioned they had generated any personal content. From this evidence and the passive words used continuously in the interviews, the researcher hypothesizes that even though these participants are online, they're not leaving any footprint. They are simply consuming content in a passive orientation as they explain their use of the digital world as "looking," "watching," "checking," listening" and "playing." This passive consumption may be a learned behaviour from society's externalized expectations it has previously placed on this community. If this is not the case, this passive consumption may be a mixture of factors such as safety concerns, lack of digital literacy, and/or gatekeeping by caregivers. Although it's great that access is happening, Cihak et al. (2015) establishes that to be digitally literate one must be able to understand and create content on the internet. The results show a passive visitor only consuming content rather than creating content.

Hartley, McWilliam, Burgess, & Banks (2008) further note that the distinction between traditional and digital media literacy is the participatory component. Without participation in creating content for others to see, this population appears to be invisible to the public. This invisibility can potentially create digital exclusion. Park (2012) states that digital exclusion is the inability to engage in online activities and relationships. Although most of the participants communicate in various ways directly with friends and family, the lack of skillset to engage in online activities, creating content or new relationships could be argued to be digitally exclusionary. By not having an active presence online, remaining a digital visitor, creates an outsider persona or experience which sadly parallels this communities likelihood of experiencing this in public, social settings.

This theme that emerged in the results clearly shows how digitally non-inclusive the digital world is for adults with intellectual disabilities. If technology and the internet were created, on the most basic level, for everyone to connect, it appears unjust not to have digitally inclusive spaces for this community. Owuor et al. (2018) advocates that even though the digital world has the ability to enable adults with ID to connect to community, the lack of inclusion in digital spaces reinforces segregation. Digital inclusion means everyone should have the opportunity and knowledge to become a digital resident.

Caregiver's role. The caregiver's role is a paramount factor in the participant's experience, exposure, and opportunity to connect through technology to the digital world. Two polarities of subthemes that emerged in caregiver's role ranged as either the "helpful assistant" or "the restrictive gatekeeper" (citation and page). As the helpful assistant, the caregiver provides support in troubleshooting difficulties and helping the participant navigate the digital world. The results demonstrated this when participants said, "My dad helps me on the computer and fixes it," and "My mom helps me navigate the website and helps me check my email." Newman, Browne-Yung, Raghavendra, Wood, & Grace's (2017) findings confirm that the caregiver's knowledge and comfort level with technology and the digital world transferred onto their dependents. This illustrates that the level of assistance the caregiver can provide to the adult with ID is based on their own personal experiences with digital technology and the digital world.

These varying levels of skill in the caregiver and the ability to transfer their knowledge to the participant indicates formal training is still required to close a gap.

At the opposite end of the continuum, caregivers can be restrictive gatekeepers ensuring the participants' experiences and opportunities to technology and the digital world are deliberately limited or non-existent. Two participants expressed that, " I don't have a computer, cell phone or iPad but my care worker does" and "I see my caretaker using those things." These experiences echo Chadwick, Quinn and Fullwood's (2016) arguments that caregivers of adults with ID may choose to restrict the opportunity or fail to provide the technology to access the digital world. Other participants noted they had been given digital technology but it was highly restricted on how they could use it. Comments included, "My cell phone has so many limits on it," and "I only use my cell phone for emergencies." This iterates a lack of opportunity to the benefits of what's possible for these participants. Overall, any restrictions of access or barriers directly created by the caregiver ensures dependency and lack of potential autonomy for the individual. It appears that the caregiver's role may have a significant impact on the participants experience and relationship with technology and the digital world.

Limitations of the research design

Limitations of the study included the questions asked in the interview, the generalizability of the results, and the impact of one researcher. The interview didn't ask any specific questions about the participant's initial level of digital literacy. Questions could have been produced such as, "Where did you learn how to use a computer and or the internet?" or "Have you taken any formal training before this class in using technology or the internet?" The information that may have been collected from these direct questions could have enriched the data further and helped pinpoint if there was any digital literacy training and if so where the training occurred.

Another limitation is the generalizability of the study. Using a phenomenological approach in the methodology for this study, the results are specific to the context where the research took place. These results are specific to the eleven participants' personal and shared experience in this unique location at this time in society. Although the results may indicate one thing, the researcher is curious about how different questions or changes within the context could or would have altered the themes discovered. The last limitation is that at all levels of this research study were executed by one person. Although the researcher has named, and frequently reviewed their biases, the researcher provides one standpoint and the associated lens in the interpretation of the results. However, having the research collected and examined through by one person enables the strength of consistency.

