Connecting, sharing and reshaping life stories: Experiences, benefits, and challenges of older adults in a digital storytelling course

by

Simone Hausknecht

M.A., Simon Fraser University, 2014
B.A., Charles Sturt University, 2009
B.H.Sc., University of New England, 2005

Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

in the
Educational Technology and Learning Design Program
Faculty of Education

SIMON FRASER UNIVERSITY

Summer 2018

Approval

Name:	**Simone Hausknecht**
Degree:	**Doctor of Philosophy**
Title:	**Connecting, sharing and reshaping life stories: Experiences, benefits, and challenges of older adults in a digital storytelling course.**
Examining Committee:	**Chair: Engida Gebre** Assistant Professor **David Kaufman** Senior Supervisor Professor **Carman Neustaedter** Supervisor Associate Professor **Kevin O'Neill** Internal Examiner **Susan Crichton** External Examiner Associate Professor & Associate Dean Faculty of Education University of British Columbia, Okanagan
Date Defended/Approved:	July 23, 2018

Ethics Statement

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

a. human research ethics approval from the Simon Fraser University Office of Research Ethics

or

b. advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University

or has conducted the research

c. as a co-investigator, collaborator, or research assistant in a research project approved in advance.

A copy of the approval letter has been filed with the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Simon Fraser University Library
Burnaby, British Columbia, Canada

Update Spring 2016

Abstract

There is a global demographic shift with older adults increasing in number. With this shift comes many challenges and opportunities. Older adults may benefit from increasing their digital literacy skills, sharing their life experiences through story, and participating in lifelong learning. This thesis evaluates a project that provided these opportunities. The theoretical lens used is a combination of a life course approach, narrative theory, and social constructivist theory. The thesis used a case study approach that examined 15 offerings of a digital storytelling course attended by a total of 98 older adults. Each course ran for 8-10 weeks (two hours once a week). Data collection for the research conducted involved background information (including participant computer skill level), post course evaluation forms, focus groups, and a questionnaire handed out to viewers during a “Sharing our Stories” event. The findings indicated that there were more female participants than male participants and over half of the participants had immigrated to Canada at one point in their lives. There were a range of digital skill levels at the start of the course, with most participants claiming to be beginner or intermediate. Results suggest that most older adults who completed the digital storytelling course reported an increase in digital literacy skills (computer, software, and Internet) and digital storytelling skills. Educationally, the course was also seen to be beneficial as participants suggested they had learned something new, whether from the program, the process, or both. However, sometimes the technology posed a challenge and time constraints were highlighted as being an issue. Participants also reflected on their stories and lives, at times reliving them and reshaping their stories. The artefact created through digitizing a story was considered as a way to connect to future generations and current family. The digital storytelling course appeared to create social connectedness to self and to others (in the past, present, and future). These findings suggest that courses using story and technology and creating a community of learners can be a beneficial approach for older adult learning environments. This thesis research contributes to the field of older adult education and educational technology by providing a deeper understanding of older adult learning with storytelling and technology and the benefits and challenges this provides. It also offers insights into the experiences of older adults within a digital storytelling course and examines the way in which storytelling and multimedia can play a role in lifelong learning.

Keywords: digital storytelling; older adults; lifelong learning; social connectedness; legacy; reflection;

Dedication

I would like to dedicate this thesis to those who were a part of this PhD story. I would like to thank my family who have helped me through my journey. To start with, my partner Stuart Money has provided the support needed for my success, and I am forever thankful for this. He has also accompanied me on many journeys across the globe to disseminate the findings. I would also like to dedicate this thesis to my daughter Skyla Melody who has kept me cheerful on long days with her positive attitude and never-ending song, and my daughter Ocean who always makes me laugh with her wit and charm. Without the combination of these lives interweaving with mine, I am not sure how far through this story I would have gone.

Finally, I would like to dedicate this thesis to Dr. David Kaufman with whom I have worked through two graduate degrees. He has given me endless support.

Acknowledgements

I wish to thank the Social Sciences and Humanities Research Council of Canada (SSHRC) and the AGE-WELL National Centre of Excellence Network for financial support of this project.

I would like to give a special thank you to Dr. David Kaufman and Dr. Michelle Vanchu-Orosco for their dedication and work on the project. Furthermore, I wish to acknowledge the facilitators and other researchers who made the research successful: Hollis Owens, Julija Jeremic, Connie James, Erik Paulsson, Gee Lam, Haley Rutherford, Hamideh Sarmast, Haley Rutherford, Lena Richardson, Mahboubeh Asgari, Mir-Kabir Mosavian-Pour.

Table of Contents

List of Tables

List of Figures

Preface


The Gates of Memory


DANCE ME HOME


ALAN'S STORY


REMEMBERING GRANDMOTHER

Chapter 1. **Introduction**

During my work exploring digital storytelling, I have come to realize that all of what we do can be broken down into stories, segments of understanding that weave with previous internal narratives (McAdams, 1993). These make up the life course. Thus, my introduction of this thesis work is really an introduction to a story, my thesis story. Yet, this dissertation is also the conclusion to my thesis story. The story begins with Dr. David Kaufman, Dr. Michelle Vanchu-Orosco, and myself working on a project designing and researching digital storytelling course for older adults. We originally called these offerings 'workshops' but later changed our label to 'courses' since this event lasted 10 weeks. My role within this study was the educational designer and developer of the course, and later as the lead research analyst.

Seniors (60+) are one of the fastest growing age groups globally, with estimates of this demographic doubling by 2050 (WHO, 2015). In Canada, there are almost 5.8 million seniors, and it is predicted that there will be an increase from 16.1% of the population to 20.1% by 2024 (Statistics Canada, 2015). For the first time in history the number of older adults in Canada has surpassed those between the age of birth-14 (Statistics Canada, 2015). This has been an ongoing trend globally (WHO, 2015) and has led to an increase in research on ageing. The growth in an ageing society impacts institutions, work places, culture, and almost all aspects of society (McDaniel & Rozanova, 2011; WHO, 2015). With this shift, there will need to be a change in perspectives that can address the challenges of ageing, such as everyday living can become more difficult with increased concerns towards fractures, isolation, physical ailments, and cognitive decline (WHO, 2002); thus, maintaining quality of life has been a growing topic. On the other hand, a longer life course may also bring many opportunities that should also be explored and supported (WHO, 2015). The World Health Organization (2015) has called for action towards creating healthy communities and healthy ageing that allows older adults to be active members within society. The issues presented with an increasing ageing population have led to a growth in research including interdisciplinary networks formed to address many of the challenges facing this population (e.g. AGE-WELL).

Living a life has a different meaning now than what it did a century ago (Alheit, 1994). The change in patterns and increase in time of the lifespan give the life trajectory different dimensions such as a longer period of being a child and being engaged with varying generations (Sheehy, 1995; Bengtson & Allen, 2009). Older adults have co-created history bringing with them a contextual understanding that is sometimes lost within textbooks. They may have gained knowledge, wisdom and a deeper understanding found in lived experiences (Hummert, Garstka, Shaner, & Strahm, 1994). Their life trajectories, and the multiple stories embedded within these, may include pieces of wisdom that could be valuable for a deeper understanding of history and a reflection upon life. Therefore, sharing these stories may benefit the storyteller and viewer/listener.

Storytelling is one of the oldest forms of communication and ways of sharing representations of reality. It spans across culture and time, being found across diverse cultures and throughout history (Miller & Moore, 1989). Story precedes many current forms of communication; for example, it can be seen through the lines of cave drawings depicting a series of events. The stories told throughout our lives intertwine and influence our understanding of identity (McAdams, 2008). They wrap themselves around our memories, giving us a cognitive tool to form meaning (Bruner, 2004). Individuals often create a narrative structure from events within their lives (Polkinghorne, 1991; Bruner, 1991). These events can form a significant role in how an individual perceives themselves (McAdams, 2008). However, stories are not told in isolation. Life narratives are embedded in our social relationships and everyday interactions, where they are shared, revised, and then retold throughout the life course (McAdams, 2001). These stories form an important role in our communication with others, allowing the teller and listener to explore perspectives within the context of the narrative. Sharing and reflecting upon personal stories may increase a person's knowledge of themselves (Birren & Deutchman 1991). For older adults, it may be a valuable activity to reflect on life experiences and consider the lessons learned throughout the life course. This may increase an individual's sense of well-being and identity (McAdams, 2001). Furthermore, artifact creation that encompasses the narrative, such as a written story or recording, may provide an opportunity to create a legacy (Birren & Deutchman, 1991).

With technological advancements, story can become multimodal, and tellers can use different media within their expressions. Digital storytelling, the use of multimedia in

the creation of a story, is a way to combine technology and story (Robin, 2015). It weaves narrative stories with multimedia tools, allowing multi-faceted ways of expressing and creating meaning. Traditional approaches to storytelling, such as exploring story arc, points of change, theme, are combined with technology. Thus, the art of storytelling crosses over between what has been culturally available for many centuries and that which is new. Furthermore, artefact creation has transformed. Whereas throughout history stories were left on cave walls, inside pyramids and on papyrus, on scrolls, and via the printed press, the artefact left with a digital story is digital being potentially multimodal multimedia. A story is no longer a linear written piece that is read out loud, but it has pictures, sounds, music, and can be created and explored in numerous ways. The creators (in this case older adults) become digital producers, having the capacity to share with family, friends, or a wider audience (Burgess, 2006). Furthermore, the stories produced can be tools that give marginalized populations a voice (Sawhney, 2009) and allow everyday people to be heard and share their story through a digital delivery system (Burgess, 2006; Couldry, 2008). Their stories could be distributed among small local groups (such as family) or a wider community. Stories can also affect viewers/listeners who may relate to the story and reflect on their own emotional responses and empathize with the storyteller (e.g. Christiansen 2011; Loe 2013; Stacey & Hardy 2011). Thus, they may serve to connect storyteller and viewer (McDrury & Alterio, 2003).

The combination of technology and personal narrative could offer occasions for older adults to find new ways to express themselves, while also serving as an opportunity for lifelong learning. There is a growing need to provide occasions for lifelong learning for older adults (WHO, 2015) while also improving digital literacy, as both may help increase quality of life (Baecker, Moffatt, & Massimi, 2012). Personal growth and learning are essential to healthy ageing communities (WHO, 2015). Digital storytelling can give learners a varied learning experience including what is often termed 21st century skills such as digital literacy (Czarnecki, 2009). Furthermore, sharing and reflecting on life stories may be beneficial for older adults as seen in autobiographical narrative work (Birren & Deutchman 1991) and reminiscence (Bohlmeijer, Roemer, Cuijpers, & Smit 2007).

The present study investigates and reports on the experiences, benefits and challenges of older adults who completed a digital storytelling course. Storytelling is not

an isolated experience; therefore, the study also reports on the reactions to the digital stories of story viewers from the community who attended a special viewing session.

1.1. The purpose of this research

This project provides older adults with the opportunity to create a short autobiographical digital story of a significant event that brings their own history, cultural knowledge, and experience to the writing and creative process. The purpose of the project was to use digital storytelling to create an opportunity for socializing, digital literacy, engagement in lifelong learning, and exploration of life stories.

The current thesis used a case study approach to analyze and evaluate the digital storytelling course. This was exploratory research since there has been limited research on digital storytelling designed and conducted with older adults. Thus, this thesis is an original contribution to research. It provides insights into the experiences, possible benefits, and challenges of participating in a digital storytelling course with other older adults. It also examines the way in which storytelling and multimedia can play a role in lifelong learning and 21st century skills in the lives of older adults.

1.2. Research questions

This study addressed the following research questions:

1. How do older adults attending a course on digital storytelling perceive the process, the benefits, and the challenges involved?
    a. In what ways, and areas, does learning occur?
    b. What social, emotional, and cognitive benefits and challenges occurred?
2. How do viewers at a “Sharing our stories” event perceive the stories?

1.3. Outline for the thesis

This thesis has seven chapters. The introductory chapter provides an introduction to the research.

Chapter two provides a review of the literature. This includes an examination of four theoretical perspectives (Life course theory, narrative theory, social constructivist learning theory, human computer interaction in education) used within the study. I then look at the older adult cohort and then review the literature on digital storytelling research.

Chapter three examines the digital storytelling course design, including design choices, process, software, training, and weekly structure. This serves to give readers an understanding of the educational design while also providing descriptive data of the setting and experience.

Chapter four examines the methods and methodology used. It starts by discussing case study methodology and then examines the data collected and reasons for using focus group interviews. The data analysis is discussed by reporting on the quantitative and qualitative techniques, such as how the data was coded. It also reports on how trustworthiness was addressed.

Chapter five reports on the results of the data analysis. This includes the demographic and background information, participant evaluation of the course, focus group interview results, viewer feedback, and a brief personal reflection.

Chapter six discusses the results in more detail, tying together the different findings and situating these within the literature. This includes looking at the educational experiences, benefits, and challenges. It also discusses the experience of connectedness. It ends by considering the various outcomes and their relationship to healthy ageing.

Chapter seven concludes the thesis by discussing its limitations, possible future work, and the study's original contribution to research.

Chapter 2. **Literature review**

My thesis story interweaves many areas of research and theory. The multi-faceted nature of digital story design, paired with the deeply personal nature of storytelling, creates a broad area of exploration and contextual background. The literature review of this thesis will focus on:

1. Theoretical lens: The integration of life course theory, narrative theory, social constructivism (Figure 1).
2. Target population: A review of literature on older adults and the concerns that the digital storytelling course may address.
3. Background and research: A review of literature on digital storytelling.

2.1. Theoretical Background

A number of theories are used to discuss the various facets of the project (Figure 1). These fall under the categories of the aging process, digital storytelling, teaching and learning, and computer use. The specific theories are: life course theory, narrative theory, and social constructivism. However, these integrate well as they are within similar epistemological perspectives but address different aspects.

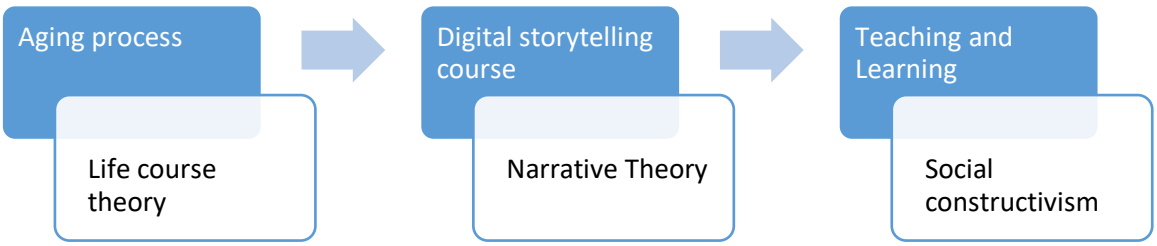


Figure 1 Theoretical background: Digital storytelling course

2.1.1. Life course theory

One approach to examining aging within the social sciences is through life course theory. When examining aging research, a life course approach is useful as it gives a wholistic perspective that is multifaceted. A life course can be defined as the "sequence of age-linked transitions that are embedded in social institutions and history" (Bengtson, Elder, & Putney, 2012, p. 10). The life course examines events and roles and how these change over time (Giele & Elder, 1998). Furthermore, life course theory considers how the different trajectories throughout a person's life, and the interplay of these, create the life course (Elder, 1994). For example, decisions made when an individual is young may affect aspects of an individual's life in later years (Elder, 1994). Various transitions throughout the life course may lead to changing roles, status, and life situation (Hutchinson, 2011). For older adults, both their previous trajectories and decisions, coupled with shifting transitions (such as retirement) may affect future trajectories. Within life course theory, there is an emphasis on the time, context, process, and meaning in the person's life (Bengtson & Allen, 2009).

Life course theory has five key principles: Life span development, agency, time and place, timing, and linked lives (Elder, Johnson, & Crosnoe, 2003). The life span development principle suggests that human development is a lifelong process. Thus, understanding the long-term perspective is important (Elder, Johnson, & Crosnoe, 2003). The principle of agency suggests that "Individuals construct their own life course through the choices and actions they take within the opportunities and constraints of history and social circumstance" (p. 11). Although individuals are constrained by certain circumstances, they are not passive. They make choices that can influence future outcomes. However, planning a specific future does not necessarily guarantee it.

Regarding the principle of time and place, life course is influenced by socio-historical factors that affect various cohorts (Elder, Johnson, & Crosnoe, 2003). Elder (1994) discusses this as being a specific cohort effect that occurs with specific birth years depending on what is happening historically during specific points in a person's life. For example, for older generations whether they were born before or after WW2 can have different effects on their childhood. The sequence of events throughout the life course may be very different for different generations. Thus, if they grew up as a child during WW2, it could have meant food rations and busy parents; whereas, if they were

adult men or women they may have fought in the war. Older adults do not belong to one cohort, but now expand across many. Thus, some have experienced a World War; whereas, others have not. Furthermore, older adult's functional capacity is not always related to age.

The principle of timing is important as an event may have different meanings at different points in an individual's life (Elder, Johnson, & Crosnoe, 2003). Life timing is "the incidence, duration, and sequence of roles, and to relevant expectations and beliefs based on age" (Elder, 1994, p.6). It involves considering the timing of events along the interweave of trajectories; thus, such aspects as the age that an individual has children can affect career, marriage and other decisions and directions in the person's life. Decision making is also influenced by the social norms of the time. The relationship between social norms and the timing of events can have specific consequences and these change at different points in history. Consequently, social change will impact the life course in different ways depending on the individual involved.

The final principle is linked lives. Linked lives suggest that each individual life is "embedded in social relationships" (Elder, 1994, p. 20). Lives are not lived alone, but intertwine and develop within social networks. For example, as children individuals are influenced by their parent's behavior and circumstances. This interdependence is crucial in understanding the individual. Relationships can hinder or facilitate our health, well-being, and identity.

2.1.2. Narrative in our lives and learning

Throughout the life course, people tell stories about their lives and integrate these stories with future trajectories (McAdams, 2008). Various researchers and theorists have explored the role of narrative and storytelling within individual's lives (e.g. Bruner, 1991, 2004; Polkinghorne, 1991; Sarbin, 2004). Storytelling is deeply embedded in people's lives and memories. Each time a person recounts a memory, they often conceptualize where to start, who to include, what are the important points, and where it should end. People often perceive their lives as short narrative stories that have meaning and allow individuals to make sense of their life (Bruner, 2004). Stories form a central role in our identity and communication, providing an opportunity to explore self, culture, and others.

Bruner (1991) discusses the narrative construction of reality and outlines ten key features in narratives within our lives.

1. Narrative diachronicity: Narrative events occur over time. This should be differentiated from clock time, but as human time. These are the events as they occur over time.

2. Particularity: Narrative includes a particular event; however, the particulars also may have some generic features.

3. Intentional state entailment: Characters within a narrative have specific intentions (e.g. beliefs, values, desires) that they act with in a specific environment.

4. Hermeneutic composability: Narratives are constructed from a series of events that are interpreted as a story with meaning.

5. Canonicity and breach: A story usually requires a breach of the normal set of everyday events. Thus, something interesting should happen.

6. Referentiality: Narratives are only a representation of a reality; they are a narrative “truth” which does not need to be exactly true. However, they must still appear believable.

7. Genericness: Narratives can be classified into a genre to guide our understanding of human difficulties.

8. Normativeness: Stories, although they have a breach in normal events, are fundamentally about social norms.

9. Context sensitivity and negotiability: Narratives that are communicated undergo a negotiation between the readers/listeners perspective and background knowledge and the storyteller’s version. This partially transpires through an understanding that the story is context dependent and the reader/listener agrees to suspend disbelief.

10. Narrative accrual: Narratives are cumulative. One leads to another. In the instance of life narratives, the life story does not entail a single event, but it is gathered from many stories.

Polkinghorne (1991) observes how narratives have a Gestalt organization; in that they can be examined as parts of a whole. When people perceive their lives as consisting of stories, these contribute to their whole life story and who they are. Thus, individual events are examined with reference to their relationship to the whole. This gives meaning to these short narratives, as Polkinghorne (1991) suggests:

> Narrative structuring is a characteristic of human consciousness that draws the sequence of experienced events and proposed actions into unified episodes. By being included in a plot, events take on significance and meaning. When stories (whether factual or fictional) are told or written, they are but a recapitulation of the structure of everyday experience and action. (p.142)

Thus, individual lives can be perceived as brief episodes which allow people to find meaning and share understanding with others through recounting events. Polkinghorne (1991) suggests that creating narrative structure around lived experience does not simply help in forming meaning of past events but assists in the construction of future episodes. These short stories, of storied events, then make up the life story as a whole.

The events within a person's life are often examined and re-examined for meaning at different times across the life course. Various researchers have suggested that this meaning making process contributes to a person's identity (Pasupathi, Mansour, & Brubaker, 2007; McAdams, 2001; McAdams & McLean, 2013). A person will examine their past experiences to better understand how they became their current self (Pasupathi, Mansour, & Brubaker, 2007). New experiences and themes must be evaluated against previous life stories; therefore, "the life story itself develops in terms of its content and themes" (p.86). McLean, Pasupathi and Pals (2007) suggest that situated stories, those created and told within a specific situation that have a specific purpose and audience, may affect the development of self throughout the lifespan. Life stories, similar to ideas of cognitive dissonance, are most impactful on self-identity when they are about a challenge or disruption (McLean, Pasupathi & Pals, 2007).

Another field that has developed around ageing and storytelling is narrative gerontology. Within this field, there is a concern for the subjective experience and

meaning of ageing (Randall & Kenyon, 2004). It is the combination of viewing ageing as a process in which story is used as a lens and the interplay of storyteller and story listener (Kenyon & Randall, 1999). Life stories are both facticity and possibility. Facticity being who an individual is as story at any point and possibility as the opportunity to restory themselves. Thus, these are the aspects of our story we can change.

Learning through narrative can be very powerful. Storying ourselves and making meaning through these is common outside of Western cultures (Merriam, 2008). Garcia and Rossiter (2010) discuss narrative learning as narrative meaning, narrative knowing, and narrative pedagogy. Similar to the ideas of Bruner (1996) and Polkinghorne (1991), narrative knowing and narrative meaning are crucial to our understanding of self and our understanding of the world. They allow us to make meaning of events and our place within these. Hopkins (as cited in Garcia & Rossiter, 2010) suggests that narrative is where learners make meaning from their perspective and the content. Stories can have a powerful impact on learner's ability to develop a deeper connection and understanding of others and their viewpoints (Garcia & Rossiter, 2010). Furthermore, multimodal approaches to story may give multiple avenues to explore this meaning.

Using multimedia in the creation of digital stories may give storytellers further opportunities to explore and express their lived experiences. When people recount stories, it is rarely a voice narrating alone, but they often tell the story through multimodal methods. For example, the speaker might use hand gestures, intonation, acting, song, and other features to bring their story to life (Ochs & Capps, 1996). Furthermore, while incorporating images into storytelling can be seen in picture books, slide shows, or photo albums, they are being increasingly used in social media storytelling, such as Instagram and Snapchat (Vivienne & Burgess, 2013). The multimodal requirements of digital storytelling provide further possibilities to play with meaning, juxtaposition, and re-imagine a life narrative (Davis & Weinshenker, 2012). It often takes time and reflection for the digital storyteller to go through visual and sound media to find the best fit to capture the moment, mood, and meaning that the storyteller wants to portray.

2.1.3. Educational Lens

The educational lens in which this thesis, and the digital storytelling course was designed, is social constructivism and sociocultural perspectives of education.

Furthermore, learning is also discussed as situated within experience. Although situated and social constructivist ideas may use different language, their core ideas and principles are similar (Barab & Duffy, 2000) and so will be discussed here for their foundations, more than peculiarities.

The underlying belief of constructivism is that individuals construct knowledge from their experiences (Cunningham & Duffy, 1996). Thus, constructivism moves away from an objectivist view of learning to one where the individual experience becomes important in the learning process (Ertmer & Newby, 1993). Although individual constructivism still discusses aspects of the acquisition metaphor (Sfard, 1998), the individual is now actively controlling their understandings. Savery and Duffy (1995) delineate three main philosophical views that constructivists hold. First, what we understand is based on our interactions and experience with the world. Second, puzzlement (an epistemic conflict also discussed by Piaget as disequilibrium and Dewey as perturbation) is the motivation/stimulation for learning. Finally, knowledge advances through social negotiation and through reflection on understanding.

Learning happens when a learner experiences something in the world that is not what they expect to occur, so they must negotiate their understanding (Cunningham & Duffy, 1996). They attempt to resolve this conflict through constructing an altered view. This epistemic conflict has been referred to as disequilibrium (Piaget), perturbation (Dewey), or puzzlement (Savery and Duffy, 1996; Cunningham & Duffy, 1996). There can be many sources of puzzlement, including teachers and other learners (Cunningham & Duffy, 1996). To follow Piagetian theory, the learning environment should create a certain amount of epistemic conflict. A successful learning environment that uses constructivist theory in its design should provide physical and/or social opportunities for learners to experience epistemic conflict and resolve this conflict through supported self-reflection and self-regulation practices (Cunningham & Duffy, 1996).

Memory and transfer are often perceived as being related to scaffolding and linking networks to prior knowledge (Jonassen, 1999). Thus, memory is constantly being constructed upon and is an accumulation of previous interactions (Ertmer & Newby, 1993). The more networks and elaborations of the memory, the better the person should be able to recall information (Wise & O'Neill, 2009). Within the context of digital

storytelling, it can be suggested that each time a person recalls a memory, it changes with their elaborations and the new context. Thus, the initial meaning of events may be transformed when recalled at a different point in time.

Social constructivism builds upon constructivism but places an emphasis on the importance of collaboration and social interaction within the learning process. Many of the ideas adopted by social constructivists stem from Vygotsky's sociocultural perspective. However, there are two varying interpretations of Vygotzykian theory (Lipponen, 2002). This split of interpretation accounts for possible differences in social constructivism and situated cognition theories of the relationship between social interaction and learning. In the first interpretation, Vygotzky believed that through collaboration people can master something that they could not prior to the interaction (Lipponen, 2002). They then internalize this, and it adds to their individual understanding. The second interpretation is that the learning is created within a socio-cultural group where it is distributed and mediated among those involved, both humans and tools (Lipponen, 2002). Some social constructivists may be more aligned with one interpretation or another, situated cognition is more aligned with the latter.

Social constructivism is popular within the learning sciences, particularly in computer supported collaborative learning. Prominence is given to the collaborative nature of learning (Scardamalia & Bereiter, 2006). Social constructivism is concerned with knowledge construction at the group level, or collective sociocultural activity (Cunningham & Duffy, 1996). Here there is a shift from students constructing their own knowledge to becoming a part of “a knowledge building community” (Scardamalia & Bereiter, 2006). After knowledge is constructed in a social situation, it can be internalized by the individual using cognitive artifacts (Stahl, 2004). Social constructivism (to some extent), and particularly situated cognition start to consider knowledge as knowing, as something an individual participates in (Sfard, 1998).

Situated learning theory evolved from a growing dissatisfaction with epistemological theories that ignored the importance of context and the environment in the learning process (Brown, Collins, & Duguid, 1989). Situated learning theory shares some of its roots with constructivist theorists. For example, Dewey is seen as an early advocate of situated learning and Vygotzky’s theories, as discussed earlier, focused on socio-cultural aspects (Cunningham & Duffy, 1996). Situated learning theory’s core

belief is that the context/situation/socio-cultural aspects are crucial to learning (Brown, Collins, & Duguid, 1989). The situation is an integral part of the learning process and cannot be isolated from it. The idea of knowledge is replaced with ideas of knowing; thus, differentiating knowledge as an action to participate in versus a distinct element to acquire (Brown, Collins, & Duguid, 1989). Situated learning theorists often argue that knowing and doing are not separate. Thus, "learning and cognition… are fundamentally situated" (Brown, Collins, & Duguid, 1989, p. 32). The focus is taken away from the individual, but with this learning theory the focus is on the system (Greeno, 1998). Thus, the relationship between all the elements are important to understanding knowing. A person's values and beliefs are shaped by the communities they participate in, including family and institutions (Greeno, 1998).

Authentic activities are those experiences that would be normal practices of a culture (Brown, Collins, & Duguid, 1989). Learning is about becoming attuned to the constraints and affordances of an activity and a community (Greeno, 1998). Transfer of learning is viewed as the modification of these attunements to other situations (Greeno, 1998). Thus, the learning transfer is based on similarities in the relationships between the person and the environment/context (Bereiter, 1997). One theory that has expanded on the concept of transfer from a situated learning perspective is epistemic frames (Shaffer, 2006). Shaffer (2006) suggests that transfer can occur through epistemic frames, loosely defined as ways of knowing within a culture. Here the learner can participate in knowing in one community and take these new areas of expertise to other contexts. Shaffer (2006) describes this as the "proverbial hats or glasses we don as we take on a variety of identities and perspectives" (p. 232).

Linde (2001) suggests that narrative contains the tacit knowledge (knowledge that cannot be explained) of our social knowledge and that story and narrative are used as a way to bridge the tacit and explicit knowledge, allowing for the tacit social knowledge to be learned. Through the act of storytelling, learners co-construct their knowledge and their identity. This can give learners a sense of agency and expression. Brown and Duguid (2000) explored the role of storytelling within a work environment and found that story was used to preserve and share information. Story was used by technicians to build contextual information and develop the relationships involved in a specific process. The stories act as a repository of this workplace knowledge (Brown & Duguid, 2000). These ideas are extended through distributed and situated ideas of

learning; in that, it is not only our personal relationship, but it is the environment and the tools used that our also influential.

In the current course design, all learning is embedded in the practice of creating a digital story. The stories themselves are from each individual life; however, as they tell them, they become a part of the community. Furthermore, the knowledge and learning is part of the practice of performing the activity of creating a digital story (Land, Hannafin, & Oliver, 2012). Previous research suggests that older adults find leisure and educational activities more rewarding when they are social (Mannell & Kleiber, 1997; Kim & Merriam, 2004). Thus, educational theories and design catering to older adults (and others) may benefit from creating a collaborative, social environment where participants can share life experiences and worldviews. This may allow for sharing multiple perspectives, reflection, and a negotiation of meaning (Land, Hannafin, & Oliver, 2012).

When examining technology and learning and their interaction, it is essential to uncover perceptions and understanding of this relationship. Traditional views placed technology at the forefront suggesting that learners can learn “from” technology; however, constructivist perceptions often consider it more learning “with” technology (Kim & Reeves, 2007). Furthermore, distributed views of cognition have questioned uni-directional relationships with technology and argue that it is a mutual exchange between person and machine (Latour, 1996; Shaffer & Clinton, 2006). Technology comes with its own properties that act upon the human while the human is acting upon it (Shaffer & Clinton, 2006). The affordances and constraints give specific technologies a predilection to influence the world in one way or another (Postman, 1996), while learners also bring their own values, thoughts, and intentions to the interaction. Latour (1996) argues that our interaction goes beyond the immediate. He uses a fence as an example, explaining that if you put a fence up to keep the sheep in, and you walk away, your intention is still embodied in the fence and the interaction with the sheep through the technology remains (the fence). If the mind is considered as distributed, then the relationship between humans and technology is that people interact “with and through them” (Shaffer & Clinton, 2006, p.289). Thus, the relationship could be examined as the combination of tool and learner and what they can do together through a mutual exchange (Shaffer & Clinton, 2006). The different multimedia pieces bring with them different representations of reality and knowledge (Pea, 1994). Thus, choosing the visual representations of story

and the musical accompaniment requires a consideration of what the storyteller wants to highlight.

The next concern which needs to be addressed in any work on educational technology is the values that are brought with the technology and the impact this has. Technology is not that simple since “educational technology is arguably either a very new or a very old phenomenon, depending on one's view of what exactly "technology" comprises (Hoadley, 2004, p.9).” Thus, although technology can be discussed as any tool used by humans (e.g. wheel), in current culture it is often associated with more advanced tools such as the computer. Neither education, nor technology is neutral in its design. Education will either reinforce ideas and culture that have gone before, or open new ideas and the freedom to explore cultural expectations and understanding (Freire, 2000). The word technology is often used to relate to a machine/artefact and excludes the human element; yet, the human element is an important factor. Marx (2010) points out that “by consigning technologies to the realm of things, this well-established iconography distracts attention from the human - socio-economic and political - relations which largely determine who uses them and for what purposes” (p.576). Technology, and educational technology, is not value free. Furthermore, design implementation can have unintended consequences that may have a negative impact on those it intends to help (O’Neill, 2016).

2.1.4. Integration of theory

Ideas from life course theory, narrative theory, and social constructivist views of education all stem from the epistemological constructivist perspective. These theories are often interested in research involving naturalistic settings. There is a wholistic approach that considers context, group, and individual. For example, life course examines a person’s life via their trajectories and the influences on these. It is “the contextual study of lives” (Elder Jr., Johnson, & Crosnoe, 2003, p. 7). Situated learning theory’s core belief is that the context/situation/socio-cultural aspects are crucial to learning (Brown, Collins, & Duguid, 1989). In distributed views, it adds to this, suggesting that knowledge is distributed among people and tools (Lipponen, 2002). The importance of social and cultural aspects is highlighted. Furthermore, the importance in life course theory on social relationships is also seen in narrative and social constructivist perspectives. Life course theory stresses the importance of events (Elder, 1994),

similarly Bruner (1991) discusses narrative in terms of events that occur over time. These narratives influence a person's identity (McAdams & Olsen, 2010). Yet when learners reflect on these stories and negotiate meaning with others there is an opportunity for learning to occur through these interactions. A wholistic approach is taken where the influence and relationship between the learners and the technology is also seen as a reciprocal one.

When examining digital storytelling and older adults, especially where a community of learners is being created, these four theories are useful. They account for multiple influences and examine these in terms of their narrative influence and educational influence. Researchers such as McAdams (2008) often discuss life course theory and narrative theory as interwoven. Within this study there is the addition of an educational technology perspective. These theories converge to form a base for the value of digital storytelling as a learning experience for older adults in that the person must examine trajectories and events throughout their life course to form stories in which the person can make meaning of the events. These stories are reflected upon and influenced by the group process, where they are reassessed and form a space to construct new understandings (Garcia & Rossiter, 2010). When mixed media is used it brings further meaning to the story as the person chooses images, music, videos, but it is also influenced by the technology that they must use to recreate the narrative.

2.2. Older adult cohort

There is a global demographic shift occurring with an increasing number of older adults and decreasing birth rates (WHO, 2015). Many issues and questions arise on what the significance of this shift will be. For example, there is an interest in how this changing demographic will affect workplace, health institutions, relationships, and society (McDaniel & Rozanova, 2011). The World Health Organization (2015) suggests people need to reconsider the life course trajectory and the opportunities that an aging society may have; however, increased longevity does not necessarily correlate with good health. Thus, WHO (2015) has made one of their priorities "To ensure healthy lives and promote well-being for all at all ages through universal health coverage including financial risk protection" (p.2).

2.2.1. Well-being and healthy ageing

Discussions on maintaining quality of life for older adults have received increasing attention among researchers (e.g. Bowling & Dieppe, 2005; Reichstadt et al. 2010). The World Health Organization (2015) defines quality of life as “an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.” Thus, it can be difficult to measure, as it is highly subjective. Furthering the complexity, these measurements can be influenced by multiple factors (Diener & Suh, 1997). A variety of terms have been used to describe maintaining a high quality of life in older adults, including ‘successful aging’ and ‘active aging’. Recently, the WHO (2015) has used the term ‘healthy ageing’ to capture many of these ideas and defines this as “the process of developing and maintaining the functional ability that enables wellbeing in older age” (p.13).

In addition, researchers have also attempted to determine what is important to aging well. Traditional views focused on biomedical considerations such as physical health (see Rowe & Kahn, 1997); however, in recent years a holistic approach has been applied to concepts of aging. For example, researchers have included opportunities for learning, creativity and social engagement in definitions of quality of life (Hanna, Noelker, and Bienvenu, 2015). Astell (2013) points out that it is important to include the value of fun. A qualitative study by Reichstadt et al. (2010) that interviewed 22 community dwelling older adults on their perspectives of successful ageing found that two of the main themes that emerged were self-acceptance/self-contentment and engagement with life including social interactions.

With the increase in the ageing population and the increased life expectancy, theories of healthy ageing throughout the life course and how to maintain and increase well-being become crucial. There has been increased interest in the importance of the social and psychological well-being of older adults (Diener & Suh, 1997). Well-being is not a clearly defined concept yet is a complex construct with many variations (Ryan & Deci, 2001). Ryff (1995) discusses and examines ideas of psychological well-being in which the main indicators are self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. He distinguishes his theoretical version of self-acceptance from Maslow and Rogers, as not only including the

positive perceptions of self, but also an acceptance of the negative. Recently, Seligman (2012) has also conceptualized well-being in the field of positive psychology (Seligman, 2012). For example, Seligman (2012) proposed the PERMA theory of well-being which includes positive emotion, engagement, relationships, meaning and accomplishment. Within many of the theoretical models of well-being, both the social and emotional position of the person is considered. Many researchers also include aspects of personal growth (Ryff, 1995) or meaning and accomplishment (Seligman, 2012).

Programs created to increase social interactions, a sense of engagement with life, learning opportunities, and social well-being are increasingly deemed as valuable to older adults (Cattan et al. 2005). These aspects can be important as they do not simply focus on the negative attributes of age, but also may serve to appreciate and understand the positive qualities of having lived a life. The WHO (2015) action plan on healthy ageing for 2016-2020 identifies five domains that are essential in allowing older adults the freedom to do what they value: mobility, basic needs, to learn and grow, build and maintain relationships, and contribute to society. These factors are considered necessary in creating an age friendly environment. It is important for educators working with older adults to develop programs that are rewarding and contribute to healthy ageing.

2.2.2. Social connectedness

No man is an island, entire of itself; Every man is a piece of the continent, a part of the main. - John Donne, 1627

As marked so powerfully by John Donne (1627), no person is an isolated entity. A person's path will be interwoven with many others throughout a lifetime. These social connections are important in shaping a person's trajectories throughout the life span (Elder, 1994). If older adults suddenly find themselves with a lack of social relationships, it can affect them adversely in many ways, including creating a breeding ground for loneliness and depression (Barg et al, 2006).

Our interactions and social connections with others can act as a buffer from the difficulties of life. Social structures can be examined in a variety of ways, including social capital, social connectedness, social network, and social support. Social capital can be described as the benefits and resources that become available to a person through their

social contacts (Cannuscio, Block & Kawachi, 2003). A study by Theurer and Wister (2010) of Canadians over 65 (n = 4,486) found a highly significant association between social capital and well-being, including a sense of belonging and reported happiness. Their findings suggest that increased social capital may help reduce loneliness and depression. Furthermore, a number of systematic reviews and studies worldwide have found a link between social capital and depression, in that social capital seems to act as a buffer for depression in older adults (Cramm, Van Dijk, Nieboer, 2013; Nyqvist, Forsman, Giuntoli, & Cattan, 2013; Forsman, Nyqvist, Schierenbeck, Gustafson & Wahlbeck, 2012). For example, a study by Forsman et al. (2012) surveying 6838 older adults showed that social capital was effective in maintaining well-being and a positive mental state, including reduction in depressive symptoms. Social capital can also be influenced by various social networks and connections. People who have the largest diversity of connections often have the highest sense of well-being (Litwin & Shiovitz-Ezra, 2011). The reasons for the higher sense of well-being may relate to the different types of socialization, such as social support vs social connectedness. It may also relate to the diversity of age groups interacted with. A rich variety may help to fulfil numerous needs.

One contributor to social capital is a person's sense of social connectedness. Social connectedness can be described as a person's ability to relate to others and the sense of belonging that comes with this (van Bel et al., 2009). As discussed earlier, it has a direct relationship to feelings of loneliness. If individuals feel a lack of belonging, it is easier for them to become isolated as they may not feel they can connect to anyone (Cacioppo & Patrick, 2008). Social connectedness should be seen as separate from social support, as it plays a different role in contributing to social well-being (Ashida & Heaney, 2008). Ashida and Heaney (2008) suggest that social support and connectedness are two different features fulfilling varying needs. Social connectedness fulfills the social need of companionship, the simple act of enjoying another's company. Someone may provide social support, but not accomplish the same sense of companionship (Ashida & Heaney, 2008). Social connections related to leisure, play and fun serve their own vital role in the life course and in the well-being of older adults. Having a sense of social connectedness is important not only for well-being, but it also has an impact on improved health measures (Ashida & Heaney, 2008; Forsman et al., 2012).

Social networks can be discussed as the web of social connections within an individual's life (Ashida & Heaney, 2008). These networks form the areas where an individual interacts and connects with others (Ashida & Heaney, 2008). They can include numerous groups from family, neighbors, friends, acquaintances, health care professions, and any number of other people encountered. Forming these networks can be a good starting point to increasing a sense of social connectedness (van Bel et al., 2009). These networks are often the foundation for where individuals can create feelings of belonging (Ashida & Heaney, 2008). Often the more social ties a person has, the more socially connected they feel (Buckley & McCarthy, 2009).

2.2.3. Digital divide and digital literacy

Technology may provide an opportunity to maintain and enhance some aspects of quality of life and healthy ageing (Levy, Janke, & Langa, 2015; Delello & McWhorter, 2017; Quan-Haase, Mo, & Wellman, 2017). Educational technology may provide an opportunity to help older adults maintain quality of life through providing opportunities for social interaction, collaboration, and learning. Arguably, in turn, these may help to reduce isolation, loneliness, and depression.

In Canada, older adults use the Internet the least of any demographic; nevertheless, they are the fastest growing Internet users (Veenhof & Timusk, 2014). Pew Research Center (2017) conducted a phone survey of 3015 adults in 2016 and of seniors (over 65) and found that the range of computer use in several categories has risen significantly since 2013. For example, seniors with smartphones has risen from 18% to 42% and social media use by seniors is now at 34% in the United States. For those who are wealthy and within the younger age category (65-69), the rates of technology ownership and use is now similar to those in the younger categories. In another study, Cresci, Yarandi, and Morrell (2010) describe a digital divide between two different groups of older adults which they designate pro-nets and no-nets. The no-nets were resistant to using the Internet and were often older, less affluent, less educated, and had poorer health. However, a digital divide may be quite significant for those seniors who are less affluent and within the older age categories.

There is a growing concern that there may be a digital divide between young and older computer users (Cresci, Yarandi, & Morrell, 2010; Friemel, 2016; Pew Research

2017). The digital divide is a term used for the gap of technology use between different demographics (Van Dijk & Hacker, 2003). In the current information society, this can cause increased inequality due to a group not having the same access of information. A survey conducted by Friemel (2016) of 1105 respondents from Switzerland also noted a digital divide related to the ageing demographic, particularly in those over 70. However, it was also found that this divide could be reduced through certain social context and informal learning environments. Manchester and Facer (2015) argue that older adults often underutilize programs that allow for communicating and archiving personal stories; and thus, "their cultural histories and experiences are often less visible in the digital world" (p.246). One approach to lowering the digital divide is to increase older adults' digital literacy skills.

The term 'literacy' originally related to a person's ability to read and write. However, this definition has been extended to a more general understanding of literacy as "competence and knowledge in a specific area" (Oxford Dictionary, n.d.). Thus, digital literacy developed as a way to describe a wide rang of computer skills. Gilster (1997) describes digital literacy as "the ability to understand and use information in multiple formats from a wide variety of sources when it is presented via computers" (in Pool, p.6). The definition, concept, and what should be included has progressed over time but it remains very broad in its inclusiveness (Bawden, 2008). Nevertheless, in a technological society having the knowledge and competence of digital technology can be essential.

Increasing digital literacy in older adults could be an advantage as technology has specific benefits in current society, such as increased access to information and social connections (Levy, Janke, & Langa, 2015; Delello & McWhorter, 2017; Quan-Haase, Mo, & Wellman, 2017). Overall, older adults find the benefits of using information technology outweigh the costs (Mitzner et al., 2010). Various researchers have examined the perceived and actual benefits of computer use among older adults (Gatto & Tak, 2008, Mitzner et al., 2010; Delello & McWhorter, 2017). The main perceived advantages to using computer technology are a sense of connectedness, keeping in touch with friends and family, satisfaction, utility, convenience, and positive learning experiences (Gatto & Tak, 2008; Mitzner et al., 2010). A study by Delello and McWhorter (2017), using iPads found that increasing older adults' digital literacy contributed to an increase in their knowledge, ties to family and connections to society. Additionally, increasing digital literacy may be needed to increase access to health and other services

(Levy, Janke, & Langa, 2015). A study by Levy, Janke, and Langa (2015), found that older adults who had a lower level of health literacy also used the Internet less. Health literacy is defined as “the capacity to obtain, interpret and understand basic health information and services, and to have the competence to use such information and services to enhance health” (WHO, 2015, pg. 75). Thus, improving digital literacy may be important for overall well-being and healthy ageing.

There are several barriers to computer use that may hinder older adults’ adoption. These can range from physical challenges, to concerns of safety, to comfort in use (Pew Research, 2017). Various research suggests that some barriers that older adults face regarding learning new technology include physical and mental limitations, frustration, concerns of Internet safety, and time issues (Gatto & Tak, 2008; Mitzner et al., 2010). Beliefs about computers can affect whether learners seek technology rich experiences, and it is more likely that older adults will learn new technology if they believe it has a benefit (Melenhorst, Rogers & Bouwhuis, 2006). Compared to younger generations, seniors often need assistance in learning new technology (Pew Research, 2017). However, once they are online, they tend to become regular users. Similar results were found with digital game use (Hausknecht, 2013). Thus, it has been argued that providing an opportunity for older adults to develop their digital literacy skills can help to avoid a digital divide and also create a sense of empowerment (Shapira, Barak, & Gal, 2007; Hill, Betts, & Gardner, 2015). Technology engagement and informal learning may be central to the uptake of digital literacy skills and could be an important route for computer education (Selwyn, 2005; Friemel, 2016). Courses that directly teach computer skills to older adults have had some success (Slegers, Van Boxtel & Jolles, 2008); however, other studies suggest that experiential learning may be useful for an increase in skills (Hausknecht, 2013; Hausknecht & Kaufman, 2018). For example, a few surveys of older adult digital game players suggest that an informal approach to engaging individuals in gaining computer skills may be effective (Wang, Lockee & Burton, 2011; Hausknecht, 2013; Kaufman et al., 2015). Playing games may be an engaging approach to developing computer skills as it is fun and learners have control over their learning. Providing older adults with an encouraging environment which is affordable and uses technology in an engaging way can be a advantageous approach to increasing older adults’ digital literacy.