Future directions

Future directions for research in the area of digital inclusion for adults with ID could be focused on a specific area of interest (engagement in online communities, creation of content, accessing online mental health services, etc.). Topics that were not brought up or directly asked consisted of digital literacy training (safety, cyber etiquette & digital devices), knowledge about or experience using online support groups, creation and sharing of personal content and the experience of communicating through technology/internet versus in person (level of anxiety, type of expression, etc.). These topics would provide a plethora of information to assess what more is needed for this community to be digitally included with society in online environments, and if there is an increase in self-esteem and/or autonomy.

Conclusion

The aim of this study was to answer the question: How do adults with intellectual disabilities currently use digital media and the digital world? By investigating this question, the researcher hoped to discover if this community (adults with ID) experienced digital inclusion and if not, assess how wide the gap was for this community to potentially access digital art therapy or online digital art therapy.

What was found in this study was six emergent themes of: (a) effects of digital literacy deficits, (b) online social interactions, (c) positive and novel experiences, (d) knowledge equals autonomy, (e) digital visitor, and (f) caregiver’s role. These themes illustrated a picture of the potential benefits of access to digital technology and the digital world, the potential negative experiences without proper training/knowledge within access to these platforms and technology and the further marginalization of restricted access to any of these opportunities. The benefits found encompassed increased autonomy in the individual’s daily life, expressions of positive self esteem, and strengthening of previously created social relationships. The negative experiences of access were expressed through comments concerning safety and the lack of digital literacy training. Lastly, restricted access didn’t enable the participants in having any experiences (positive or negative) or benefits in relation to digital technology or the digital world, rendering them virtually invisible. Overall, the findings indicate a clear lack in digital literacy skills and a lack in creating or sharing content, the positive effects of online social interactions and the potential for increased independence in a participant's daily life.

One unforeseen result that emerged developed from the creation of digital art. As the participants increased their digital literacy skills and were exposed to the opportunity to creating their own digital artwork this led to a perceived increase in self-esteem and a fostering of new social interactions. Improved self-esteem was witnessed by the growth in autonomy of using the technology independently and the ability to create an end product. The new social interactions blossomed out of the feeling of being proud of what they personally created and the motivation to share with others in the environment. Personal sharing in this environment lead to a reciprocal back and forth conversations with other participants, facilitators and volunteers. It is interesting to note that although the class was focused on digital technology and the digital world the participants fostered and built a classroom community in the here and now environment. This illustrates that engagement on the digital world does not have to result in leaving the current one.

My suggestion moving forward is that more work needs to be done for this community to enable them the access and ability to be digitally included in online environments and benefit from possibilities of digital technology. As well as, there is indication that this community is not yet ready to be able to access digital art therapy or digital online art therapy without support and further resources. Further research is needed to continue to advocate for this community to equitably access digital literacy training to able to engage in these new modalities of therapy. Lastly, a specific investigation on the effects of creating digital art with this community is highly recommended as the unforeseen result from this study was witnessing improvement in self-esteem and increased social interactions due this new opportunity of self-expression.

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Appendix A

Advertisement Letter for CAHD Participants

Dear Participants and families,

It is with great pleasure that we inform you that you will have an opportunity starting in September 2019 to participate in a very unique learning experience. In collaboration with the Digital arts Department here at Concordia, we will be having a joint project where we will work directly with undergraduate students in the digital media classroom and learn how to use digital media to create art and express ourselves.

We will meet weekly on Tuesday nights from 6pm-8pm at the Sir George Williams campus downtown (EV building) from September to April. (More details will follow)

We know that digital media (photography, videography, image manipulation, 3D printing and digital music composition) offers many benefits and can be a highly effective tool in not only emotional expression but also in creating connections between its users. Undergraduate students in the program will lend their skills and teach our participants how to use the media to create original art pieces throughout the academic year. In the spring of 2020 we hope to have a vernissage and an exposition of the work created to highlight our achievements.

The work done throughout the year will be monitored and documented by our graduate art therapy student scholar who will also be researching how working directly with our participants with disabilities has impacted the undergraduate student's perceptions of adults living with disabilities. As well as collecting input from the participants about their experiences with digital media, digital technology and the internet.

If you are interested in participating in this project, please let us know by sending an email to cahd@concordia.ca. If you have further questions please feel free to contact us at your convenience. Looking forward to having you with us for this very exciting project!

Appendix B

CAHD Participant Script

I wanted to check in with you if you would be interested in participating in a research study. Participation is optional and this would not affect your placement at the Centre of Arts in Human Development or Concordia University, I just want to make sure that is clear? Would you like to hear more? <*yes, continue* >

The research study involves four small interviews that will be audio recorded, observation notes. The purpose of the research is to explore how we can further reduce societal stigmatization towards adults with intellectual disabilities. This study will be conducted by an art therapy Master's student at Concordia University to answer the question, How do adults with intellectual disabilities currently use digital media and the digital world?