2.2.4. Education, lifelong learning, and older adults

Another aspect that was outlined by the World Health Organization (2015) is that healthy aging often incorporates being engaged with life and that an important aspect of older adults' quality of life is being active learners. One benefit of lifelong learning and cognitive engagement is that it may increase older adults' sense of well-being (Jenkins & Mostafa, 2015) and community engagement (Merriam & Kee, 2014). In a longitudinal study by Jenkins and Mostafa (2015) which examined data comparing older adult participants' subjective well-being with their learning behaviors, they found a significant relationship between learning behavior and reported well-being. Nevertheless, these results only apply to informal learning, including night classes and arts-based groups. Engaging in lifelong learning may also have value as a way to keep older adults cognitively stimulated and mentally active. One of the outcomes in a large study involving 2645 older adults (50 +) conducted by Boulton-Lewis, Buys and Lovie-Kitchin (2006) was that good mental and emotional health had a significant relationship with engagement in learning activities. Previous research working with older adults has found that older adults engaged in a cognitive challenge had better memory than those who were in a control group (Fox, 2015). Older adult learning may not only affect their well-being but may also influence community well-being and engagement (Merriam & Kee, 2014). Community well-being can be seen as a healthy living space for all members of a community.

Many older adults seek out educational experiences (Boulton-Lewis, 2010). However, their motivation and interest in learning is often different than at other times within the life course. Younger cohorts tend to search out more formal learning environments to gain future employment or improve skills. Older adults often choose learning for different reasons. For example, a study by Kim and Merriam (2004) that surveyed 189 older adults who were engaged in lifelong learning found that the main motivation for older adults to seek out learning was a cognitive interest in the content and because of social factors. Furthermore, Lamb and Brady (2005) conducted focus group interviews involving 45 older adults who attended the Osher Lifelong Learning Institute in Portland Oregon to determine what the perceived benefits of attending the classes were. They found that the older adults had multi-faceted reasons for attending, such as enjoying the intellection stimulation, community support, increased self-esteem, and spiritual renewal.

In a review of how older adult learners are portrayed in studies from 1980-2006, Chen, Kim, Moon, and Merriam (2008) found that they were often examined as a homogenous group. They were regularly described as enthusiastic learners, regardless of age. However, there should be caution in portraying older adults as a homogenous group because the variety in age and cohort can be significant. When older adults are encouraged to learn something new (such as technology), then they often need to understand why engaging in the learning would be beneficial; furthermore, the educational experience needs to align with their self-image (Kiel, 2005). They require being treated as self-directed learners (Kiel, 2005; Merriam, 2001; Roberson & Merriam, 2005). This requires incentive and interest (Roberson & Merriam, 2005). When older adults learn new technologies, they often come with pre-conceived ideas and attitudes towards their self-efficacy (Barnard, Bradley, Hodgson & Lloyd, 2013). If they have a negative perception on their skill, and it is too strong, it can be difficult for the older learner to accept learning a new technology; however, a supportive environment may help (Barnard, Bradley, Hodgson & Lloyd, 2013). Learning new technologies and increasing digital literacy may be important for older adults as it may lead to increased health literacy through access to information (Levy, Janke, & Langa, 2015) and social connections (Delello & McWhorter, 2017).

Learning theories that focus on older adult learners are limited and often fall under the field of andragogy. Andragogy is the theory, methods, and practice of teaching adults or helping adults learn (Davenport & Davenport, 1985; Knowles, 1980). Knowles (1980) put forward an approach and theory to designing for adults (andragogy) versus children (pedagogy); however, andragogy is not new. It was first described in 1833 by Alexander Kapp (as cited in Davenport & Davenport, 1985). Although it gained some popularity it had a level of opposition and died out for a century before it re-emerged in the 1920s (Davenport & Davenport, 1985). The term was not always accepted, and some researchers opposed the new field describing it as adding to a dichotomy and creating unnecessary jargon (London, 1973) and unproductive debates (Shore, 2001). Henschke (2011) suggests that the common thread between much of the debate has focused on Knowles' perceptions of andragogy. Knowles (1978) proposes that andragogy has five crucial assumptions: self-concept moves towards being a self-directed person, a growing reservoir of experience to build on, learning is tied to social roles, problem-based knowledge for immediate application; learning motivation is from

internal forces versus external. Knowles (1985) developed four specific principles for adult learning based on these assumptions:

1. Since learners are self-directed they should have a say in the content and process of the learning.
2. Since adults have experience, learning should incorporate and build on this.
3. Learning should be focused on relevant issues related to their lives.
4. Learning approaches should focus on problem-solving versus memorizing.

Merriam (2001) suggests that there are two important aspects to adult learning: andragogy and self-directed learning, differentiating self-directed learning as separate from andragogy. Merriam (2008) acknowledges that adult learning cannot be put into a single theory and approach due to the complexity of the issue.

There is the possibility of further dividing the field and including a category for older adults, geragogy. Geragogy first appeared in an article by Lebel (1978). Although geragogy faces similar arguments to that of andragogy, particularly that of splitting -gogy (leading others) into a third category, Schuetz (1982) argues that geragogy is a useful field since older adults “are a unique population with specialized learning needs,” and these “unique needs justify new teaching methods (p. 339).” At this point, there has been very little research and theory surrounding geragogy. It did not gain prominence in the same way that andragogy did. Similar to andragogy, there needs to be a learner centred approach.

Whether in agreement with the term geragogy or not, the characteristic, purpose, and motivations of the learning demographics are important to consider. The World Health Organization (2015) has also started to discuss the importance that learning plays for older adult learners. Older adults are often overlooked within mainstream teaching (Formosa, 2012). Some research has also begun to discuss education as an opportunity to empower older adults (Creech & Hallam, 2016). A branch of geragogy, critical geragogy, is also gaining some attention (Formosa, 2012). Critical geragogy is influenced by Freire’s (1972) concepts of education and aims to give older adults greater control over their learning and meaning making (Formosa, 2012). It calls on educators to reflect on their own assumptions about older learners and address their prejudices

(Findsen & Formosa, 2011). Furthermore, the approach asks educators to consider the learning environment, approach and whose interests are being met (Formosa, 2012).

2.3. Research on digital storytelling

2.3.1. Definition and history of digital storytelling

A digital story is a story that utilizes multimedia in its expression. Leslie Rule (2010) describes it eloquently as a:

> modern expression of the ancient art of storytelling. Digital stories derive their power by weaving images, music, narrative and voice together, thereby giving deep dimension and vivid color to characters, situations, experiences, and insights. (p.56)

Digital story can encompass a vast area of expertise such as digital game narrative, film, social media and any other aspect where an individual uses multimedia to create a narrative (Klaebe et al, 2007). In its most basic definition, it is the use of technology to tell a story (Robin, 2015). There have also been branches of digital stories such as transmedia storytelling. Transmedia storytelling involves stories that go across different media platforms (Jenkins et al. 2009).

The process of digital storytelling, as used by the StoryCenter and the current research, involves creating a script, storyboarding and incorporating the narrative, photos, videos, music, and sound together to create a short movie. There are few rules regarding what can and can't be used in creating a digital story. Furthermore, digital storytellers do not simply create their stories; they also play the role of editor and producer; making many choices on style, color, pace and other design considerations. Ultimately, digital storytelling is a creative process with the possibility of having a powerful affect on the creator (Lambert, 2013). All choices and decisions are made by the story makers, creating an ambience of their own self-expression within the story presentation. This is important in that it gives digital storytelling a distinct opportunity to have varying perspectives of representing the world that a person lives in (Couldry, 2008). For the purpose of this study, the digital story incorporated a personal narrative, using traditional short story writing approaches such as story arc, combined with digital story considerations such as imagery and sound choices. This style of digital storytelling has been around since the 1990's. Joe Lambert and Dana Atcheley formed a large part

of the drive for its popularity with their founding of the Center for Digital Storytelling (CDS) (Robin, 2008). It slowly gained momentum in the United States over the next while. In the early 2000s, Meadows and Cardiff University in partnership with BBC brought digital storytelling to England (Meadows, 2003). The BBC further took on a project called *Telling Lives* that advertises itself as "Everyone has a story to tell. Technology now allows anyone to tell it in their own way using a basic computer, personal photos, video footage and audio recordings."

At this point the art form has spread throughout many countries and for varying purposes. There are several movements using digital storytelling in indigenous communities, and with this, cultural considerations of story and imagery are incorporated (Iseke & Moore, 2011). Further, they are also beginning to be used as ways for encouraging intergenerational interaction through collaborative stories (Lee, 2012).

Digital storytelling is different from other activities that capture a moment in time, such as home movies. With creating a digital story, the participant has the opportunity to rewrite the story, how they perceive it now, not how it actually was. Pecorini and Duplaa (2017) suggest that narrative gerontology paired with digital storytelling could have some powerful benefits as both narrative work with older adults and digital storytelling, along with their own set of reported benefits for well-being and learning. The act of restorying and adding multimedia may create various benefits and challenges.

2.3.2. Educational use of digital storytelling

"When we get into the habit of recording our stories, we can look at them again, attending to the meanings we have built into them and … to our strategies of narrative description."

Donald Schön (1988, p.26)

There are numerous ways in which digital storytelling may be valuable for education, such as increasing digital literacy, increasing story skills, use in reflective practice, and as a way in which meaning making can occur. Narratives within themselves serve an important role in knowledge exchange and sharing (Linde, 2001). Digital storytelling serves as a learning experience where participants are both diving into traditional structures of writing a story (such as the story arc) while also learning new

technology and how to integrate the two (Czarnecki, 2009). Thus, educators can use digital storytelling to teach many traditional aspects of story writing such as researching a topic, and writing an engaging script and story (Robin, 2008). Further, it is not only the story writing that is explored, but the story telling. The art of story as a tool for educational information and knowledge sharing has long been an important form of knowledge building. The incorporation of an autobiographical narrative allows the learner to combine lived experience with educational motives, such as digital literacy or story structure (Clark & Rossiter, 2008). There are many ways in which narrative and story-based instruction are important in educational curriculum.

Narrative and story-based instruction have long been used in education through a variety of approaches, e.g. “scenario based, narrative based, case based, and problem based instruction” (Andrews, Hull, & Donahue, 2009). In case-based learning, narrative is given as a problem and a solution. In some instances, learners may work through the case becoming a part of it (Andrews, Hull, & Donahue, 2009). In narrative based instruction, story is used to help learners make meaning. This often stems from ideas formulated by Bruner (1991, 1996). This is the form of storytelling instruction around which the current project is designed. Stories are one of the main ways people communicate their understanding of events and share these with others to make sense of their lives (Rossiter, 1999; Bruner, 1996). Garcia and Rossiter (2010) point out that each time a person tells a story they construct new meaning around it.

The digital aspects of digital storytelling also have specific advantages to education such as promoting multi-literacy skills and a deeper understanding of the diverse ways in which we communicate (Barrett, 2006; Robin, 2008). Digital storytelling has the possibility of creating deep learning, or engaging students in higher order thinking (Jenkins & Lonsdale, 2007). To integrate and organize the multiple aspects, and frame these in a meaningful manner, students are required to work with pre-existing schema in their attempt to create the digital story (Garcia & Rossiter, 2010). Creating a digital story involves a negotiation, not only of one’s own version of the events, but as photos and music are considered these also bring their own realities (Hausknecht, 2018; Hausknecht, Vanchu-Orosco, & Kaufman, in press). Such attempts to reconcile the various factors into one coherent form can create puzzlement; and thus, the opportunity for learning. Furthermore, digital storytelling is a form of project based learning. Thus, students learn through the activity of creating their digital story. Project based learning

can be seen to require students to develop various skills such as problem solving, communication, and multiliteracies (Bell, 2010). Project-based learning uses an interdisciplinary approach where the learner is in control of the design and creation of the artifact, exhibiting their creativity and learning (Gomez-Pablos, del Pozo, Munoz-Repiso, 2017).

Multiple literacies and other learning outcomes

Although story and reminiscence have many benefits of their own, the multimedia aspects of digital storytelling allow for further critical reflection. Students increasingly need multimedia skills, digital literacy, and a deeper understanding of technology's role within today's society, and this can be important for older learners too. It is suggested that 21st century skills such as digital, global, technology, visual, and information literacy are important for today's learners (Robin, 2008; Robin, 2015). Barrett (2006) suggests digital storytelling is an opportunity to converge four student-centered outcomes: engagement, reflection for deeper learning, project-based learning, and integration of technology into education.

Various research on digital storytelling has focused on its use in educational settings, whether K-12 or higher education. In the K-12 system, digital storytelling has been touted, and has some evidence, for its use in increasing literacy and digital literacy skills (Behmer, Shmidt, & Schmidt, 2006, Sadik, 2008). The process of creating a digital story may increase students' visual and multimedia literacy by requiring students to work through a multimodal design (Jakes & Brennan, 2005; Sadik, 2008). For example, in a study by Sadik (2008) involving two schools in Egypt that participated in a study where eight teachers were chosen. Each of these chose one of their classes (35-40 students) to integrate digital storytelling into the curriculum. Using rubrics and questionnaires, Sadik (2008) evaluated student's level of engagement in the activity, quality of student's stories and teacher's views. They found that students were engaged with the projects. Furthermore, they found that the digital story process provided a unique opportunity to gain ICT and digital literacy skills through the creation and editing process. For older adults, these could be crucial as these skills play an important role in access to health services, connecting to family, and information services.

Beyond digital literacy, many studies have found various learning outcomes from incorporating digital storytelling into the curriculum (Yuksel, Robin, McNeil, 2011; Yang &

Wu, 2012; Thang et al., 2014; Hung, Hwang and Huang, 2012). In a study by Yuksel, Robin, McNeil (2011), a survey was sent to educators around the world who used digital storytelling, asking them about their perceptions. Just under half of the 154 respondents suggested that digital storytelling allowed for improvement in subject knowledge, writing, presentation, and technical skills. However, other learning outcomes were also added to the list suggesting digital literacy skills, social skills, and reflection were also improved. In a mixed method quasi-experimental study by Yang and Wu (2012) of 110 10th grade students in an English course, they found that students in a digital storytelling course compared to a lecture course did significantly better in regard to their motivation to learn, critical thinking, and English achievement. The qualitative interviews confirmed this finding with further details of how the process required increased critical thinking and reflection. In another study by Thang et al. (2014), they found that using digital storytelling in an undergraduate course, English for academic purposes course, was not only useful for increasing ICT skills, but was also valuable for communication and creative thinking. The fact that students had to work both collaboratively and independently in the development of their stories was noted as one of the main advantages. An experimental study by Hung, Hwang and Huang (2012) using project based digital storytelling with 117 grade 5 students, reported a number of education outcomes. Both groups used a project learning approach; however, the experiment group used digital storytelling. It was found that using digital storytelling improved student's attitude, motivation, problem solving, and learning.

The learning outcomes outlined in Yang and Wu (2012), Thang et al. (2014), and Hung, Hwang, and Huang (2012) highlight the potential of digital storytelling to have a number of benefits and enhance learning experiences in formal classrooms highlighting their ability to increase 21st century skills. However, these are often discussed in relation to the skills being important for the workplace (e.g. Thang et al., 2014) with a focus on younger generations. Yet, 21st century skills, and those that may emerge through a digital storytelling project, can be relevant for different age cohorts and different people in various ways.

The concept of 21st century skills is very broad. It is often used as an umbrella term for the competencies required in today's workforce and to be effective citizens in a changing society (Dede, 2010; Ananiadou & Claro, 2009). These discussions have largely centered around formal education at the K-12 and university level. The focus on

21st century skills has largely been focused on the needs of business versus the needs of a harmonious society (Ananiadou & Claro, 2009). These skills are often discussed as those that youth need; however, older adults are also a part of society and the changes that occur affect them.

Digital storytelling may also increase the learner's feelings of self-efficacy in using technology. Feeling an increased sense of efficacy towards technology often increases adoption of new technology (Heo, 2009). For example, Heo (2009) examined 98 pre-service teachers' attitudes towards educational technology before and after a digital storytelling assignment was included in a course. The students were required to create a digital story using Photostory on "Why I want to be a teacher?" In a quasi-experimental design, the researcher found that the teachers had significantly increased efficacy rates from pre- to post-survey. Furthermore, their attitudes towards using technology within the classroom changed after exposure to digital storytelling. In the context of older adult learners, increasing technology efficacy can be important since technology provides a place for accessing health and social services, while also having other beneficial uses such as connecting people to entertainment and social venues (Delello & McWhorter, 2017). In Heo (2009), the focus was on changing the attitudes of teachers and educational technology. Once again, older adults are not necessarily seeking learning experiences for career advancement, but for personal reasons. Thus, the creation of a digital story requires a personal motivation.

Developing digital literacy skills and increased computer confidence is important for the ageing population. There are many benefits to being computer literate. For example, increased internet skills can also be positive for searching for health-related information and social services (Baecker, Moffatt, & Massimi, 2012). A review by Wagner, Hassanein, and Head (2010) on older adults' computer use found that the main reported reasons for using technology is for social connectedness and communication, health information, learning experiences, and leisure and entertainment. All of these can be important aspects to help maintain quality of life. The value of 21st century skills and digital literacy discussed by researchers should not be limited by age and can be beneficial skills for older adults. Digital storytelling may be a way to engage older adults in digital literacy skills through project-based learning (Hausknecht & Kaufman, 2018).

In theory, digital storytelling would be a good way for older adults to gain these skills. There are a few aspects that differ from gaining these skills from younger learners. Digital technology is often a part of the younger generation's daily lives; whereas, not all older adults will have this experience. At this point, there has been no specific research into using digital storytelling to increase older adults' digital literacy, nor has there been a program developed that can meet the varying needs of older adult cohorts.

Reflection and reflective practice

Digital storytelling has also gained a reputation for its ability to promote reflective practice in various fields such as pre-service teachers (Long, 2011; Tendero, 2006; Kearney, 2009) and nursing (Stacey & Hardy, 2011). Reflective practice is a process where a learner reflects upon their actions and continually learns from these reflections (Schon, 1987). With regards to using digital storytelling as a tool for reflective practice, the reflection may be related to those creating the digital story or those viewing them.

Various studies have examined digital storytelling as a tool for reflective practice (e.g. Kearney, 2009; Long, 2011; Stacey & Hardy, 2011). Stacey and Hardy (2011) conducted a study with newly qualified registered nurses. Their aim was to tackle some of the difficulties that occur when nurses are newly in the field and confronted with distressing situations. These situations can cause a level of "reality shock". To attempt to address this issue, Stacey and Hardy (2011) worked with community partners to explore the use of digital stories as a way for nurses to reflect and process these events. Creating digital stories was found to help nurses through the process of adjustment and give them the space for openly expressing their experience. However, there was also a concern of how these expressions would appear to others. In the next phase of the study, they shared the stories created by the new nurses with final year nursing students who were about to become newly qualified nurses (Stacey & Hardy, 2011). Sharing others experiences through the digital stories allowed the students to reflect upon their own fears and empathize with the storyteller with the realization of the authenticity that was present within the stories.

Digital storytelling has also been used as a process of reflective practice with student teachers and practicing teachers (Tendero, 2006; Kearney, 2009; Long, 2011; Yuksel-Arsland, Yildirim, & Robin, 2016). Reflective practice has been an important part of many pre-service teacher's learning program. In a study by Kearney (2009), digital

storytelling was used to package pre-service teacher's learning experiences (n=11). This was presented as an option for the portfolio while others used the traditional portfolio presentation. The digital stories provided a place to organize learning artifacts and explore the learning journey in a story structure. Based on Boud, Keog, and Walk's model (1985) of reflection, Kearney (2009) found that students returned to the experience and attended to emotions that arose. Through survey questions and interviews, student teachers reported that the digital story portfolios were an opportunity for continued reflection and to see their progression of a teacher identity.

Within community organizations, digital storytelling has also been used to build reflection in community project and service (Freidus & Hlubinka, 2002). For example, Freidus and Hlubinka (2002) discuss a project in which digital storytelling was used at the Center for Reflective Community Practice (CRCP) at MIT with the North End Outreach Network (NEON). Community health advocates chose an issue they had witnessed with their work in the community and created a digital story of the experience. Many of the participants had not considered the multiple aspects that arose and how they affect their desire to become community advocates. The collaborative process allowed participants to learn more about each others' experiences and created a community and connectedness over the three-day workshop. These were also shown within the community, connecting advocates to clients and the neighbourhood. Although many older adults may not be at the stage in their life where reflecting on work practice is a priority, the reflective capacity of creating and sharing digital stories have other benefits.

2.3.3. Identity, reminiscence, and digital story

> "It's like everyone tells a story about themselves inside their own head. Always. All the time. That story makes you what you are. We build ourselves out of that story."
>
> *Patrick Rothfuss, The Name of the Wind*

Narratives are embedded within our social interactions and relationships where they are shared, reassessed, reshaped, and then retold (McAdams, 2001). Our personal narratives, and retelling these, are deeply intertwined with our sense of identity. Each time an individual tells their story they re-assess their relationship to the event. Thus, the

activity of sharing stories, and then spending time reflecting upon them, may contribute to a deeper self-knowledge (Birren & Deutchman, 1991). For older adults, who have extensive lived experiences, storytelling may provide an opportunity to reflect upon events and consider the lessons learned over their lifespan. Furthermore, when life stories are shared, they become a valuable communication device as they create an opportunity to understand others in the context of their experiences. Norrick (2009) suggests that older adults may not be overly concerned with presenting one single coherent identity, but due to the many different experiences through their lives, and depending on memory, they may have more than one identity and these may be conflicting. Furthermore, Manchester and Facer (2015) suggest that older adults may recount events that occurred in the past with more vivid interest than those occurring recently.

Previous research on storytelling and older adults examined the effect of recalling memories of past events and sharing them through autobiographical narratives and reminiscence (Birren & Deutchman 1991; Bohlmeijer et al. 2007). Birren and Deutchman (1991) propose that sharing autobiographical narratives have several positive effects for older adults such as developing a stronger identity, increased self-esteem and meaning in their lives. Reminiscence is the process of recalling events in life to help patients resolve personal issues and has advantages to socio-emotional health (Bohlmeijer et al. 2007). A review by Bohlmeijer et al. (2007) on reminiscence research for older adults revealed that reminiscing had a moderate effect on life-satisfaction and well-being. In another example, Meléndez Moral et al. (2015) conducted a study with older adults using integrative reminiscence. In this method of reminiscence participants recall events and work through integrating their past and present to form meaning. The study was conducted with 34 participants who experienced eight reminiscence sessions. Participants filled out a pre- and post-sessions questionnaire. The results suggested that integrative reminiscence led to positive outcomes of increased self-esteem, life integration, life satisfaction, psychological well-being and reduced depression. However, an initial study on reminiscence in a natural setting (occurring in everyday relationships) found a positive relationship with life satisfaction (Demiray, Mischler, Martin, & Knight, 2017). These studies have been done with a specific therapeutic benefit being studied. Although the digital storytelling course was not designed as a therapeutic activity, it does

require personal reflection upon memories and negotiating with these to create an artefact. The informal telling and sharing of stories may also create some benefit.

Digital storytelling may also serve in exploring, engaging and sustaining identity (Stenhouse, Tait, Hardy & Sumner, 2013). For example, in a study by Stenhouse, Tait, Hardy, and Sumner (2013), the researchers worked with seven patients with early stage dementia and other cognitive and functional difficulties to create digital stories. The workshop was held over four consecutive days with four facilitators guiding the process. Reflections and participant comments were recorded, and they examined the data in terms of engagement: Engaging with story, engaging with doing, engaging with others. By the end of the study, it was found that participants became more social. Furthermore, the digital story experience allowed for specific creative affordances that help to sustain a sense of identity.

Digital stories often give us a way to revisit our personal narratives. However, in revisiting these and by adding multimedia, the creator may experience a variety of juxtapositions of identity and being and not being; for example, of being a mother and not being a mother (Brushwood-Rose, 2009). Some researchers suggest that digital storytelling allows individuals to represent themselves through their narratives (Hull & Katz, 2006; Lennette, Cox, Brough, 2013). Hull and Katz (2006) propose that the various multimedia texts, such as images, narration, and music, allow the creators to reconceptualise their lives.

2.3.4. Digital storytelling giving a voice to the silenced

> "Never be bullied into silence. Never allow yourself to be made a victim. Accept no one's definition of your life but define yourself." - *Harvey Fierstein*

From the start of digital media and the Internet, there was the possibility of voices that are often unheard having an avenue to share their story. This has opened an opportunity for activism and shining light on those that are in a disadvantaged situation (Kimotho, 2016). The cross-over between using digital stories as a learning tool and a community tool has often been seen through projects where students are working with disadvantages to create stories (Militello & Guajardo, 2013) or the stories are used specifically to educate. Couldry (2008) argues that digital storytelling may be a way to

include marginalized voices within the dominant political and social narratives. Voice, in its traditional sense, can also be amplified by the multimodal aspects of digital storytelling; thus, the addition of visual aspects (photos, videos) and sound (music, effects) may provide an opportunity to amplify the individual's voice and impact (Gubrium, Krause, & Jernigan, 2014). Digital storytelling has also been used as a tool to help shine light on human rights issues and give a voice to those who are often silenced (Militello & Guajardo, 2013). For example, a project called *Silence Speaks* gives those individuals who may have experienced violations of human rights an opportunity to express themselves. In turn, these narratives are then shared globally in strategic places to try to promote human rights, equality and health (McLellan, 2007). These can be shared locally or globally.

Digital storytelling has also been used with refugees, giving them a tool to express their narratives (Sawney, 2009; Lenette, Cox, & Brough, 2013). In the project Voices Beyond Walls, researchers worked with youth in refugee camps creating digital stories (Sawney, 2009). The stories created allow youth to express some of the loss and challenges they underwent as refugees. The multimodal narrative process and aesthetic characteristics in the visual and sound options allowed storytellers variety in their choice of expression. These stories were shared throughout the community and at universities to shine light on the issues that occur within the lives of refugees. In an ethnographic study by Lenette, Cox, and Brough (2013), they worked with three African refugee women who had migrated to Australia. All three were lone parents who were faced with the challenge of a new country. Creating the digital stories allowed the women to reflect on their challenges and personal resilience. Other benefits were in the sharing of the stories and in having them recorded as a legacy for their children to understand the beginnings of being in a new country.

Digital stories may allow viewers to examine another perspective. A study by Gachago, Condy, Ivala, and Chigona (2014) used digital storytelling with 27 pre-service teachers in South Africa and examined the use of using digital stories to address Nussbaum's criteria for creating healthy democracy and their personal role in perpetuating or resisting social injustice in society. They found that the creation and sharing of these stories allowed a space for students to look at the world through another's eyes, created emotion and empathy, addressed stereotyping, and a concern for others. As Rappaport (1995, p. 796) argues:

> For many people, particularly those who lack social, political, or economic power, the community, neighbourhood, or cultural narratives that are available are either negative, narrow, "written" by others for them, or all of the above.

Sharing stories and invoking emotions in the listener can create a relationship or binding between storyteller and listener (McDrury & Alterio, 2003; Stewart & Gachago, 2016).

Digital storytelling may have the ability to comment on life and society through existing as a form "of verbal art, digital stories reposition both authors and the texts (words, images, music, voices) they appropriate and "recontextualize" (Hull & Katz, 2006, p.33) Digital stories may allow for self-representation instead of societal stereotyping (Lundby, 2008). In a study by Vivienne (2011) working with transgender digital stories it was argued that digital storytelling gave a voice to the trans community. Normally, representation of "trans" is done by those who are not trans, and thus, the population is often mis-represented. Vivienne (2011) suggests that the three transgender storytellers within the study challenge normative ideas of gender in new and radical ways.

Some studies have shown that caring for older adults has suffered from negative stereotyping (Brand et al. 2006). Ageism is a prejudice against age and can encompass both negative and positive impressions (Nelson, 2005). Older adults have sometimes been subjected to ageist views (Cuddy, Norton, & Fiske, 2005). Ageist views are often more acceptable than other forms of prejudice and this can be seen through societal facets such as media representation, workplace, and institutions (Nelson, 2005). Limited intergenerational contact may be one contributing factor to ageism (Hagestad & Uhlenberg, 2005). Increasing intergenerational relationships may help to ease some of these perceptions (Hagestad & Uhlenberg, 2005; Nelson, 2005). Furthermore, allowing older adults to represent themselves through media (such as digital storytelling) may help to mediate stereotyping. Moreover, stories have the capacity to change peoples' perceptions and at times prejudices (Phoenix & Griffin, 2013). Digital storytelling may be a great way to facilitate intergenerational sharing of stories as it makes them accessible to people's everyday activities (Chonody & Wang, 2013).

2.3.5. The value of sharing stories (Viewer impact)

"If history were taught in the form of stories, it would never be forgotten."– *Rudyard Kipling*

The experience of storytelling is not something that happens in isolation. It is often created and told for a viewer/listener. Sharing stories can transpire in casual social situations where the storyteller shares a brief recounting of a life event or short episode, and the listener contributes through listening and reacting (Pasupathi 2001). The listener's reactions are then interpreted by the teller and incorporated within future stories. Both storyteller and viewer are affected by the story, as Ochs and Capps (1996) posit:

> Whether or not a narrative offers a resolution for a particular predicament, all narratives, through dialogue, action, and reflection, expose narrators and listener/readers to life's potentialities for unanticipated pain and joy. Herein lies the spiritual and therapeutic function of narrative activity.

Traditional storytelling and digital storytelling may be a way to share perspectives and realities. This could elicit empathy for the teller by requiring the listener to imagine the experience within a specific context and bring their own understanding to this. Sharing stories, and invoking emotions in the listener, can create a relationship or binding between storyteller and listener (McDrury & Alterio, 2003; Stewart & Gachago, 2016). With digital stories, it is not simply the narratives but the other media that also have the potential to impact the viewer. For example, a study by Brand et al (2016) used photo elicitation to create discussion between ten nursing and medical students about working with, and attitudes towards, older adults. These reflections included promoting links between past, present, future; attitudes towards ageing, and reframing how they view older adults. The study found that the photos challenged students' assumptions about ageing and working in geriatrics. It also created an opportunity for reflection and humanizing the experience.

Multimedia stories may also affect viewers through allowing them to reflect on their emotional responses to the story, and at times the storyteller (e.g. Christiansen 2011; Loe 2013; Stacey & Hardy 2011). In a phenomenological study, Christiansen (2011) sought to explore how patient's digital stories influenced nursing students. Twenty students ranging in age from 22-41 were chosen from a third-year

undergraduate course to participate in the study. All students had experienced patient digital stories in a class and 40-60 minute interviews were conducted to explore the phenomenon. Christiansen (2011) found that the digital stories were an opportunity for learning, reflection, transformation, and as an emotional experience. Consequently, it was seen to serve as an opportunity to develop more patient-centered care. In a study by Waycott et al (2016), where three housebound participants created digital stories, they found that the stories created self-reflection and an emotive response in the audience. However, others did not relate to the stories.

Although limited, there have been a few studies that have looked at the impact of digital stories in intergenerational contexts (Loe, 2013; Lee, 2012; Flottemesch, 2013; Hewson, Danbrook, and Sieppert, 2015). For example, in a study by Lee (2012) which examined a 15-week course where students went out to elders in the community and filmed their stories each week found that the activity had a positive effect. By the end of the project students had taken on an altruistic approach, wanting to honor the elders' stories in their videos. It created empathy and changed initial ageist views. In another intergenerational study by Hewson, Danbrook, and Sieppert (2015), university students collaborated with older adults to create a digital story. This study revealed that both the older adults and students gained a better understanding of each other. Further, the students proposed that digital story co-creation would be an effective way to raise awareness about older adults' issues.

2.3.6. Older adults as digital producers

One of the touted benefits of digital storytelling is that it allows learners to become digital producers of technology versus simply being consumers (Burgess, 2006). Thus, it allows anyone to write and produce their own story and create a short video. Klaebe et al. (2007) describe how new media tools can challenge traditional roles such as "online and offline; public and private; local and global; and collective and networked" (p.3). Digital storytelling may allow older adults to be content producers using their life history and multimedia to create their story. The short videos created can be distributed amongst a small local group (such as family) or a wider community. This can be very important for older adults for gaining an increased sense of efficacy. In previous studies introducing older adults to technology, some found it leads to an increased self-efficacy and socially connected (Shapira, Barak, & Gal, 2007).

When given the chance, older adults seem to embrace the opportunity to be content producers (Waycott et al., 2013). In a study by Waycott et al. (2013) using a program called *Enmesh*, they found the seven older adults were engaged and happy to share. Participants could share photos, and comment, tell stories, and discuss with other older adults. Although not specifically a digital story in the way that it is considered in this thesis, the study emphasized the social benefit and creative expression older adults gained through sharing photos and stories showing promising results for older adult multimedia sharing. However, it leaves room for examining the effects where older adults are interacting intensely with one story, creating a finished video.

2.3.7. Story as Legacy

"What the next generation will value is not what we owned, but the evidence of who we were, and the tales of how we loved."

Ellen Goodman

The need for elders to pass down wisdom in the traditional sense is becoming less valued in a technological society. For example, traditionally a grandparent may play an important role in teaching the young specific survival skills such as salmon catching among the Pacific Coast tribes (Cruikshank, 2013). These were important survival skills and having such knowledge was imperative to future generations. Yet, with the dispersion of families and plethora of information across the internet, these traditional roles are not as necessary to survival (Cruikshank, 2013). However, storytelling can still play an important role in cultural understanding. Cruikshank (2013) suggests that older adults may play a valuable role in reminiscing and reflecting on their stories. These create legacy, allowing society to reflect on the past through an individual's lived experiences.

The older adult role of storytelling and passing down wisdom is still observed to some degree. For example, a study by Montepare, Kempler, and Mclaughlin-Volpe (2014) examined stereotyping of various age groups by their recorded voice. Although some negative perspectives occurred, such as older adults seeming weaker and less engaged, they were also perceived as good storytellers with a higher level of wisdom. Since all age groups read the same passage, this was observed to be something within the quality of older adults' voices. Older adults have shown some interest in sharing the

experiences they have learned and preserving these as a legacy (Manchester & Facer, 2015).

A legacy is defined as “an amount of money or property left to someone in a will,” or “something left or handed down by a predecessor” (Oxford Dictionary, n.d.). What is valuable to individuals is not always a financial inheritance but may be a piece of history or an heirloom. Being able to leave a legacy may help older adults feel they are keeping their “presence” alive through the artefact, even after death (Wallace, et al. 2013). With the case of a digital story, older adults can leave a piece of who they are, a lesson they learned, a piece of family history. Older adult story creation can be considered a way to share their life experiences, personal values, and a piece of who they are. Moreover, if an artefact is created from the sharing of the narratives, such as in the form of a written story or a recording, they may be passed on to create a legacy (Birren & Deutchman 1991). Digital media could be a useful approach to storing and preserving the digital legacies of older adults (Sherlock, 2013). Furthermore, this allows for storage and preservation in multiples places; therefore, older adults’ digital stories could be conserved and easily shared.

Digital storytelling is increasingly being used as a way to preserve cultural knowledge (Cunsolo Willox et al., 2013; Iseke & Moore, 2011). Digital stories are a new way to explore oral history. They have been used as an approach to create public histories (Klaebe et al., 2007). A study by Klaebe et al (2007), exploring digital stories as a multimedia approach to oral histories, found digital storytelling an engaging approach to the preservation of history. Within a digital story, a story is preserved. The artifact can be shared and stored for future generations. Thus, digitizing a person’s history can be leaving a legacy for family and others (Birren & Deutchman, 1991).

Manchester and Facer (2015) report on two studies examining digital curation through the University of the Third Age. One consisted of data from three workshops where participants mapped their lives and learning experiences, involving 45 adults and included 5 individual case studies. In the first study, they gave the participants an iPod and Evernote and allowed them to capture photos and events over the week. In the second study, one of the researchers worked with community film makers to create a film of first generation Caribbean immigrants who worked with an artist to create a film of their shared history as immigrants. The main questions they examined within the paper

were the different motivations for curation of life stories, the strategies used for collecting, choosing and making sense of the life stories data, and ethical issues of being assisted in the process (Manchester & Facer, 2015). They concluded that one of the main consistencies was that older adults were interested and motivated by being able to share their knowledge and understanding with other generations. This is important as it suggests that older adults are not necessarily simply motivated by personal production. Second, they concluded that digital curation is never completely digital but material artefacts were important, as were interactions. Finally, older adults should play a meaningful role in the editing of their films so as to represent them accurately. This study leaves some further areas for exploration, such as the possible digital skills, 21st century skills, and other benefits that could be gained from creating digital artefacts.

A study by Waycott et al (2016) with three older housebound adults found that they also cherished and used material artefacts. They found the participants were eager to tell their story in their own way. However, at times there were conflicts between creating an authentic story and addressing the needs of various stakeholders and audiences. The role of leaving a digital legacy is not always beneficial. There are times when family and others may not want to remember a specific time. Having these incidents brought up through multimedia, where it all comes alive not only as a narrative, but as a visual, can be hard (Singhal, et al., 2018).

2.4. Summary

Life course theory, narrative theory, and social constructivist learning theory are all valuable theories to consider within the digital storytelling course case study. Life course theory examines the life course, including the trajectories and events and how these are influenced through socio-cultural factors (Elder, 1994). Narrative theories examine how narratives are used to make meaning of life and identity (Bruner, 2004; McAdams, 2008). Social constructivist learning theories are interested in the way that learning (meaning making) occurs within social collaborations where a knowledge building community is created (Scardamalia, & Bereiter, 2006); and taking this further into a situated perspective how the context and relationships create a space of knowing (Lipponen, 2002). Furthermore, how this understanding is distributed across people and artefacts (Lipponen, 2002). These theories overlap in important ways, such as an emphasis on the socio-cultural influences and meaning making that occur throughout the

life course. Creating educational opportunities for older adults is important for generating occasions to enhance well-being, build connectedness, improve digital literacy, and create an age friendly environment to build healthy communities (WHO, 2015). A digital storytelling course may allow older adults to explore their lives, become digital content creators, make connections, and share their lived experience and the knowledge acquired during these times with others. Storytelling offers an important opportunity for this to occur, as it explores life lessons within the context they occurred, while providing the storyteller with the freedom to reflect from a future point in time.

Although there are limited studies on using digital storytelling with older adults, the research on digital curation (Manchester & Facer, 2015) and reminiscence/life narrative work (Bohlmeijer et al. 2007) demonstrates interesting insights into the possible benefits. Furthermore, research on digital storytelling with different age groups and populations have shown that it can be an effective way to increase digital literacies and other educational outcomes (Behmer, Shmidt, & Schmidt, 2006; Sadik, 2008), including being useful as a tool for reflection (Jenkins & Lonsdale, 2007; Barrett, 2006). Reminiscence and storytelling may also be beneficial for well-being and exploring identity (Hull & Katz, 2006). In addition, digital stories are easily shared and the stories may have an impact on viewers (Christiansen, 2011) and build awareness of those who may be misrepresented or silenced (Militello and Guajardo, 2013). Creating a digital artefact may also have specific advantages in being able to connect to others. The artefact can be used as a legacy, to be passed on to family and friends. It can also be used as a way to share experiences with the possibility of it benefiting both the storyteller and the story viewer. The viewer may empathize with the teller.

2.4.1. Gaps in the research

Previous research examined the educational benefits of digital storytelling in formal settings, including gaining 21st century skills in K-12; however, this aspect does not seem to be examined in less formal settings where the purpose of education is for lifelong learning (Table 1). The value of increasing the digital literacy skills of older adults has been discussed (Levy, Janke, & Langa, 2015), but key aspects such as motivation to increase these skills (especially for those with limited experience) is an important aspect. There have been no studies that examined the unique affordances and possible constraints of digital storytelling to increase older adult literacy and motivate them to

learn these new skills. Furthermore, digital storytelling could have other benefits to lifelong learning.

Table 1 Gaps in Research

Research	Findings	Gaps
Digital literacy and learning outcomes of digital storytelling (Behmer, Shmidt, & Schmidt, 2006, Sadik, 2008; Yuksel, Robin, McNeil, 2011; Yang & Wu, 2012; Thang et al., 2014; Hung, Hwang and Huang, 2012)	Used in formal school setting it showed an increase in 21st century skills (such as problem solving and digital literacy)	Digital storytelling for lifelong learning. What are the possible benefits of a digital storytelling course towards the 21st century skills and digital literacy of older adults who attend the program for different purposes than formal education? What are the educational gains of creating a digital story within a 10-week course for older adults? For example, they don't need to take the course. They will only do so if they see personal value of the learning experience.
Reminiscence (Bohlmeijer et al. 2007)	Reminiscence as therapy has a positive effect on older adults' well-being. Storytelling helps to strengthen identity.	Reminiscence is seen in formal settings for older adults as a therapy. What are the specific effects of a group sharing experience when it is simply providing a venue to explore with others, not being guided in their restorying? (Not in a therapeutic setting). What are the effects of multimedia restorying? (needing to choose images and sound for the specific story)
Digital producers, sharing content (Waycott et al 2013)	Concern with design and evaluation of application for older adults (Enmesh)	What are the effects of a course where older adults focus on one event and create a single story that takes a longer amount of time and specific choices on what images and sound go with their vision of the story?
Digital curation (Manchester and Facer, 2015)	Examined motivations, strategies used, and ethical issues.	What are the possible emotional, cognitive, learning, and social benefits that combining storytelling and multimedia learning could afford to older adults?

Furthermore, reflection on life and reminiscence is a large area of exploration. Previous findings (Bohlmeijer et al., 2007) would suggest that reflecting on life is a powerful approach to transformation; however, there are limited studies exploring the role of adding digital technologies to this activity (Table 1). There have been studies looking at older adults' curation and using these in their stories, but not through the process of examining one specific story. Sharing stories within a story circle and putting these together could form a unique opportunity for shared experience. In creating a digital story, the participants must work with one event over an extended period of time. Furthermore, as the course is an educational experience and not intended to be therapeutic, the extent to which it may have an emotional or therapeutic effect is not known.

Manchester and Facer (2015) examined two previous studies they conducted to answer some questions related to older adults as digital curators. However, they did not explore the specific affordances and constraints of requiring older adults to be multimedia producers. In the one study, it was film makers; and in the other, participants curated their lives. Hopefully, the current study will expand on the understanding gained about older adults as digital producers. Furthermore, our focus is on education and giving older adults specific skills through a digital storytelling course. The participants in our course start with the story and then find the media pieces (although it is a somewhat iterative process). Last, whereas they focus on the motives, practices, and ethical issues of digital curation practices of older adults, our study will expand on the possible socio-emotional and cognitive benefits of participating within a digital storytelling course and what challenges are faced.

Overall, the gaps within the literature are related to the lifelong learning of older adults and the role that digital storytelling could play. Many of the educational studies focus on the education of younger cohorts where the purpose is very different and the learners' motives are different (Table 1). Much of the literature on older adults as digital producers comes from examining their choices, designing tools, and the ethical issues involved. It does not focus on the instruction of new technology, nor does it focus on the structure of the story over an extended course where other older adults provide feedback and observe the transformation of each others' story.

Within the current project, the researchers aimed to explore the experience of older adults who took a course where they created a digital story in a group learning environment. Given the many possible benefits and outcomes of working through the process, it should provide further insight into sharing and creating digital narratives of lived experiences. As an educational designer, it will also provide insight into the design for older adult learners working with story and technology. Since there is no requirement for digital literacy skill, it can also provide insight into some of the challenges and struggles and what motivated older adults to keep going.

Chapter 3. **The digital storytelling course**

My initial role within the project was to design, develop and evaluate the program. Furthermore, to understand the course and participants experiences a description of the course is provided for contextual purposes. Thus, this section will cover some of the initial findings and provide a description of the course.

The digital storytelling course was designed through research informed practice. The course design focused on combining information gathered from StoryCenter (previously The Center for Digital Storytelling), particularly the Digital Storytelling Cookbook (Lambert 2010), other digital storytelling research (Robin, 2008; Ohler, 2006), practices inspired by creative writing methods (my undergraduate experience and English teacher experience), and film approaches to multimedia. This process was refined and the end trajectory appeared as an integrative process that considered the best way to structure the activities each week (Figure 2). Thus, participants find their stories, share their stories, create a script, a storyboard, record their narrative and then add images and sound.

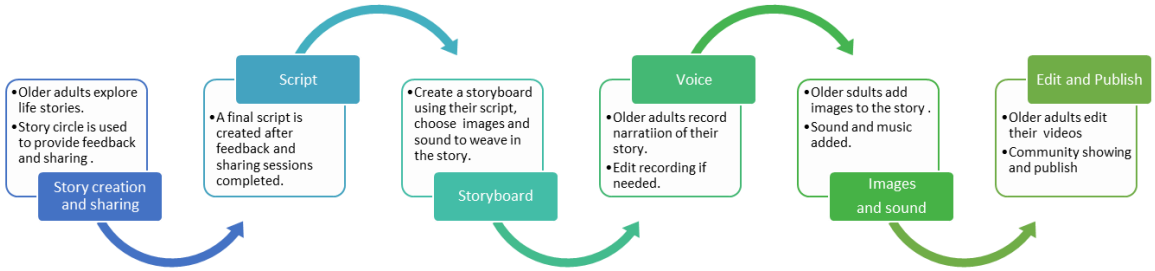


Figure 2 Process of digital storytelling with older adults

The course was designed with a social constructivist view of learning as its theoretical basis. This meant participant interaction, knowledge building, sharing and feedback (Jonassen, 1999) were important aspects to the course. With these principles in mind, the digital storytelling course for older adults was designed with two integrated phases: story creation and digital creation. The theory behind breaking the course into two sections that are woven together with examples, theory, and personal stories is that the course aimed to explore individual stories, while also providing an opportunity for building social connections. Furthermore, the first goal in digital storytelling is to facilitate

learners into becoming storytellers. A good story is the groundwork to creating an effective digital story. The second goal is to develop older adults' digital skills to enhance their story with multimedia (Ohler, 2006).