The research will take place in the same location and hours as DART 453 taught by Israel Dupuis at Concordia University. Your identity will be kept confidential and no personal information will be disclosed. More information is available from the principal investigator, Dillon Lewchuk. If you are interested in participating, or have any questions regarding the study don't hesitate to contact the principal investigator. Again, participation in this study is voluntary and will not affect your placement at the Centre of Arts in Human Development or Concordia University.

Principal Investigator: Dillon Lewchuk

Phone: (306)-541-9163

Appendix C

Participant Information and Consent From

INFORMATION AND CONSENT FORM

Study Title: Reducing Societal Stigma towards Adults with Intellectual Disabilities through Meaningful Contact and Digital Inclusion
Researcher: Dillon Lewchuk
Researcher's Contact Information: (306)-541-9163 or dillon.lewchuk@gmail.com
Faculty Supervisor: Janis Timm-Bottos, PhD, ATR-BC
Faculty Supervisor's Contact Information: (514)-848-242 ext 4799 janis.timm-bottos@concordia.ca

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

A. PURPOSE

The purpose of the research is to explore how we can further reduce societal stigmatization towards adults with intellectual disabilities. This study will focus on answering the question, How do adults with intellectual disabilities currently use digital media and the digital world?

B. PROCEDURES

If you participate, you will be asked to complete four short interviews between the months of October 2019 to April 2020. The interviews will not consist of no more than five questions and will take approximately 5-10 mins each. The interviews will be audio recorded to be transcribed later.

In total, participating in this study will take approximately 20-40 mins of your time.

C. RISKS AND BENEFITS

Participating in this research should not harm you in any way. It is completely up to you to participate and you may withdraw from the study at any time before April 10, 2020 without any consequences by contacting the researcher.

Potential benefits include: Advancing the academic literature in this area of study and furthering the data gathered around the usage and interaction of digital technology, digital media and the internet for adults with intellectual disabilities.

D. CONFIDENTIALITY

We will gather the following information as part of this research through four interviews that will be audio recorded and monthly observations by the researcher.

We will not allow anyone to access the information, except people directly involved in conducting the research. We will only use the information for the purposes of the research described in this form.

The information gathered will be anonymous. That means that it will not be possible to make a link between you and the information you provide. The audio recording of the interviews will be transcribed to ensure anonymity and the recordings will be destroyed. The field notes taken will not mention any names or identifiers that could lead back to any individuals participating in the study.

We will protect the information by keeping the transcriptions of the audio recordings and the field notes in a locked cabinet at the Centre for Arts in Human Development.

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

F. CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time by contacting the researcher before April 10, 2020. Although you may withdraw at any time, any data collected before withdrawal will be kept due to its anonymity.

Once again there are no negative consequences for not participating, or withdrawing at any point of the research study.

G. PARTICIPANT'S DECLARATION

I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

NAME (please print) ____

SIGNATURE ____

DATE ____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Their contact information is on page 1. You may also contact their faculty supervisor.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Appendix D

Interview Questions

<u>Interview</u>

1) Do you have access to a computer, cell phone or iPad?
Computer ○ Yes ○ No
Cell Phone ○ Yes ○ No
iPad ○ Yes ○ No

Additional Comments:____________________________________
____

2) How often do you use this device?
________________ Computer
________________ Cell Phone
________________ iPad

Additional Comments:____________________________________
____

3) What do you like or look at on this device?
____ Computer
____ Cell Phone
____ iPad

Additional Comments:____________________________________
____

4) Are there any challenges to using this device?
____ Computer
____ Cell Phone
____ iPad

Additional Comments:____________________________________
____

5) Do you have access to internet at home?
○ Yes ○ No

6) Do you use the internet? And if so, what types of things do you search?
○ Yes ○ No
Searches:____
____

7) What are things you like about the internet?

____

8) What are things you dislike about the internet?

____

9) Are there any challenges to get on or using the internet?

____

10) Do you have social media?
Facebook ○ Yes ○ No
Instagram ○ Yes ○ No
Twitter ○ Yes ○ No
Other: ________________

11) What do you like about social media?

____

12) What do you dislike about social media?

____

13) Are there any challenges to get on or using social media?

____

14) Has anyone ever been mean to you on social media?

____

15) Do you have an email address?
○ Yes ○ No

16) What do you use your email address for?

____

17) Are there any challenges to getting on or using your email address?

____

18) Have you kept in touch with others using social media, email or the internet?
○ Yes ○ No

Additional Comments:_________________________________

____

19) If so, how has this helped your relationship with this person(s)?

____

20) Have you made a new friend and/or started a meaningful relationship online?
○ Yes ○ No
Additional Comments:________________________________
____

21) If so, how was this different then making a friend and/or starting a relationship in person?

____

Appendix E

Figures

Figure 1. Digital Footprint Visual Results