The course was designed to create sharing experiences to enhance community, social connection, and knowledge construction; however, each participant had their own individual digital story they worked on. During the course, learners learned about story arc and development. They were provided with many opportunities to share ideas, and receive and provide feedback on the drafts of their stories. This was designed to create a writing group environment that encouraged participants to share narratives and get to know each other before working on the computer. Following story creation, participants added multimedia aspects to their work combining voice, images, music, and sounds to enhance their narrative (Figure 2). Once participants began working on the computers, the focused sharing sessions and social opportunities became limited as participants spent increased time on their personal project, adding the multimedia aspects. However, since the early collaborative environment was established, participants were encouraged to provide peer feedback and support each other.

Table 2 Weekly course activities

Session	Activity
Week 1	Introduction to the study and the course
Week 2	Story writing and sharing ideas
Week 3	Considering the digital, multimedia aspects, demo WeVideo
Week 4	Sharing stories and receiving/providing feedback (Story circle)
Week 5	Images and Storyboarding, create a storyboard
Week 6	Voice and recording the narrative
Week 7	Add sound, music to the narrative
Week 8	Lesson on animation and effects. Edit in WeVideo
Week 9	Creating a title page and credits. Edit in WeVideo
Week 10	Final edits and publish, view stories

Although the first half of the course focused on story writing and sharing, in week three there was a class dedicated to introducing the software (Table 2). This session was added after the first iteration to provide a better understanding of the digital story process and give participants perspective on the number of pictures used, how they might be used, the role of music, and other features that distinguish digital from written stories. In addition, tutorials were added to offer supplementary support to participants that needed extra time and assistance learning WeVideo.

3.1.1. Sample story idea activity

Activities were designed to help participants generate story ideas and think about their lives. One example of an activity used to engage learners in story creation in the first few weeks can be seen in Figure 3. This activity was designed to get participants thinking about their lives, sharing experience, and to start to see the different ways that imagery can be used to enhance story and how others will always bring their own experience and interpretation. They were asked to bring items from home (photos, medals, coins, or any item they wanted) to use in the activity (Figure 3).

Figure 3 Story idea activity

Story generating and sharing activity
Everyone put one of the items they brought onto a table. Pick up one item that is not yours but reminds you of something in your life. In a circle go around and tell everyone what it reminds you of – is there a story in that? Next – give the items back to the person they belong to and go around in a circle to hear why they brought those items. Is there a story that goes with the item? Remind participants that every item and every picture has a story. If they are having trouble finding a story look around at items in their house. If you find something that sparks an emotion ask yourself why? What happened that made me smile or brought a tear to my eye when I looked at that? Thank everyone for sharing.

These activities meant that participants were not just sharing one story, although their digital story focused on one, but multiple small stories and experiences.

3.1.2. Adaptions after the first few iteration

An initial analysis on the course design and implementation was conducted after the first iteration and then again after another two iterations (see Hausknecht, Vanchu-Orosco, & Kaufman, 2016a, 2016b, Hausknecht, Vanchu-Orosco, & Kaufman, 2017). This included examining the initial evaluation forms and feedback from facilitators and participants. Since the first two versions of the course ran during the fall of 2014, the two

researchers working with these groups (Hausknecht and Vanchu-Orosco) analyzed the evaluation forms, participant feedback and co-facilitator feedback. Although there was a strong sense of the value of the course, time issues and making sure the learners had a complete story became an important focus. Thus, we made some adaptions. First, as time was an issue, we only ran 10-week courses. The eight weeks that some venues (such as libraries) wanted was simply not enough time for participants. Second, we added tutorial sessions once the computer was introduced. This seemed to alleviate some of the issues. Finally, we added an introduction to the software early on to give them a better understanding of how the photos and other pieces are integrated.

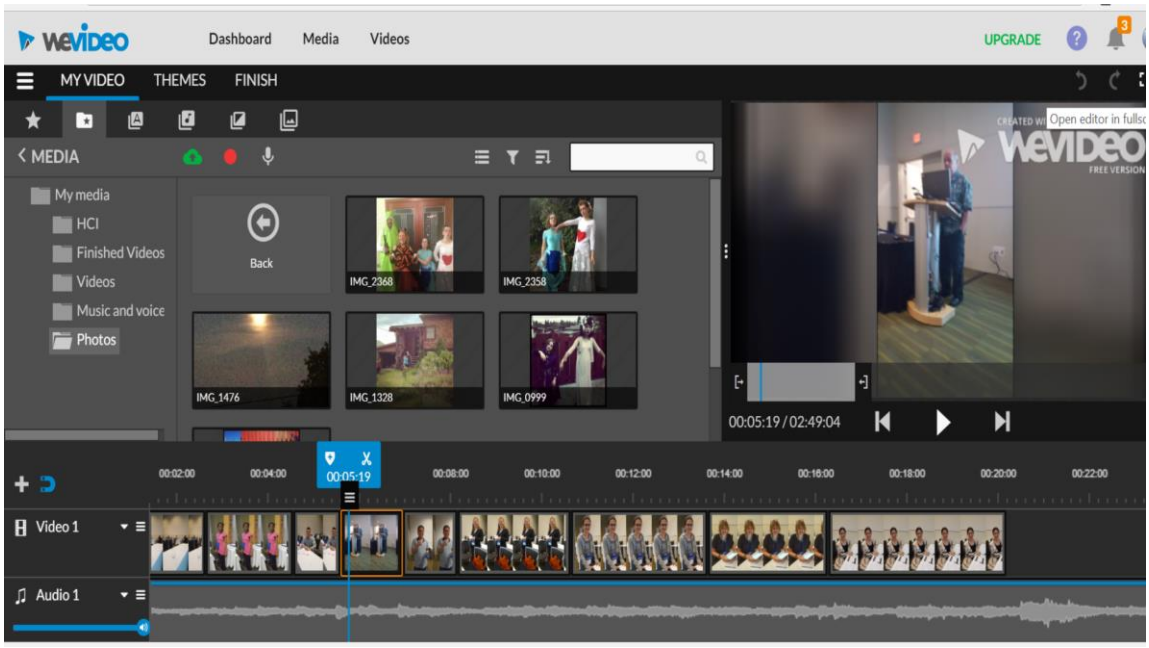
3.1.3. Training of facilitators and standardized material

The course outline, unit plan, weekly lesson plans, and weekly handouts were used by all facilitators to ensure consistency with each course in terms of content and delivery. A full day of training was provided for new facilitators and they were given an opportunity to co-facilitate a course with an experienced facilitator before being the main facilitator. This was meant to promote a better understanding of the digital storytelling process and course design.

3.1.4. Software

The researchers reviewed various digital storytelling software programs for their affordances and constraints. WeVideo, a browser-based digital storytelling software, was chosen as it allowed for access on any computer with Internet connection and could be used with an Apple or Windows computer. This was important as it was probable that participants would need to spend additional time working on their stories outside of the course on various platforms. Plus, it meant they could continue using the technology after the course was finished. Digital storytelling can take some time, typically a minimum of 20 hours to create a complete story (University of Winnipeg Oral History Centre, 2014), not including the time spent sharing work and learning about writing stories.

Figure 4 WeVideo Software



The software presents various timelines in which the storyteller layers voice, images, and sound (Figure 4). Although there is a specific approach to how the tool is used, it does allow for many different formats; thus, participants could include video, music, photos, words, and sounds. It also included various editing tools from a simple pan in and out, to more complex features. Thus, participants could keep it as simple or complex as desired. Participants were given a variety of methods to engage with to learn the software. For example, there were examples, demonstrations, hands on activities, a WeVideo instruction book (so that they could take hand notes), videos, and one-on-one time experimenting with the software.

3.1.5. The coaxed story (a note on the constraints)

In extending on ideas by Poletti (2011) the framing of questions and the course purpose influence the types of life narratives that storytellers tell. Both the pedagogical considerations and the social aspects (other participants) influence the narrative. Poletti (2011) argues that by restricting or guiding participants stories through specific genres and elements (7 elements of digital storytelling) we are fitting another's voice into a specific approach. Manchester and Facer (2015) also brought up the ethical issues of editing one's own story versus allowing another to edit the story. A person's story may change by the editing choices and the storyteller may not feel it is how they want to tell

the story. Within our project, older adults edited their own stories. However, the facilitators were there and may have made suggestions. A specific, traditional story form was promoted. Thus, involving a story arc with a beginning, middle and end. Handouts and activities also influence participant choices. The suggested time restrictions (stories should be 3-8 minutes) also posed certain restrictions. Participants were also restricted in the choice of music due to copyright issues. However, all of these also may have promoted intersubjectivity and community.

Furthermore, the technology used is not neutral, it comes with its own properties that act upon the human while the human is acting upon it (Shaffer & Clinton, 2006). Thus, to some degree the stories are guided by the affordances and constraints within the technology itself (Postman, 1996). For example, although there is a merging of sound and images, it is a linear timeline. This will likely influence participants choices as compared to a different tool. Participants sometimes struggled with the program and getting their story to look how they imagined it should look.

Chapter 4. **Methods**

4.1. Introduction

This study examined the perceived experiences, benefits, and challenges of older adults (n=98) who took one of the fifteen digital storytelling courses that were held from September 2014 – December 2016. Each iteration of the course involved 4-10 older adults over an 8-10-week course. This chapter explains the research design choices, the theoretical background, and the analysis of the data. The research design and the course design were aligned through their theoretical underpinning.

4.2. Researcher's role

My role within the digital storytelling course was to design, develop, and implement the course and the research. At the start, I designed the course including the activities each week, the overall structure, and the materials. Furthermore, I led the design of a demographic questionnaire, focus group questions, and an evaluation form for the course. For the first two iterations, I facilitated a course each term, and analyzed these and adjusted after each iteration. From this point, other facilitators took over the facilitation.

As a researcher, I chose to analyze the course as a whole to see the overall benefits and challenges within. This was done at the end of the two years of the project. As the designer of the program, I recognize that I may have some bias. However, anonymity and other methods were used to address this. Furthermore, many of the iterations were facilitated by other research assistants.

4.3. Theoretical underpinning

The researcher has an epistemological constructivist perspective of knowledge and understanding. This is paired with a growing interest in situated learning and social factors that contribute to knowing. Both the design of the digital storytelling course and the educational lens in which the current research project is perceived is influenced by these perspectives. As discussed within the literature review, I also considered a life course approach to ageing and ideas of narrative theory. A case study approach was

used as it is appropriate for the theoretical underpinning, the research questions, and the bounded system for examining the participants experiences, benefits and challenges that are under inquiry.

4.3.1. Case study methodology

The current research used a case study methodology. A case study approach is often a good choice when researchers want to study a phenomenon that occurs within a specific context (Baxter & Jack, 2008). For education and the social sciences, cases often involve people and programs (Stake, 1995). Furthermore, Yin (1997) suggests that case studies are useful in the evaluation of programs.

Case study research is interested in naturalistic events and examining the particulars of a case. Stake (2003) observes that “qualitative case researchers orient to complexities connecting ordinary practice in natural habitats to the abstractions and concerns of diverse academic disciplines” (p.142). The study was concerned with the experiences, possible benefits (such as social and educational), and challenges (such as computer skills) that could occur during this course. However, the study was also open to various aspects that might emerge through the complexities of the course. Nastasi and Schensul (2005) suggest that one of the key elements qualitative researchers need to be aware of is the context and culture. Within the current study, the culture is centred around the older adult cohorts within the context of the 10-week course (with a couple of early versions lasting 8 weeks). During the course, the participants also create their own community within the timeframe and specific environment.

Miles and Huberman (1994) propose that the case is a phenomenon occurring within a specific context. The unit of analysis is the case. Stake (1995) suggests that a case is “a specific, a complex, functioning thing” (p.2). Thus, the digital storytelling course for older adults is the case. It is not a case as perceived as a single individual, but is bound by the course structure and the first two years of the project. A case is often bound as to show the study’s scope. This can include binding it by time and place (Yin, 2003), time and activity (Stake, 1995), or other restrictions.

The current study was bound by time in two ways: the length of each course (8-10 weeks – sometimes it included an extra showing event) and those courses that occurred just over a two-year period (September 2014 – December 2016). Binding the study to the course was chosen because the study explores the phenomenon of the experience of creating a digital story within the specific course design. The timeline was chosen for several reasons; first, the initial research team were no longer going to be as involved after this point in time (including myself); second, a few design changes and structures were made at this point; third, a limit had to be set. Thus, almost a hundred participants and 15 focus groups appeared to be sufficient for data analysis.

Case studies often involve multiple data sources. This is unique from many other qualitative methods, as they allow mixed methods including quantitative findings (Baxter & Jack, 2008). Part of the reason is to get a clear and complete understanding of the whole phenomenon within the case. Baxter and Jack (2008) advocate that the "convergence adds strength to the findings as the various strands of data are braided together to promote a greater understanding of the case" (p.554). This can assist with strengthening the trustworthiness of the research. The main area of focus of the research was on the qualitative data. The evaluation of the course design lends itself to quantitative approaches, while exploring participant experiences required a qualitative approach. Together, they form a rich description of the learning environment and the benefits and challenges.

4.4. Data collection

4.4.1. Participants and context

The digital storytelling course took place in the Greater Vancouver area, B.C., Canada. The main research grant was a partnership grant that required the researchers to work with community organizations to conduct the research. Initial partners in the project were the City of Port Moody and the City of Burnaby. However, other seniors' centres, libraries, and community centres also partnered with the project after the first two courses were offered. Many of these organizations hosted the digital storytelling course for older adults and they were involved in the recruitment. Participants were recruited through advertisements (e.g., newspaper, community website) with the partnership facilities. The course was free. Each class could have up to 10 participants.

At least 4 were needed for the course to run. The digital storytelling course ran once a week for two hours, for 8-10 weeks depending upon the centre and time restrictions. (Only a couple of the early versions were eight weeks before adding the two extra weeks). This research took place over a two-year period and included 15 groups of participants that completed the course.

Within the two-year period (Fall 2014 – Fall 2016) there was a total of 117 older adults who signed up for the digital storytelling course. Of those, 19 did not complete, leaving a total of 98 (16% drop-out rate). The reasons for not completing the course varied, including illness and moving to another location. During this period, 15 digital storytelling courses were offered, each followed by a focus group interview. Each course iteration consisted of 4-10 participants. There was often one main facilitator and a co-facilitator participated later in the technology aspects.

Although I collaborated in many aspects of the partnership project, I also had a very specific role throughout. My role within this study was to design and develop the educational experience for the older adult participants. Furthermore, I conducted ongoing analysis of the participants experiences, benefits, and challenges of the course up until the end of 2016.

4.4.2. Questionnaires

Participants completed an initial demographic questionnaire on the first day of the course to gather their background and demographic details (Appendix A).

At the end of the 8-10-week course, participants were given an anonymous survey evaluating the program in terms of satisfaction with facilitation, process, and program (Appendix B). Furthermore, participants were asked to rate whether they believed they had improved their digital skills. These skills were divided into internet skills, computer skills, software skills, and digital storytelling skills. A five-point scale was used to rate the course and perceptions of digital skills improvement. At the end of the evaluation there were open-ended questions asking the participants what they liked best about the course and what could be improved.

4.4.3. Focus group interviews

Focus group interviews were conducted on the last day of the course (usually week 10) after the final session. A half-hour was set aside and participants were encouraged to come and discuss their course experience. The facilitator, or facilitators, of the course conducted the focus group using semi-structured questions to elicit information about participants' experience, process, and what they perceived to be the benefits and difficulties. The interviews were recorded and transcribed. In most cases the facilitators also took brief notes during the interviews.

The focus group method involves collecting a group of participants together to discuss a phenomenon or issue in the company of a moderator (Lunt & Livingstone, 1996). This was considered an appropriate approach to collecting data on the digital storytelling course experience because the process was a group experience. One advantage to focus groups is that the participants play off each other and as a group come up with their own wording (Kitzinger, 1994; McLafferty, 2004). They also help reflect the reality of a specific group and the language and culture within this (Hughes & DuMont, 2002). Furthermore, participants have each other as an audience (Kitzinger, 1994). Thus, it takes the importance and attention off the interviewer. Additionally, participant interaction during the interviews can produce important data (Morgan, 1996). The focus group also provides an opportunity for participants to debrief their experiences in the course, so it seemed appropriate to gather this information from each group. Specific reasons that focus group interviews were chosen for this study were:

1. They allowed for the greatest number of participants to express their thoughts and experiences.

2. Since the course was designed around group interaction, even though they produced their own artifacts, it seemed appropriate to gain the group understanding.

3. Participants were provided with an opportunity to discuss their individual perspectives through the open-ended section of the evaluation forms prior to the group discussion. As these were anonymous, it offered a venue to express ideas they may not feel comfortable sharing with the group or the facilitators. Furthermore, the evaluation form gave participants a chance to

formulate their own thoughts and comment on the form, and then after had an opportunity to be a member of the group conversation.

The focus group questions were semi-structured and designed to illicit a conversation between participants and the facilitator on their experience of the course. Thus, there were over-arching ideas and suggested prompts, but the focus was on encouraging the participants to discuss their course experiences. The focus group questions centered around four areas (benefits and challenges; course experience; impacts; selection criteria) with suggested questions to promote discussion from participants (Appendix C). As the group knew each other and were comfortable, in most cases not all questions were asked. However, all focus group interviews asked at least one question related to benefits and challenges and the course experience. Participants also had an opportunity to express themselves outside of the group through the evaluation forms. These were completed prior to conducting the focus group.

4.4.4. Viewer data

At a “Sharing Our Stories” event, viewer data was collected in the form of a questionnaire that asked a small number of open and closed questions (Appendix D). Story viewers (N = 103) were individuals who attended one of the events and included community members, friends, family, and digital storytellers. Story viewers were asked to rate (1 – 5) and comment on each story. The questions included choosing their three favorite stories, and then responding to why they chose these stories. The rating scale allowed participants to rate stories from 1-5, where 1 (not at all), 3 (moderately), 5 (extremely) provided information regarding their interest and enjoyment of each story.

4.5. Data analysis

4.5.1. Quantitative analysis

The quantitative data (demographic, evaluation forms, and viewer forms) was collected from participants and entered into a Microsoft Excel document. This was checked for accuracy by a second researcher. After the data set was complete, a separate Excel document was used, and the data was cleaned for non-completers and

examined for any irregularity. The data was then moved into SPSS24 for analysis. Survey data and evaluation data was analyzed for descriptives using SPSS24.

4.5.2. Coding of data

Open-ended questions on the evaluation form and viewer questionnaire

The evaluation forms contained an open-ended section. These allowed participants to write brief comments about what they liked best, what they would improve, and other thoughts. The questions on what they liked best and what they would improve were analyzed by reading through them all in an excel document. After reading through them, an initial categorization for the main codes were organized using excel columns with headings such as social, and learning. These were then divided into the key themes that appeared through the columns. Columns were added where something new appeared. A calculation was made on the amount of times certain categories were included in the comments. A similar process was used for the viewer feedback. This was seen to be a practical approach since the answers to the questions were short and mainly focused on one or two main idea. Thus, when asked what they liked best they might simply answer “Social interaction” “Facilitators were great” and rarely made more in-depth comments.

Focus group interview analysis

An inductive approach was taken to the data analysis, in that the researcher aimed at being open to what would appear. However, the researcher acknowledges that researchers cannot be completely neutral within our examination of data. For example, the study proposal came with the purpose of examining specific areas. Furthermore, although the themes are data driven, I am aware of my own values and the guiding factors of the research questions. As Braun and Clarke (2006) point out “researchers cannot free themselves of their theoretical and epistemological commitments, and data are not coded in an epistemological vacuum” (p. 89). However, with this in consideration, there are no pre-subscribed framework and for the analysis I aimed to be open to examining the data for what may emerge.

A constant comparison analysis combined with classical comparison analysis was used to analyze the data. This was done by conducting a constant comparison on

the focus groups, but also when working within NVivo the researchers can observe the number of times themes occur and other quantitative aspects. Clarke and Braun (2014) suggest six steps to a thematic analysis: familiarize yourself with the data, generate initial codes, search for themes, review for potential themes, define and name themes, write up the report. Themes are “an outcome of coding, categorization, and analytic reflection, not something that is, in itself, coded” (Saldaña, 2015).

In general, it requires a limited number of focus groups for the data to become saturated (Guest, Namey, & McKenna, 2017). For example, Guest, Namey, and McKenna (2017) found that it took approximately 3-6 focus groups for 90% saturation and only three for the major themes. However, each focus group after this point can help to confirm results and draw out the most common aspects that arose across different groups (Onwuegbuzie, Dickinson, Leech, & Zoran, 2009). Focus groups are often analyzed one at a time; and thus, with each focus group analyzed, they almost act as a substitution for theoretical sampling (Onwuegbuzie, Dickinson, Leech, & Zoran, 2009). When each new focus group is added and coded, the codes are compared to the previous codes and categories. Thus, at one point they are used to test the previous findings sampling (Onwuegbuzie, Dickinson, Leech, & Zoran, 2009). Onwuegbuzie, Dickinson, Leech, and Zoran (2009) suggest that when a researcher uses the initial set of focus groups for discovering the emergent themes and then subsequent ones to verify the findings it is an emergent-systematic focus group design (Initial focus groups are emergent, focus groups used to test the ideas are systematic).

The focus group interviews were transcribed, and a thematic analysis was conducted. The approach to the analysis adapted Braun and Clarke’s (2006) phases and Saldaña’s (2015) recommendations and approach. Thus, there was an initial familiarizing of the data. Since the focus group interviews were transcribed, the researcher spent some time going over the interviews, then rereading the interviews. Furthermore, as I categorized and explored the information, I continually went back to previous interviews.

Phase 1: Two researchers familiarized themselves with the data. One researcher transcribed most of the interviews, and had a good idea of the content. A second researcher (myself) read over the transcripts and listened to audio recordings of the focus group.

Phase 2: Two researchers independently coded the first focus group interview and then came together to discuss and refine their individual results and form initial categories. A second and third transcript also underwent this process and the researchers came together to refine categories and discuss initial categories and possible themes.

Phase 3: After agreement was reached on the first set of transcripts, then I coded the other focus groups independently using NVivo to help organize and calculate the codes and categories. However, after the codes were categorized in NVivo, I moved into a word document where I re-read and re-examined them for further analysis and to explore further insight into the findings.

Phase 4: The initial themes were examined and some categories that made up these were separated while others were merged. As I wanted to get as much saturation as possible, merging occurred more often than separating them at this point so that the theme could encompass a greater number of comments. Through NVivo the top themes were noted. These were themes that consistently appeared throughout the focus group interviews and a phenomenon reported in most courses, regardless of facilitator or group.

Phase 5: Defining and writing up the themes.

4.5.3. Trustworthiness

With research that includes qualitative methods an examination of trustworthiness is often assessed (versus validity, reliability, and objectivity) (Guba, 1981). The current research established trustworthiness through a number of methods (Table 3). Trustworthiness is made up of four criteria (to match the quantitative criteria): Credibility, transferability, dependability, and confirmability. Some of these seem to have more value within a qualitative paradigm. For example, credibility is extremely important as it addresses whether the research findings are a credible representation (or at least a plausible one) of the data (Shenton, 2004). Whereas, the criteria of transferability have had some controversy as theoretically it can only be addressed to a certain point (Shenton, 2004).

Table 3 Trustworthiness of the study

Trustworthiness category	How the research addressed trustworthiness
Credibility	Familiarity with the culture, prolonged engagement (Lincoln & Guba,1985) Triangulation – multiple data sources (Lincoln & Guba, 1985) Well established research methods (Yin, 1995) Opportunities to refuse participation (Shenton, 2004) Debriefing sessions with collaborators (Shenton, 2004) Reflexivity (Shenton, 2004)
Transferability	Thick description of case provided (Shenton, 2004) Boundaries of the study defined (Shenton, 2004) Use direct quotes (Morrison-Beedy, Côté-Arsenault & Feinstein, 2001)
Dependability	Triangulation (Lincoln & Guba, 1985) Detailed description of the study process (Shenton, 2004) Coder agreement Peer examination (Shenton, 2004)
Confirmability	Triangulation (Shenton, 2004) Reflexivity and predispositions acknowledged (Shenton, 2004) Audit trail Coder agreement Return to data to confirm (Morrison-Beedy, Côté-Arsenault & Feinstein, 2001)

Credibility was addressed through a number of methods (Table 3). First, prolonged engagement within the research environment is considered a valuable approach to achieving credibility (Lincoln & Guba, 1985). I have been involved with the research from the start, engaging with community members and participants, facilitating for two of the sessions, and training and interacting with facilitators. Furthermore, the facilitators were the focus group interviewers and they had prolonged engagement. This is important because they were able to build trust so that the participants are comfortable disclosing information (Creswell & Miller, 2000). The second researcher who assisted in the initial coding of the data was similarly engaged over the time of the case. Credibility was also addressed through using well established research methods (Yin, 1995), providing participants with opportunities to refuse participation (Shenton, 2004), conduct multiple focus groups (Morrison-Beedy, Côté-Arsenault & Feinstein, 2001), and debriefing sessions with collaborators (Shenton, 2004). Finally, triangulation of the data was used.

Triangulation is seen to be valuable for three of the four criteria: credibility, dependability, and confirmability. Shenton (2004) describes three different approaches to triangulation. The first that is often discussed is the collection of data through different methods to confirm the findings or triangulate the findings. The evaluation forms and

comments on these, matched with the focus group interviews, notes from interviews, and observations with the digital story course were all compared with each other. However, these were matched more as a group process versus each individual perspective due to the anonymity of the evaluations. Shenton (2004) also suggests that triangulation can be achieved through the triangulation of data sources or informants. Within the study, the participants' data was compared with viewer data and with the notes from the facilitators. Finally, Shenton (2004) suggests triangulation can occur through varying the sites of the research. Within the current study, the courses were consistent in design; however, the location they were held varied. Overall, the current research reached a high level of triangulation.

Transferability is considered the amount to which the information can be transferred to different situations. Two ways in which this is addressed in qualitative research is through using direct quotes to present findings (Morrison-Beedy, Côté-Arsenault & Feinstein, 2001), and the boundaries of the study are defined (Shenton, 2004). All of these methods have been addressed throughout.

Dependability is the equivalent to reliability (in the quantitative paradigm), in that if the research were repeated similar results would occur. Lincoln and Guba (1985) argue that credibility and dependability are closely tied within trustworthiness; in that, if you address credibility it will go a distance to addressing dependability. Within this study, dependability was addressed through thick triangulation and by having two researchers code the initial interviews together. To further address concerns of dependability, a peer evaluation was conducted.

Once again, triangulation was used to address confirmability, along with coder agreement. Throughout there was a return to the data and the categories and quotes were re-read (Morrison-Beedy, Côté-Arsenault & Feinstein, 2001).

Chapter 5. **Results**

The main data collection techniques were administering a demographic questionnaire at the start of the first class, an evaluation form and focus group interviews during the last class, and a questionnaire at the “Sharing our Stories” event.

5.1. Demographic and background characteristics

A total of 98 participants completed one of the digital storytelling courses offered over the two-year period. The participants were given a questionnaire during the first digital storytelling class. It required them to fill out demographic and background information. Not all participants filled in every question.

5.1.1. Sex, age, and immigration

Table 4 reports on the sex, age, and whether participants had immigrated to Canada. There was a much greater number of female participants (82.6%) compared to male participants (17.4%). Participants ranged in age from their early 50s to the 90s with a fairly even distribution in each category between 50 and 89. The highest percent (just under a quarter) of participants were in the 65-69 age group. Almost a fifth of participants were over eighty. Participants were also asked whether they immigrated to Canada. Over half of participants reported that they immigrated to Canada at one point in their life. There was an option to report on the year when they immigrated. Participants reported a wide range of dates they immigrated from 1929-2015. Thus, some arrived as children and some were newly arrived.

Table 4. Participant demographics

Characteristics	Category	Frequency (n)	Valid Percent (%)
Sex	Female	76	82.6
	Male	16	17.4
	Total	92	100.0
Age	50-54	5	5.4
	55-59	10	10.8
	60-64	16	17.2
	65-69	21	22.6
	70-74	11	11.8
	75-79	12	12.9
	80-89	14	15.1
	90 +	4	4.3
	Total	93	100.0
Immigrant	Yes	49	52.7
	No	44	47.3
	Total	93	100.0

5.1.2. Initial reported digital skill level

The initial questionnaire also asked about participants' digital skill and computer use (Table 5 and Table 6). This included whether participants had email and the frequency they used the Internet as well as how they would rate their computer and Internet skill level. Most participants reported that they had email, with only 6.4 % of participants who did not. Approximately three quarters of participants used the Internet daily and sometimes several times a day. Only 5 (5.6%) participants went on the Internet once a month or less.

Table 5 Reported Email and Internet use of participants

Characteristics	Category	Frequency (n)	Valid Percent (%)
Email	No	6	6.4
	Yes	88	93.6
	Total	94	100
Internet use	Once a month or less	5	5.6
	Once a week	4	4.5
	Several times a week	13	14.6
	Every day	28	31.5
	Several times a day	39	43.8
	Total	89	100.0

Participants also rated their initial Internet and computer skills, as well as whether they had previous experience creating digital stories (Table 6). Only 4.3 % of participants had never used the Internet. Approximately a third of participants considered themselves beginners. Over half of participants reported an intermediate skill level, with only 7.6 % reporting to be experts. A similar pattern was found with the reported computer skills. Thus, participants mainly rated themselves as beginner and intermediate, with only a small percentage reporting never using computers or being experts. Only 5 participants reported having previous digital storytelling skills.

Table 6 Reported Initial Skill Level

Characteristics	Category	Frequency (n)	Valid Percent (%)
Internet skill	Never used it	4	4.3
	Beginner	27	29.4
	Intermediate	54	58.7
	Expert	7	7.6
	Total	92	100.0
Computer skill	Never used it	3	3.2
	Beginner	30	32.3
	Intermediate	54	58.1
	Expert	6	6.4
	Total	93	100.0
Digital story skill	Yes	5	5.4

5.2. Evaluation of the course

Early evaluation of the course showed initial positive responses to the design and implementation with a high level of satisfaction and learning reported (see Hausknecht, Vanchu-Orosco, Kaufman, 2017). After two years, the results were similar; however, the open-ended answers provided a few additional insights.

5.2.1. Course Experience

At the end of each course, the participants filled out an evaluation form. The forms asked a range of closed-ended questions on facilitation, process, and software used; as well as, a few open-ended questions on what participants liked best and what improvements they would make.

Table 7 Course evaluation - Facilitation

Question	Categories	Frequency (n)	Valid Percent (%)
Facilitator's helpfulness	Very Poor	0	0
	Poor	0	0
	Fair	2	2.3
	Good	17	19.8
	Very Good	67	77.9
	Total	86	100.0
Facilitator's ability to communicate	Very Poor	0	0
	Poor	0	0
	Fair	5	5.7
	Good	25	28.7
	Very Good	57	65.5
	Total	87	100.00

Most participants rated the digital storytelling course as being good or very good (Table 7). The approach to facilitation was rated highly with facilitator helpfulness being considered very good (77.9%) or good (19.8%) by most participants. Facilitator communication was also scored high with two thirds of participants rating communication as very good and just over a quarter rating it as good.

Table 8 Course evaluation – Process and software

Question	Categories	Frequency (n)	Valid Percent (%)
Process used to create digital story	Very Poor	0	0
	Poor	2	2.3
	Fair	3	3.5
	Good	40	46.5
	Very Good	41	47.7
	Total	86	100.0
Software used to create digital story	Very Poor	0	0
	Poor	3	3.6
	Fair	6	7.1
	Good	44	52.4
	Very Good	31	36.9
	Total	84	100.0

The process used for creating the digital stories was also rated highly by most participants (Table 8) as either good (46.5%) or very good (47.7%) with 3.5% rating it fair and 2.3% rating it poor. The software used was also rated high (Good and Very Good) by most participants.

Table 9. Difficulty level of course.

Question	Rating	Frequency (n)	Valid percent (%)
I found the course	Very easy	1	1.2
	Easy	12	14.1
	Just right	44	51.8
	Difficult	23	27.1
	Very difficult	5	5.9
	Total	85	100.0

Just over half of participants found the course just right; whereas, a just over a quarter found it difficult and 14.1% found it easy. A small percentage of the course participants either found it very easy (1.2%) or very difficult (5.9%). Thus, the program was accessible to most participants.

5.2.2. Skill Improvement

Digital skills and literacy were also evaluated. Participants were asked whether they believed their skills using a computer, using computer software, and their internet

skills improved over the course; as well as whether their digital storytelling skills improved. Table 10 reports on participants ratings of their digital skill improvement.

Table 10. Digital skill improvement.

Did skills improve:	Categories	Frequency (n)	Percent (%)
Using a computer	Not at all	8	9.3
	Slightly	21	24.4
	Moderately	30	34.9
	Very	20	23.3
	Extremely	7	8.1
	Total	86	100.0
Using computer software	Not at all	8	9.4
	Slightly	18	21.2
	Moderately	35	41.2
	Very	19	22.4
	Extremely	5	5.9
	Total	85	100.0
Using the internet	Not at all	20	23.3
	Slightly	18	20.9
	Moderately	34	39.5
	Very	10	11.6
	Extremely	4	4.7
	Total	86	100.0

The participants reported a range in their perceived improvement of computer, software, and internet skills. Less than 10% reported no improvement in using a computer or computer software. Around 90% of participants reported some level of computer and software skill improvement. Most of the participants reported moderate improvement (34.9% for computer and 41.2% for software). Just under a quarter put down very and under 10% reported extremely. Participants reported lower improvement in internet skills with just over a fifth of participants reported no improvement with internet skills. However, the highest number of participants (39.5%) reported a moderate improvement in internet skills.

Table 11. Skill improvement for digital story.

Did skills improve:	Categories	Frequency (n)	Percent (%)
Creating a digital story	Not at all	1	1.2
	Slightly	6	7.0
	Moderately	20	23.3
	Very	34	39.5
	Extremely	25	29.1
	Total	86	100.0

As might be expected, the highest skill improvement reported was for digital storytelling (Table 11). Only one participant reported no increase in digital storytelling skills, with 30.3% reporting that they improved slightly or moderately and just under three quarters reporting that they improved very or extremely.

5.2.3. Who helped them with the story

Participants were asked who helped them with the digital story and whether they had outside support. Very few participants reported outside help (n=8). Most of the comments reported the help from the facilitators. This may be partially due to a misinterpretation of the question which was meant to refer to those outside the course. However, other people were not reported as helping outside class.

5.2.4. What participants liked best and Improvements

The participants were given the opportunity to respond to open-ended questions about what they liked best and what they would improve. When the participants wrote about what they liked best there were some distinct categories that were found. However, with the improvement, besides various comments on time difficulties, the comments were often very individualistic in nature. They could still fit under very broad categories such as suggestions on improving specific aspects. The findings were similar to those reported in the initial evaluation (see Hausknecht, Vanchu-Orosco, Kaufman, 2017); however, they are expanded upon here.

Learning something new

About a third of participants (n=28) wrote about how they liked the learning aspects of the course. Many participants commented that they liked “learning something new”, while others commented on specific aspects they liked learning such as “The

learning of writing and expressing yourself." Others focused on their technology learning such as "learning WeVideo", "newly acquired skills in in technology", and "Learning how to use WeVideo and how to use internet to get free music & images"

Social aspects of learning experience and sharing stories

About a third of participants commented on how they liked the social aspects of the learning experience. These included comments related to sharing stories with others, socializing and supporting each other.

Many of the participants wrote about how they liked "story sharing" and "hearing other's stories", "Listening to the other participants' stories", and the "reaction of others". The sharing of stories, both hearing others and having the opportunity to share theirs, seemed to be important to participants and what they liked best in the course. One participant even mentioned specific activities designed around sharing stories as seen with "Sharing with other participants. - their input to my draft story and the session in which we invented a story about others' photos or objects."

Other comments were more related to simply being with other participants and meeting new people, supporting each other; for example, "Interaction with other participants," "Getting to know the other participants", "supporting each other", "the comradery", "meeting new people."

Facilitation

Participants also commented on the helpfulness and support of the facilitators (approximately 20%). This was not that surprising considering the high ratings from the evaluation form. However, the question was to consider what they liked best, and many commented on the supportive environment the researchers provided. Participants wrote comments such as "Helpful, fun monitors", "Friendly, kind assistance of the mentors", "The instructors - their help + support", "Approachable, supportive facilitators"

Others wrote further details about the support such as

"The encouragement & helpful attitude of our instructor."

"Got opportunity to ask questions & get assistance when I got stuck"

> "all the hands-on help with using wevideo, what a great service the personalized attention is"

Digital story creation process

Some participants wrote comments on the digital storytelling process and how they enjoyed putting the different aspects together and being able to tell their story. Some participants focused on the multimedia aspects with comments such as "I enjoyed the new Digital Storytelling Workshop. The best thing I enjoyed was the narration & uploading of the photos", "Putting pictures & music to the story," "The process of putting the pieces of my story together." Others focused on the process as a whole such as one participant wrote, "The very organized & helpful approach to build an effective & powerful story - it is a process that gives one a bit more self-respect!"

5.2.5. Areas that could be improved

On the evaluation form, participants were asked about areas that could be improved. The comments on these were more varied with 'time' being the only aspect that appeared often. This was sometimes discussed as a time commitment (and them not being prepared for this) or as not having enough time within the course. In an earlier analysis, the main aspect that appeared was time issues (Hausknecht, Vancu-Orosco, Kaufman, 2017). Adjustments were made by adding extra tutorials for those who wanted them. However, the issue of time remained an area mentioned within the feedback forms even after the adjustments.

The many facets of time issues: Commitment and not enough time

Participants commented that they required more time to finish their stories, explore their stories, and understand the software. Comments ranged from wanting "More editing time" to "We could have had more time to do research & work more on the timeline." "more time on WeVideo", "longer hours to work with".

Further comments expressed a general need for more time within the program such as these participants wrote "A lengthier course to help people like me who are not too computer savvy to grasp the technological details" and another wrote "Needed a lot more time - in developing the story and in the lab."

5.3. Focus group interviews

At the end of each iteration of the course participants were invited to attend a focus group interview to discuss their experiences of the digital storytelling process. In total 15 focus groups were analyzed. These focus groups allowed for a conversation about their experiences as a group. All focus groups were analyzed and the most prominent themes that emerged covered a wide range of aspects such as learning, social and emotional dimensions, and the challenge of working with computers. However, many participants described a full range of benefits as evidenced by a woman who had retired a couple of years earlier that commented:

> I really feel mentally, psychologically, and emotionally more healthy having taken this class. Being with people. Getting out to this class. Coming here and learning and just having people just be who they are.

And another participant who remarked:

> I think the impact has been many layered, right, P7 said just now, the social ah, emotional aspect, as well as the ah, the knowledge that we can do it. We learn something new.

The following covers the most prominent themes that emerged throughout most of the focus groups and quotes from participants are provided as examples of the theme. Demographic details are provided for the participant who said the quote; however, at times this information was not available.

5.3.1. Reciprocal sharing of life stories and learning created social connectedness

All groups discussed the social aspects of the course, and these aspects often took up much of the discussion. These aspects could be placed within two main categories: the course was discussed as a shared experience where participants had a chance to connect and build a community; in the other, participants discussed the experience in terms of richness of reciprocal sharing of stories and the affordances this created.

Participants discussed the experience of a shared learning environment. This allowed them to gain insights and feedback, not only from the facilitator, but from the other participants. Various participants commented on how the shared experience was

important. Some participants described how the sharing process created a socially supportive environment as pointed out by a male participant in his 60s,

> Where this is more participatory which is good because it encourages each other. For that, that to listen, at the beginning, even before we did the software to hear each other talk and share and who are you and that was good. I think that really helped.

Some participants commented on how the course brought people together and created a sense of community as one participant suggested “I think what we're actually doing is we are building community”. Others commented:

> I think this kind of workshop is really good and it brings the community together. (Female, late 60s)

> I think it was very introspective. But it was very good also to learn about a community of people. (Male, late 50s)

A female participant (70s) who recently immigrated to Canada commented on how she looked forward to coming to the digital story course and connecting with people each week.

> Yeah, but, you know, every Tuesday I will, looking forward to coming to the library and meeting all of you. It makes me happy, you know.

In addition to the course providing a place to meet others, it also provided a space for sharing stories about lived experiences and getting to know each other. It made the interactions personal, as mentioned by a female participant in her late 60s.

> I think that's what it is and you look at people and you meet them the first day and we're all strangers, but then, by the end of the time you, you know, these little bits about that person, that ah, it, it's personal.

This was sometimes discussed as seeing a different side in the person. The sharing of the stories and experience created a feeling that the participants knew each other better from the interaction.

> I find that umm, you see a different side of the person who are in this group. And almost see their inner ah, self, ah, revealed. And, to me, you never look at them the same way again. They're - they mean a lot more to you. (Female, 80s)

> I think that ah, when we're sitting here around the table speaking out as we feel, we get a feeling ourselves that a we're a little closer as friends. And that umm, we should talk to one another - one another

> more than we do. I can see you every day and all I say is "hello." [Laughter.] You know, I think we should feel - just stop and have a little conversation and we finally get just so that we have a feeling for one another. And that truly is very important. I ah, you can find - you can feel the fella that's behind you that's ready to whack you in there, not going to give you any help, not going to give you any love and attention. But I find here, when I'm talking to the ladies, I have a feeling of being closer and I hope they have the feeling of being closer. (Female, 80s)

Focus group participants also discussed the reciprocal sharing of stories. This exchange of understandings and perspectives was considered a valuable way to learn about and from each other as a woman in her 60s commented “the, hearing each other’s stories, it's always enriching.” Others also discussed the reward of being the listener as these participants state:

> …experiencing other peoples' stories makes you, I don't know, better person, I don't know what it does. But it, it just makes you, maybe, understand people more. (Female, late 60s)

> One of my richest benefits of this course is learning about what you people have done and overcome. (Female, early 80s).

> I enjoy listening to stories about people who have come through various crises and have survived how they’ve done that and how they carry on. (Female, Recent immigrant)

> I did hear a lot of stories that I think really enhanced my understanding of, of different communities that are here. (Female, 60s)

One female participant in her late 60s commented on how the sharing of stories connected her with the other participants, “it made you very well aware that we all had issues, and everybody’s got issues and problems and we don’t talk about it necessarily and that you become like-minded spirits somehow.”

The sharing of the stories also served the purpose of being examples and allowing participants to reflect on their own story. The feedback and sharing process was observed by various participants and is evident in these comments:

> I found all the other stories very interesting and I have a lot of ideas, I think from almost every session, of the storyboarding especially and they helped me a lot with suggestions. (Female late 60s)

> I still think that that interaction we, we get instant comments about what it is you've just done or, you know. So you know you're in this

> group and everybody said "yeah that looks like you're heading in the right direction. Well, I think if I was just working on this on my own, you know, at home, I wouldn't know. (Male, late 60s)

One participant (female, late 70s) who had previous experience writing and reading poetry remarked that the digital storytelling is better than reading a story aloud:

> It is ten times better if they listen to it. It is ah, all your, what you call this, and plus this pictures, images. It is very effective like if they tell me about their story it is so monotonous but when it is in the digital, like, there is the, her voice is already telling the story bit of feeling, it's more interesting. And, and you, you really understand. It's different from reading. Like you can empathize with the person.

However, one female participant observed that it can also be intimidating to share with other people that you don't know.

> I think the fact that we're doing this together is the initial drawback … the little bit of reticence we might have had in sharing.

5.3.2. Learning digital storytelling was learning something new about self, others, story, and technology.

One theme that arose throughout the focus group interviews (and the evaluation forms) was related to the excitement of learning something new. As noted, the social sharing of the stories contributed to their understanding of others. They discussed learning as a cognitive engagement or learning in general, as well as learning through the sharing of stories. Some discussed the benefits of learning the multifaceted digital storytelling process.

> I felt it was umm, a long line of life-long learning. And we learned a lot of different things. Ah, the speech there - umm, patterns impressed me a lot. And I feel that it was - the motivation we got from it, I looked forward to classes [?] and I feel that I got a lot of inspiration and ah, to me it was very worthwhile. (Female, 80s)

> Informing me about this. Of course, I learned many things, the storytelling, the story making, and the, We, the, ah putting the music and the picture, how to assemble them. All of this. So it's something that I can cherish in my life. (Female, no age provided)

> I learned so much in my, I, I learned how to, now I can say that I learned how to write stories. (Female, early 80s)

Some participants discussed learning the new technology skills and what this brought to their lives.

> I think in addition to the women in the group, the women in the group and the stories, I think, for me, just learning a new technological skill and it's like, whew, even though it took a lot of work and effort but now it's like, you know, something I could add to my repertoire, so to speak. (Female, late 50s)

> Obviously satisfaction, of my point of view, that I mastered, a very little of the way, mind you, thanks to our faculty here, on how to use this very innovative technology. So, it's educational to me and after I learned it, it was satisfying to produce a product, which I can at least distribute to my network. (Male, late 60s)

> It's had a huge impact and the fact that I've mastered this ridiculously stupid program we've been using. (Female, 80s)

Others reflected on the learning in terms of gaining a greater understanding of self and others.

> I think that umm, I spent time in my spare time and it's very rewarding and revealing too, so you learn quite a bit about yourself and umm, I think that it's going to ah, last for a long time, ah, instead of spending time just sitting or ah, not being busy. Ah, your mind is busy. And I think that there's no time like you just - you get the feeling, you know, you want to think about this and write about it and those are the times you have to take advantage of. (Female, 80s)

> And we're learning things about ourselves, too. Not just what we are capable of doing, but, you know, about ourselves as we peak our memories and, you know, analyze and assess all these things. We are learning. (Female, recent immigrant, early 70s)

Learning from other participants also came up regularly as was also seen through the social connectedness. A male participant in his late 60s pointed out:

> Every time I go to one of these sessions I learn something new from somebody. I learn a new place. I learn about new feelings. I think, ah, I think that's, in part, is, is the thing that strikes me the most. It's worthwhile. (Male, late 60s)

There were also participants that considered the value of learning something new for their health or well-being.

> I think for my age, which is 80 <slight pause> it's surprising that I tackled it, first of all, but I sort of, I did a, a halfway decent job, lets put it that way. But it's another thing to, ah, be fighting either dementia or

> Alzheimer's by taking on something new. They say you should learn something new. (Female, 80s)

Many of the participants made comments about how “you really had to use your brain”, “using your brain and your creativity and your ideas”, “building our cognitive skills”, “good for our brain cells”. Some participants described the process as cognitive stimulation or a gain in cognition through the process:

> Headlong, you know. Write the story, do the sound. Like every part helped us filter and, and build that confidence and. But understanding the process, it's actually a production process, right? So it was really helpful and I can see a lot of people, umm, building that cognitive skill too. (Male, late 50s).

> I've been thinking about how important it, it is to do that and it, it would be nice to be able to see this expand and grow so that more and more can actually do that. And also understanding I studied brain science and neuroscience and understanding that this program is going to have is gonna have umm, immense, eh, help in terms of your cognitive functioning in your growth.

5.3.3. Learning and working with new technology can be challenging

Although many participants expressed excitement and confidence in learning new technology, the learning was not without some struggle and challenge. Most groups recognized that there was a learning curve, particularly with using the computer. Many expressed sentiments such as “But the technology was a challenge, first time around.”

> I think the drawbacks, it's, it's a learning curve for all of us, ah. I don't think the, the story, yes is challenging for us to build it and to write it, but then the challenge also the software. (Female)

Some participants felt unaware of the technology aspects, especially as most did not know what a digital story was. As one participant in her 70s expressed:

> Well, I always wanted to write. So I thought, this is going to mostly be writing. I didn't really read the fine print. [[laughter]]… and then I got there and I'm going "holy shit" [[laughter]] it's those damn computers. I guess I'm gonna have to learn.

There was also an awareness that participants were at different levels of computer experience. The challenge was seen to be the balance of these.

> Hearing each other’s stories, it's always enriching. The only drawback is that we're at different levels and I wouldn't even say that's a drawback

> but that's, I'm sure challenging for somebody who is on either end of that spectrum so someone who's never worked with a computer might be really frustrated where is somebody who's, who has worked with a computer would be frustrated because everybody's not... (Female, early 70's)

> Well, and you're dealing with, you know, you dealing with a cohort that is, generally, you know, less comfortable with the technology. So, you know, we come willingly with our stories, but there's a, more part of the technology that's a little trepidatious. (Female, late 60s)

There were also participants who suggested that they were frustrated. A brief word query in NVivo found that the word "frustrate" (and roots) occurred in over half of the focus groups (17 times). As one participant commented:

> And I felt so frustrated, so. But I was just determined. So, I would go home and I would sit for hours, just… figure it out. And I'm thinking... You know I worked 20 years on computers. What about other people? (Participant name) would just been lost without me. (Female, late 60s)

Some participants found it difficult to get the software program to do what they wanted and line up with the vision of their story.

> Yeah, occasionally, I found that umm, my visual expectations were something coming out a certain way, was, ah, was lost because I couldn't figure out how to manipulate the program. (Female, over 80)

At times, this required negotiating with themselves and what they could realistically accomplish with the level they were at and what they may need to let go of.

> Because you can. I have one more thing. I think I gave myself permission. You know, I did some things that I'm not good at for this and I thought like I don't really give a shit. [overlapping conversation]. It looks like an amateur did it. So yeah, a lot of permission to just have some fun and it didn't have to be perfect. (Female, 60s)

> Perfect, yeah. We're not selling it. (Female, immigrant, 60s)"

One participant (Female, late 70s) also commented on how hearing your own voice back was not that pleasant although the multimedia approach allowed for music to temper this as she commented:

> I was surprised when I listened to it flat in my voice with and so I'm very glad you added the music.

Participants also commented on the role that facilitators played in creating a space to help them overcome their fears and challenges. They highlighted the need for

support and facilitation, and the participants also commented on how they appreciated being allowed to express themselves in the way they wanted. As one participant expressed they were “thrilled” at being allowed to make their own decisions as this conversation highlights.

> And then C coming in and helping with whatever needed to be helped... never making me feel intimidated or, or less superior or inadequate tech - in terms of technology. I never felt like that… And I think we all stepped through that door, quite successfully. (Female, 60s)

> And to build on that… every single one of you facilitators extraordinaire helped me. Umm, consistently you were absolutely in the place to honour our story and, and, affirm ah, that there - that you know, we were doing this to get something out of it for ourselves and I can remember umm, each one of you, G saying, L saying, C saying when we were working individually just things like umm, "so, here's something you might or might not want to do. But this is your choice… I heard that each time because I was, I don't know, rather thrilled…” (Female, no age provided)

5.3.4. Building confidence through accomplishment

Another theme that emerged was related to gaining confidence and a sense of accomplishment after completing their digital story project. Interestingly, this seems to lead nicely from a sense of learning and a sense of challenge, that the result was a sense of accomplishment. As one female participant describes:

> Achievement. When I surfaced last night having spent a lot of time over the weekend doing it, I just felt fantastic. I'd done something. It wasn’t perfect, but I'd done it.

Some simply made comments such as “A feeling of accomplishment” or “I got more confidence”, “Self-confidence.” Others expanded upon this with statements such as:

> I think maybe it develops self-confidence. I felt that. I - somehow I feel different than when I started. (Female, 90s)

> I think what H-P4 said, you have more confidence. And realize that maybe what you've got to say is interesting to other people. (Female, 80s)

> I think I got more confidence in myself. It - the accomplishment I have. Because it was easy to give up. (Female)

> I got an accomplishment, actually. I've accomplished something. I finished. It's a good feeling. (Female)

One participant commented how the process of being in control of their own project led to a sense of empowerment:

> Even though we were surrounded by experts, who [?], I think ah, it was my impression that, a lot of things that come out of this - this ah, process, is yourself directing yourself. You're doing your own thing. And we - I [?] that doing our own thing gives you empowerment to do things that are way beyond any other program. (Male, early 70s)

Another participant described the process as leading to an increase in self-esteem.

> I can't help thinking that umm, all of us have just bolstered our self-esteem. My self-esteem has gone up hugely since I've got involved in doing these story-tellings. And umm, I - I think all of - all of us deserve congratulations in getting some of those thoughts out of your mind and onto paper and into somebody else's mind. This umm, this is what we're all about. We're live people. We have lots self-esteem. (Male, early 70s)

5.3.5. Reflection on life experiences, connecting to the past enhanced through the multimedia process

Another theme observed in almost all focus groups was a discussion on how the digital storytelling process created a space to reflect and reminisce on life. For example, these participants' comments consider the process of reflecting back on life:

> I find that going back, 'cause I went back to my early days, when I was a little girl and I'm surprised that I remembered so many little things that happened. And I'd never thought about those for many, many years, probably 20 or 30 years and I thought that I start talking to my family and I said, 'Did I ever tell you about this or that, you see in case they don't get to see the video.' (Female, late 80's who lived in Vancouver area her whole life)

> I think the digital storytelling makes you really reflect on, on what you (muffled), makes you reflect on even your choices, and the story itself and it brings back memories and I, I think it's very good for you as a person (laughs), you know, because you're reflecting on all that. (Female, late 60s)

The multimedia features (e.g., images, sounds, music) also contributed to the process of reflecting on life and its meaning. At times this was seen to change the

participant's perspective. For example, one female participant in her 60s, who had previous writing experience, observed that the activity of finding images for her story transformed her story and the digital storytelling process brought balance to her life:

> No matter what story you tell, you, you're forced to reflect on the story and, and, you know, call up details and, especially, and it's one thing to have a story in your head but I learned that, by having to go and put images in the story, my story changed, because I, you know, the images reminded me of a time in my life that I hadn't focused as much on, happier times, I kept remembering the bad times so, it brought balance into my perception of my life.

In another example, a female participant in her late 60s described the creative process as bringing her back to herself.

> I'm excited again. It's, it's, it's brought me back, you know, my story's called "Dance Me Home". It's brought me home. The, uh, the actual process of looking at all my photographs and thinking about what dance has done for me has just really brought me back to myself.

Some focus group participants described how reflecting on one's life and then performing the act of sharing the story made the life story beautiful or emotional. It seemed to bring it alive for participants as noted in these comments:

> I found that when I start to tell my story there are like moments that I really, it's really very ah, very ah, vivid to me emotion that it can, it brings me back to a time when I was actually experiencing that. And that way automatically put in the emotion in your voice and tone match up. And then it will make a good story. (Female, early 60s, immigrated from China)

For some of the participants, recalling their past and then reliving these through putting the memory into words and images was an emotional process. A widow in her 80s noted that "[i]t made me cry. When I finished that story, it was like I relived it all over again. And it was very emotional."

Another participant pointed out that "Then the story of ones' life. It's beautiful, even if it's sad. When you tell it, it becomes beautiful." (Female, late 70s, immigrated to Canada)

However, reminiscence is not always something that is positive. The participants had to choose something they were ready to share and spend time on.

5.3.6. Connecting to others through story as legacy

Another theme that arose was the idea that creating the digital artefact preserved one's story, created a legacy, and was seen as an opportunity to connect with different generations. One participant described the digital story as "the documentation of your life in a three-dimensional form." A female participant remarked on how that "to have these stories, you know, memorialized or something." Some participants discussed wanting to share their stories with family and friends, others were interested in sharing life's lessons, and others wanted to preserve the event or story.

Creating a digital story, versus simply writing a story, seemed to provide a unique way to share legacy that allowed for a larger audience. Many of the participants were enthusiastic to share these simple, short films with very busy family members who they felt generally didn't have time. Wanting to leave the stories to family came up within the focus groups. As one participant remarked:

> I want to write something for my family, for my grandkids 'cause I don't get to see them very much. And they don't know a lot about my side of my family, so I really wanted something to, really lasting memories. (Female, 70s)

Other participants pointed out that their children or grandchildren were excited about the project and family history. The digital storytelling course and creation of their stories was seen as a great opportunity to share family history. Some examples:

> My kids are starting to be really interested in this, not everybody in the family is. My kids are interested and I know that, you know I think they get more interested in your history as you get a little bit older. Fortunately, my kids are in their thirties but they're really keen to have these stories. (Female, 60s)

> I think my grandchildren are <<slight pause>> very keen to learn more about me and, umm, they're so busy and they have such busy lives. This, I hope to have something, maybe, concrete to give them. (Female, late 80s)

> I got a journal from my younger daughter when I was 60 years old and there was a journal that's like, a, from you to me and it's like a, I think my story and my life and my relations and events in my life so I draw the inspiration from that and this digital story taking, um making, is a goal for me to make some ah, some memorable like account of my life so I can pass it down to my daughters. (Female, early 60s)

Another participant described how she wanted to give the digital story as a gift and that she could imagine their reactions.

> And I know that, at least I speak for maybe a couple of us here, where we're going to be gifting our children copies of this and so I'm really anxious to hear what my children have to say. Both of them are journalists. Both of them are writers. And umm, so I'm - I can just see them getting really teary-eyed. And really appreciating, you know, something like this, which they cannot do. They can write. But they don't know how to do a digital story. [Laughter.] I'm ahead of them. [More laughter]. (Female, late 60s)

Sometimes described connecting with family members they had not seen in a while but who they involved in the process of getting information on their story.

> Another participant and - was writing about her life and - during the war in Europe and she was ah, contacting her family there with the result that they - her niece is coming to - all the way from Holland to be at the presentation of her digital. And that's, I think, very wonderful. (Female, 80s)

The multimedia characteristics of digital storytelling were also discussed as being valuable to the preservation of a person's story and expressions of who they are. For example, voice, images or videos, could capture the essence of a person in a unique way. A female participant in her 80s commented on how she wished she had recorded her family members.

> It's very important as I realize, too, because I wish I had interviewed my mother and dad and used a tape-recorder.

Incorporating the storytellers voice in the story was observed as being valuable as seen, as observed in this conversation between focus group participants.

> When they're getting gone we're going to have our voice telling that story. (Female, late 50s)
>
> I know [[laughter]] (Female, 60s)
>
> …and it makes a difference, having your voice. (Female, 60s)

Others commented on the importance of creating a digital artefact for connecting to younger generations as shown by this conversation between two women in their 50s.

> I was thinking "why digital stories"? Why just not storytelling?... because that, essentially for me, was the thing which is writing the story, getting the story but I can see where you're talking about generational,

> are much more of a visual society now or generations are more visual and it makes it more accessible, stories [[inaudible]] it's more media, so that's really great.

Some participants discussed the value that younger generations would get from hearing the stories of their lived experiences to really see what it was like. As a male (late 50s) participant stated, “I think it, it's a bridge for generations.” Another participant went into more detail reflecting on:

> It was just so interesting to think about all the things and it brings the day that we lived as young people and kids to today's generation if they happen to be listening to our stories. There's just so much. It's so much changed. If you had a penny, in our day, you were rich. Yeah. And five cents. And to be able to afford a chocolate bar and a pop at the same time was absolutely scream. (Female, 80s)

One participant was concerned that “this could be the forgotten generation.” And another participant pointed out how important the sharing was

> However, the benefit, that is, like, was mentioned, the experiences these people bring, they have lived a large part of their life with more years to go. But the experiences that they bring can be foresight and the depth of what they have gone through I think is something that is absolutely worth-while.

One quote by a male in his late 50s demonstrates the value observed of leaving a digital story legacy: “I think it's also to (muffled) the next generation that we share these stories with the younger generation, to pass it on.”

Some participants saw their stories as a gift for future generations and a way to pass on learning as these participant comments display:

> What happens when a parent dies? All their stories go with them. And they’re gone. And by encouraging umm, elders, to tell their stories now and to tell those stories digitally, you are umm, giving the generations to come, you're gifting them your stories. And they're not going to die with you. And I think that's the jewel. (Female)

> We can take these stories and share the legacy of what's important that's, this is the community of the Vancouver. (Male, late 50s)

> Memories and umm, telling stories, I felt like a grandpa talking to these grandchildren and I can tell them who I was and who they could expect to be in their future. And this is wonderful. (Male, 70s)

5.3.7. The issue of time: A time commitment and wanting more time

This issue arose both in the evaluation forms and in the focus groups. Participants discussed time in two different ways. Firstly, they discussed the time commitment required to create a digital story. Many pointed to the amount of commitment and hours spent at home working on the project to finish it on time. As one female participant expressed:

> I think one of the, sorry, one of the important things I found was that I needed to actually a lot of time on my own and at, at home. I think, from the class, you guys gave us the tools, like gave us the software, told us how to build a story, but, umm, what I found was that I had to go home and create it.

One participant in her 80s discussed procrastinating writing her story until the last minute and then she laughs and said “It's my, my story. I didn't, I, I work on it from eleven o'clock to two thirty.”

Second, they discussed wanting more time. These were mainly quick comments of “we need more time” or “not enough time”, “one more class”. Some specified specific recommended adjusted time in such as “I think 2 hours wasn't enough. I think 3 hours with a break, short break.”

One difficulty with time was that the libraries and centres did not always want to commit to longer timelines. Furthermore, although participants wanted more time, when pressed there was some debate whether they would have signed up if it was longer.

5.4. Viewer feedback

Data was also examined on viewer feedback. The viewers were individuals who attended one of the “Sharing Our Stories” events and included community members, friends, family, and digital storytellers. This session was held at community centres and were advertised to the public in the local newspaper. Participants who had created stories to be shown recruited family members and friends to attend. However, others from the community also attended as these events were free and seemed interesting.

Story viewers’ feedback (N=103) were collected during the “Sharing Our Stories” events that showcased the participants digital stories. Story viewers were asked to rate

each story and comment. At the end, they also chose their three favorite stories, and were asked to comment on why they chose these. The rating scale allowed story viewers to rate the stories from 1-5, where 1 (not at all), 3 (moderately), 5 (extremely), on whether the stories were of interest and enjoyment. Viewer ratings of interest and enjoyment of the stories (Table 12) showed that all stories were moderately to extremely interesting (M = 3.24 to M = 4.88) and enjoyable (M = 3.26 to M = 4.81).

Table 12 Viewer story ratings

Story	Session	Interest*	Enjoyment*
1	1	3.67	3.61
2	1	4.64	4.80
3	1	4.50	4.43
4	1	4.20	4.36
5	1	4.64	4.52
6	1	3.86	3.73
7	1	3.67	3.58
8	1	3.49	3.39
9	1	4.18	4.20
10	1	3.54	3.68
11	1	4.37	4.29
12	1	3.24	3.26
13	1	4.15	4.20
14	1	4.07	4.05
15	2	3.69	3.93
16	2	4.73	4.81
17	2	4.14	4.07
18	2	4.38	4.31
19	2	4.50	4.56
20	2	3.63	3.69
21	2	3.57	3.40
22	2	3.31	3.31
23	2	4.00	4.14
25	2	4.38	4.31
26	2	3.53	3.73
27	2	3.73	3.67
28	2	4.36	4.29
29	3	3.75	3.63
30	3	4.75	4.75
31	3	3.49	3.29
32	3	3.80	3.80
33	3	4.40	4.60
34	3	4.00	3.80
35	4	4.03	3.85
36	4	4.03	3.81
37	4	4.08	3.86
38	4	3.77	3.82
39	4	4.07	4.08
40	4	4.11	4.05
41	5	4.13	4.13
42	5	4.38	4.57
43	5	4.88	4.50
44	5	4.50	4.25
45	5	4.43	4.43

The top-rated stories incorporated many multimedia aspects (visuals, sounds, moving images, music). They had a clear theme and strong story line. For example, two exemplar stories (those rated above 4.5 in both categories) are summarized below:

Story 2: This story traced the role of dance in the storyteller's life. She explored her early love of dance and how it guided her life. When she was in her 60s, she was faced with a physical ailment which hindered her body's movement. Slowly she overcame this condition and was able to dance again, finding a dance group for people over 55.

Story 43: In this story the storyteller recounts an incident from childhood in Malaysia. She discusses her mother's great cooking, but inconsistent wine making. At one point, her mother's wine exploded and they thought it was a robber, so the family hid. They soon realized it was her mother's wine (they could not afford grapes so she had attempted to use raisins). Her little brother decided that this was how space ships could fly.

Those that were rated not as highly (Below 4) usually lacked a clear theme or story to guide the viewer. Some of the participants, when asked about the message of the story, wrote "no message", "nice scenery, no story". Thus, these stories tended to lack a clear storyline, and instead focused on family history.

5.4.1. Viewers' Feedback on their three favorite stories

Story viewers were also asked to choose their top three stories and explain their choices. Of the 103 participants who attended the event, 72 participants answered these open-ended questions. A simple content analysis was conducted on the viewer responses. Some participants (n=10) simply wrote "it was interesting". Of the participants, 27 participants used words such as "connected to" or "related to" or "connection to the story" or they mentioned how it touched them such as "touched something in me and my story". What they connected or related to varied, but many described an emotional connection or relating to the theme or meaning.

Connected/related to the stories theme or lessons

The connections were often related to theme or meaning or life's lessons. For example, one viewer wrote "I felt connection with the story (journey) and with the background of the storyteller". It seemed to get some viewers to consider their own relationships *"Short and sweet message begs me to respect my relationship with my mother and daughter."* One viewer wrote: *"They personally resonated with me, my dreams, my family values, principals and my free-spirited love of life, people, cultures and faiths"*

Emotionally moved the viewer

The stories touched many of the viewers at an emotional level. They expressed how the stories made them feel. Emotive reactions were expressed by comments such

as: "*touched something in me and my story"; "kept my interest because entertaining or emotional"; "Creativity, spirit, they pulled me in emotionally" "evoked emotion"; "Touched my heart. Reminded me of my story".*

Interest in the theme, meaning, lessons

Viewers seemed to appreciate hearing what they deemed as meaningful stories as one viewer wrote: "Because they had a powerful message, meaningful". Some viewers wrote the theme that caught their attention such as "*love*"; "*Appreciation of family strength - self growth"; "Determination and perseverance of the individual's family"; "I like stories of overcoming adversity";* "*They are valuable lessons to be learned in a society we live now"; "They reflect on human nature and emotion that are common to everyone"*

In one of the more extensive responses by an older adult female viewer suggested that the themes were very important to women as she wrote:

> Themes + appreciation of women, work of mother's importance of family. For the Dance video, my favorite, an unusual perspective to focus on the transitions, the ongoing work of women maintaining vital lives as they age.

Aesthetic and design of stories

Some viewers liked the artistic construction of some of the stories. Those who chose stories because of stylistic appeal made statements such as: "*Great presentation, nice slides. Inspiring"; "They all had a good story arc"; "I enjoyed the arc of these stories. Several of them had a good match between story and pictures"; "Well put together and had a good message"; "Beautiful images"; "Appropriate music, voice, variation".*

5.5. Personal reflection:

In the first course I facilitated, I was touched by the emotional and reflective depth that is held by how we experience and see our life stories. By chance, the group I was working with consisted of seven older women whose experiences were also embedded within a cultural reference of a society changing towards valuing females within the workplace and elsewhere. Many of these women had originally wanted to come and tell stories about others, some claiming that they had no stories of interest in

their lives. In truth, they all had rich lives, but it took some coaxing to get them to accept this and then begin to explore and reflect upon their lives as being full of valuable life experiences. Once this occurred, the women became excited and engaged in the creative and reflective process.

Another aspect noted in this first course was that some participants had memories arise, narratives they wanted to tell, but they didn't seem ready to tell. These frequently involved upsetting experiences. Others found themselves telling stories they were surprised to be telling. Memories seemed to come up for them, and they were not sure why they were suddenly telling the story. The experience that they each went through seemed deep. Throughout my work within this project, I am always surprised to see how excited participants get to be telling their stories and sharing these. Furthermore, the stories told are being permanently written and set for future viewing. At a conference I presented at, I met a person doing similar work with various age groups. She was concerned about one of her participants who wanted to write about a fight she had with her boyfriend a couple of weeks previous. The only advice I gave was to ask the participant "do you really want that fight to be set in stone?" Within the project, this also occurred occasionally where a person may want to choose something that is traumatizing, but is still a fresh wound.

5.6. Summary of findings

The goal of this research was to examine the experiences, benefits, and challenges of older adults who participated in one of the digital storytelling courses. Overall, the results reveal some compelling findings with the participants reporting a rich experience within the learning environment. In summary, viewers rated the facilitation, process, and software highly. Most participants found the level of the course to be just right or difficult. Most participants reported an increase in digital literacy skills. In the evaluation forms they commented on the benefits of social interactions, learning something new, the creative process, and the facilitation. However, the main challenge reported was needing more time.

Within the focus groups, participants discussed the experience and a rich array of benefits and challenges. Table 13 shows the various insights from the analysis that arose. Once again, the social connections and interactions were valued as an important

part of the process. Participants reported learning and feeling cognitively stimulated through the process; however, the course was also seen as challenging (particularly learning the technology). When they had finished their project, many participants reported a sense of accomplishment and increased confidence. Many participants discussed the process and effect of reminiscing and reflecting on past events, and these brought new understanding and emotions. Older adults felt that creating a story was a way to leave the legacy of their story and connect to different generations. Finally, the time commitment and time required to create a digital story came up again within the focus groups. The viewers enjoyed the stories and rated many highly. Those that had a clear story and/or a clear message and used many of the multimedia tools available to them seemed to be rated highest. The stories rated lower were commented on (by those who rated them lower) as lacking story or theme. The stories the viewers liked best were usually those that moved them emotionally and/or where they connected to the theme, meaning or lesson of the story. Some viewers mentioned design aspects such as the choice of images as what they liked best about a digital story.

Table 13 Insights on main findings

Findings	Possible links to course	Insights from research analysis
Increased social connectedness and learning from each other	1. Story sharing, story circle, having first classes focus on sharing their life stories. 2. Focus on single story and its evolution.	1. The shared space to explore each other's stories was important to creating a community of learners. 2. Observing others' stories transform as their own did and seeing others struggle as they did, created a sense of comradery.
Learning from each other, about new media, and about self.	1. Story sharing, through actively using the technology to create an artefact, requiring participants to integrate different media into their story. 2. Getting them to think about the emotions, tone, point of change in the story.	1. Participants learned from each other, both from providing feedback, but also from hearing about others life experiences. 2. Digital storytelling is a way for older adults to be engaged in increasing digital literacy while being active in creating an artefact. 3. Having to sort through photos and include voice made participants think more deeply about the layers of their experiences. 4. They learned about themselves, not only themselves at that moment, but about who they are and how they think about their past.
Reminiscing and reflecting on the past brought up strong emotions and allowed them to restory the events.	1. Sharing stories and thinking deeply about one event. 2. Giving the event images and sounds. (Multimedia) 3. Participants not only needed to think about their emotions when the event occurred, but also how they feel about it now.	1. Because participants had to add photos and narrate their stories, it made them rethink the story in a different way. They not only go through how they want to tell it, but they also have to think about the tone, pace. 2. Depth of understanding about the one event/story in life.
Felt a sense of accomplishment, increased confidence	1. Having an artefact of their accomplishments and challenges as the course outcome. 2. Being given support from facilitators and participants, while also being allowed to make their own choices. The story was theirs.	1. Creating the artefact, even when it is not perfect, made them feel confident and that they accomplished something. This feeling is important as it makes the experience of learning new technology worth the effort. 2. Some participants commented about how much they liked being able to tell their story. They didn't feel they had many opportunities to do this in their day to day life. Having people hear your story gave them an increased sense of value in life.
Digital stories created a good venue to share their stories, and leave their stories	1.Because they were a group of older adults in the course (and not mixed in age), it allowed the freedom to consider their role as storyteller.	1. Many of the participants saw their stories, and others in the class, as a gift or legacy to their family and other generations. Since the participants all reflected upon different points of history, and diverse cultures, they seemed to see the importance of the stories in giving information to others. This seemed to not only be about their story, but noting how others' lives were rich or remembering history with others. There was a sense it could be forgotten.

Chapter 6. **Discussion**

There were a large number of female and immigrant participants who attended the course; however, this is not surprising for several reasons. First, in previous research conducted with older adults, there is a tendency for a greater number of women to volunteer and participate (Schell, et al., 2016; Kaufman et al., 2016). Boulton-Lewis, Buys and Lovie-Kitchin (2006) found that being female had more significance for a desire to engage in lifelong learning. The high number of immigrants within the course was also not completely unexpected as Metro Vancouver, BC, Canada, is very multicultural. The 2016 Canadian Census reported 40.8% of Vancouver residents are immigrants (Statistics Canada, 2017). However, the fact that over half of our participants were immigrants is interesting since it is above the proportion reported for the city. Furthermore, some stories were influenced by immigrant life events that could affect the stories told (Hausknecht, 2018). Some immigrated as children while others were newly arrived. These factors may have contributed to the great amount of diversity in the group of older adults who attended the course.

Participants ranged in their initial computer use and skills with some participants who had never used the Internet, nor did they have an email account. Although there were only a few participants with no computer experience, the fact that they completed a digital story was important to consider as it suggests that all people at all skill levels can create a digital story. However, they often required strong scaffolding. The project team did not want to make the course only accessible to those with previous computer experience since those with limited skill could benefit from engaging in the activities. This meant there was varying computer skill ability within the classes. On the other hand, most participants rated their skill level as beginner and intermediate. The digital storytelling course seemed to be an effective approach to engaging participants in learning computer skills. Computer literacy can be valuable for other areas of life such as social connectedness and health literacy (Delello & McWhorter, 2017).

Although older adults are often portrayed as a homogenous group, they are varied in most areas including cohort, cultural background, and functionality (Chen, Kim, Moon, & Merriam, 2008; Czaja et al. 2009). They should not be perceived as static, but older adults are on a life journey that is still in motion (Hagestad, 2018). This is important

as educational designs should consider diversity, and the individual and group journey. A digital story as a basis for the content of the course means that it is accessible for multicultural learning (Darvin & Norton, 2014).

6.1. Design considerations and evaluation

Overall the learning design was rated highly by participants. The participants were satisfied with most aspects of the course. This did not change from the initial evaluation that occurred after the first year that the course was implemented (see Hausknecht, Vanchu-Orosco, Kaufman, 2016b, Hausknecht, Vanchu-Orosco, Kaufman, 2017). In general, the program has maintained its core approach and the design seems sound. The social constructivist approach to the learning design appears to be valuable and helps create an environment where participants are actively engaged in learning. Creating a collaborative, social environment where participants share their experiences and understanding and gain feedback from the facilitators and their peers was important. This allowed for multiple perspectives for reflective practice and negotiating meaning (Jonassen, 1999; Woo & Reeves, 2007). This also provided a space for discourse to help create a learning community (Jonassen, 1999).

There were a variety of perceptions on the difficulty level of the course with the greatest number of participants suggesting that the course was just right or a little difficult. To reach the goals of the course (creation of a digital story), a high level of scaffolding (support for learners), such as peers, artefacts, and facilitators were needed. Scaffolds are supports designed to help and guide the learner towards their achievement (Hannafin, Land, & Oliver, 1999). In the current course design, the scaffolds had to be flexible and multiple to account for participants' different skill levels coming into the program. Since some participants required extra help and time to finish creating their stories, additional assistance was required. As was reported on the evaluation forms by participants, this was appreciated, and the facilitation was reported to be one of the best aspects of the course. However, this also leads to the difficulty of sustainability. Sustainability is important to move research on older adult programs into practice (Estabrooks et al., 2011). The sustainability of having regular one-on-one sessions is not realistic in many community programs. Time limitations were one of the main factors affecting the program and adding extra sessions during the week worked to overcome

this. However, the program could use some restructuring to examine approaches to sustainability and account for the time it takes to create the digital stories.

Although there was a high level of facilitation, participants created their own individual stories with the freedom to express themselves and their life narrative in meaningful ways. Moreover, they became digital producers and not simply consumers. Similar to the findings of Waycott et al. (2013), the older adults in the program were eager producers of digital content and the program was seen as a rewarding experience. There was also an appreciation of being given a new way to express their stories and an opportunity to do so. The participants were required to learn about story, self, and the challenge of a new computer software program (and some may even need to learn computer skills). The program design allowed participants to explore these areas through a project-based approach where learning occurred through the practice of creating a digital story.

The course was designed to facilitate a knowledge building community where learners contributed and supported each other's understanding (Jonassen, 1999). The learning occurred within a sharing environment while also allowing for individuality in content and story. Thus, it seemed to allow for intersubjectivity and subjectivity. This seemed to encourage inclusion and diversity as participants often discussed others and their stories as being impacting and beneficial. Having a shared learning culture for older adults, particularly where they can share their life history and make meaning from these, seems to be a rewarding approach. Within the focus group interviews, the power of sharing stories and the experience of creating a digital story of a life event is evident. The focus group interviews seemed to suggest that the course created a community. Community building was an essential part of the design and is invaluable to creating a sharing environment. The collaborative, social environment allowed participants to share experiences and understanding. These findings confirm previous research into older adults learning and that they value social opportunity in learning and leisure (Mannell & Kleiber, 1997; Kim & Merriam, 2004). It also seemed to provide motivation for some participants to keep going.

6.1.1. Addressing challenges for future instructional design

A few difficulties arise with the course design. First, is the course purely for the story creator or is it also for the viewer? This issue came up a few times in the course design. Allowing participants to create the story they want is important. At the same time, providing tools to improve upon story structure is also valuable. In the course, participants are both writer and editor. As noted in other studies (Waycott et al., 2016), there is a tension between wanting to edit the participant's work to make it more appealing to a specific audience and allowing the participant to produce their work in their own voice. In the course approach, participants were instructed in story arc through lessons and a story circle, but not all learners chose this direction. This also may have been an aspect that varied between course facilitators. Although there were guidelines for lessons on writing stories, the extent that this was pushed depended upon the facilitator.

If there was more time, I would allow participants to explore story arc and finding their moments of tension within their stories. As noted, the preferred stories had a clear story or theme. Thus, these often used a proper story arc and had a point of change/climax. However, it did not matter whether the stories were across a life span (such as the meaning of dance) or a condensed event (such as the wine explosion). The tension between what is seen to be a good story and what the participant wants may simply depend on where the facilitators are placing value. Within this project, the value was on the educational experience for the participant. However, it seemed part of the motivation was being able to share their work with others.

Time was a difficulty. The participants needed more time to create a solid story and gain the technology skills and edit their story. Ten weeks was not enough, and most participants thought a couple of more weeks would be beneficial. Some participants suggested more time with WeVideo, while at the same time there was mixed emotions about extending the course. As most of the social connectedness was created at the start of the course where exploring stories and finding their story, sharing their story and hearing others' stories occurred, there was also some resistance to cutting the time for this. As mentioned, we put extra tutorials on for those that needed it; however, this may not always be affordable, convenient, or sustainable.

Another option is to have the 10-week course and then have a regular a self-directed group that meets weekly. The difficulty is in creating a self-directed group. Within communities of practice, there needs to be those who take a leadership role (Wenger, 2000). In other instances, such as with digital games, similar issues occurred (Hausknecht, et al. 2015). As a one-off educational experience, it shows value, but maintaining these skills has not been examined. Furthermore, a transfer of these skills is difficult to determine. Many of the participants required extra sessions to assist them with the program. Some participants were nervous to access the computer program at home since they didn't want to mess up what they had done. An online community of practice, that links the different participants together, may help serve as a place to stay connected, but also ask questions of each other.

The most important aspects to keep in place are providing a supportive environment, allowing older adults to give feedback to each other and share their experiences, and to make sure they have a finished artefact (accomplishment). Many of the older adults commented on their struggles and frustration, but also mentioned that they kept going because of the support of facilitators and others.

6.2. What were the experiences, benefits, and challenges of older adults in a digital storytelling course?

6.2.1. Educational experience, benefits and challenges of the digital storytelling course

The digital storytelling course was perceived to have various educational benefits, not only for gaining skills on how to create a digital story through the experience, but there were numerous other reported outcomes such as learning about self, story, media and increased digital literacy skills. In the evaluation forms and the focus group interviews, learning something new was an apparent benefit of the program. Learner's commented on their learning of digital technology and story structure; however, they also commented on learning from each other's stories and about their own lives. Thus, there was a level of autobiographical learning (Garcia & Rossiter, 2008) and the stories of others impacting their understanding of the world (Garcia & Rossiter, 2008). As one female learner from the course described, "…experiencing other peoples'

stories makes you, I don't know, better person, I don't know what it does. But it, it just makes you, maybe, understand people more."

Almost all participants reported gaining skills in digital storytelling. This was a positive result for the design of the course since one of the main educational purpose was for participants to gain skills in digital storytelling. However, digital storytelling skills may have other benefits; for example, learning about life, self and others. Furthermore, many participants also suggested that the course improved their digital literacy skills. The learning of technology was embedded in the activity of the program. The authentic practice of creating a digital story with digital technology allowed learning to occur through an activity (Reeves, Herrington, & Oliver, 2002).

Digital literacy skills

Increased digital literacy was one of the learning outcomes theorized from previous research (Sadik, 2008; Robin, 2008) where these aspects improved through the activity of creating a digital story. For example, digital storytelling has been effective for multiliteracies with younger learners (Sadik, 2008), and so it should also be effective for adult learners. We found that by engaging older adults in the activity of creating a digital story, many participants reported an increase in their digital literacy skills. At the start of the program, participants reported a varying level of digital skills with some having little to no experience. Thus, skill improvement varied, but overall participants described some level of digital literacy improvement. Participants digital skills improved more in relation to computer and software programs versus internet skills. This is not that surprising since unless participants were engaged in extensive searches for photos or music, there was limited internet requirements. Whereas, the computer and software were required to create the digital story. Using project-based learning to increase digital literacy appears to be a viable approach (Chun-Ming, Hwang, & Huang, 2012). These informal and practice-based approaches to increasing digital literacy may be an important consideration in future designs.

It may be useful for older adults to improve digital literacy skills as technology provides various benefits such as access to health information (Levy, Janke, & Langa, 2015), lifelong learning opportunities (Radojc & Mlakar, 2012), social connections (Delello & McWhorter, 2017), and increased well-being (Shapira, Barak, & Gal, 2007). For example, Millard, Baldasser, and Wilding (2018) point to the benefit that increasing

digital literacy may have on older adult immigrants' well-being as it provides an opportunity for emotional support at a distance. Furthermore, building seniors' skills and confidence through a digital story project could be important to their continued well-being and to help maintain a sense of empowerment (Shapira, Barak, & Gal, 2007; Hill, Betts, & Gardner, 2015). Within this thesis, some participants reported an increase in confidence and sense of accomplishment at the end of the course.

The results of this study suggest that digital storytelling may be a beneficial way to engage older adults in an activity that could increase their digital literacy skills and other 21st century skills while also allowing them to explore identity. Since older adults are not usually learning for career prospects, they require learning experiences that are meaningful to them and where they can engage in meaning making (Kim & Merriam, 2004; Russell, 2008). Allowing older adults to create an artefact for sharing with others is a meaningful and authentic activity. It allows the learners to be in control of their content and process which is an important aspect of andragogy (Knowles, 1980). Furthermore, it requires a higher level of problem solving than memorization, draws on their past, and relate to their personal lives, all of which Knowles (1980) outlined as important principles in the design of adult learning. Digital storytelling gives participants a focus and purpose for learning multimedia, technologies, and being digital producers. The learning goal is "owned" by the learner (Jonnassen, 1999). Engaging older adults in such activities may be an important way to help break down barriers and engage them in learning new technologies.

Benefits of learning somethings new, challenges of learning something new, and feelings of accomplishment

One of the most prominent themes was that participants learned something new and felt cognitively stimulated. This is a valuable result since the main goal of an educational course is that learners learn. Within this experience, some participants described an intensity of mental stimulation which might suggest that the combination of reminiscing about life, creative choices within a multimedia design, and challenges with the computer may have created a state of deep learning. Sadik (2008) suggests that using multimedia in digital storytelling requires leaners to look more deeply at the content. When that content is self, it can create a deep exploration of identity and the life course through the narrative and multimedia decisions.

Although increased digital literacy was important to the outcomes of the digital storytelling course, it did not occur without some struggle with the technology. Some of the participants reported finding the computer and software challenging. Depending on the individual, at times simply understanding basic computer instructions that many of us take for granted, such as “double click” were a challenge. For others, the program came with its own difficulties as it contained many aspects and layers. However, many participants reported pushing through with encouragement and facilitation. Previous studies have suggested that one of the main factors that help older adults overcome computer learning challenges is through social factors (Neves et al. 2015). Within the program, the other participants and the facilitators played this role with only a few getting support from outside the program. The course was bound by time offered at centers as well as time commitments of older adults. Nevertheless, the struggles were also paired with a sense of accomplishment once they had completed their project. Time was also a challenge within the study.

Although some participants seemed to find the computer aspects challenging, it seemed to be offset by a feeling of accomplishment once they had managed to complete the project or as one participant stated, “mastered this ridiculously stupid program we've been using”. Learning within constructivist learning environments is often discussed as requiring moments of puzzlement (Cunningham & Duffy, 1996). Within this study, these moments of puzzlement can be seen through the participants’ struggles with their personal stories and with the technology. However, this led to satisfaction and feelings of accomplishment. Some participants even reporting that it was empowering and led to increased confidence. If paired with participants feeling that this can be a source of legacy and artefact to be shared, it may create a sense of agency.

Learning through shared storytelling

Although digital literacy is valuable, the learning extended beyond technical and skills acquisition. Within the evaluation forms and the focus group interviews, an equal number of participants commented on how they liked the socially shared experience and the learning experience. These were often seen as integrated. Many participants commented on learning from each others’ stories and perspectives. This suggests a deeper learning about self or identity as well as others. Similar to findings and theories by Birren and Deutchman (1991), the activity of sharing stories, and then spending time

reflecting upon them, seemed to contribute to a deeper self-knowledge. The participants commented on how examining their past made them relive experiences and reconsider the experiences. As Garcia and Rossiter (2010) describe “autobiographical learning provides opportunities for the learners’ construction and reconstruction of their own narratives of meaning – ever modified and enlarged by the learning process” (p. 1094).

Within this study, the social interactions were one of the most important experiences for the older adults. The value of these interactions showed up in the evaluation forms and again within the focus group interviews. Every focus group mentioned the shared social experience as something valuable within the program. Hearing other participant’s stories and getting feedback on their story allowed for multiple perspectives and for reflective practice and negotiating meaning (Land, Hannafin, & Oliver, 2012). The duality of learning about self while also learning about others seemed to form a rich experience which led to noting varying worldviews. As one participant states “I did hear a lot of stories that I think really enhanced my understanding of, of different communities that are here.” Furthermore, previous studies have found that older adults find leisure and educational activities more rewarding when they are social (Mannell & Kleiber, 1997; Kim & Merriam, 2004). Thus, the social aspect of the course seemed to also serve the important role of being a motivator within the program. Some participants expressed how they looked forward to attending and seeing the other participants each week.

Although the participants shared their stories, it is hard to determine the exact influence that the intended audience had. However, participants seemed to be influenced by the classroom feedback, appreciating the insight. Within the classroom interactions, particularly the story circle, storytellers received an immediate reaction from their peers. This was useful for gaining different perspectives on their story, but it also serves the purpose of determining how future audiences may react and (Miller & Pennycuff, 2008). Further, the course was designed with an awareness that the stories would be shared with family or others. As seen in the legacy theme, participants often commented on their awareness that they were leaving a piece of themselves to a specific audience.

The reciprocal sharing of personal stories seemed to allow participants insights into others that they may not gain through other learning experiences where storytelling

is not a part of the experience. As one participant suggested “we're all strangers, but then, by the end of the time you know these little bits about that person… it's personal.” Telling their own stories and gaining feedback made participants reflect on their own lives, while hearing other’s stories provided insight into others’ lived experiences. Often participants and those who attended the “Sharing our Stories” event discussed connecting to other’s stories.

Creating and sharing digital narratives for lifelong learning (Growth)

The digital storytelling course seemed to provide an opportunity for lifelong learning in a multifaceted way, such as providing an opportunity to gain digital skills, socially construct meaning, and restory self-narrative. Creating story and then restorying these personal narratives is a process of personal growth, and further Clandinin and Connelly (1989) argue is “a fundamental quality of education” (p. 2). By reflecting on their past lives, participants seemed to learn from their past and from others. A person’s life course includes the events and roles that a person experiences and how these change over time (Giele and Elder, 1998). Creating digital stories created an opportunity where the older adult learners could examine past events and the roles they had. There are various transitions throughout the life course which lead to changing roles, status, and life situation (Hutchinson, 2011). Many of the participants were able to look at these from their current perspective and re-examine what they meant as noted in the theme of reflection and reminiscence in the focus group interviews. As person Pasupathi, Mansour, and Brubaker (2007) suggest, people will examine their past experiences to better understand how they became their current self. Creating stories from the events in their lives and sharing these with others can help people form meaning and understanding about their lives (Polkinghorne, 1991).

Some research into older adults’ perceptions on healthy ageing has highlighted the importance of self-acceptance and being engaged with life and self-growth (Reichstadt et al., 2010). Furthermore, creative activities may contribute to successful ageing through a sense of competence, purpose and personal growth (Fisher & Spect, 1999). Programs that allow creativity in the exploration of story and learning technology may be a useful approach to enhancing this. The recollection of autobiographical narratives seems to create a point of puzzlement for some of the participants “No matter what story you tell… you're forced to reflect on the story … call up details … it's one

thing to have a story in your head but I learned that, by having to go and put images in the story, my story changed, because I, you know, the images reminded me of a time in my life that I hadn't focused as much on, happier times, I kept remembering the bad times so, it brought balance into my perception of my life." Thus, a person's own memories act as the point of epistemic conflict, through self-reflection (Cunningham & Duffy, 1996) the participant may be able to resolve this conflict.

Memory is continually being constructed upon and is an accumulation of interactions (Ertmer & Newby, 1993). When individuals recount a memory, it is not an exact replica of the original event (Schacter & Addis, 2007). The memory is shaped by the individual's current understanding and the context in which it is recalled. Thus, with digital storytelling the initial meaning of events may be transformed when recalled at a different point in time. This can give older adults an opportunity to "restory" their lives (Kenyon & Randall, 1997). Thus, they are not only recalling the story, but they are rewriting it, changing its meaning and aesthetic quality through a multimodal format. This may mean that they are not simply the main character guided by unknown forces but are also the writers that have some control over a future self (Rossiter, 2002). Many participants commented on this process of reflecting on their lives and through this process there was often some level of growth.

6.2.2. Experience of connectedness throughout

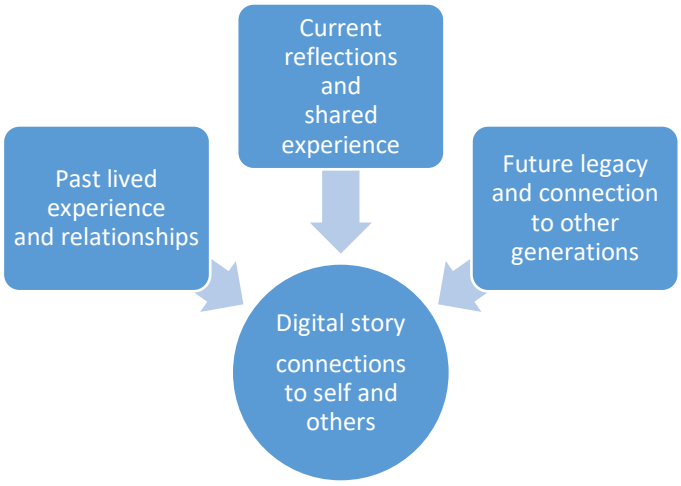
"Stories are a communal currency of humanity." Tahir Shah, in *Arabian Nights*

The results also suggest that creating digital stories within a social environment can lead to connectedness. Connectedness has many definitions and has evolved within the literature and can involve many areas where the person has a feeling of relatedness (Townsend & McWhirter, 2005). Storytelling may be an important opportunity to connect one area of life to another; for example, home to school (Miller, Cho, Bracey, 2005). For older adults, it may connect past to present (Hausknecht, Vanchu-Orosco, Kaufman, in press). The connectedness within the digital storytelling course was not limited to social connectedness in the immediate environment, but a connectedness that goes beyond that to the outside community, to themselves, to past and present.

Digital story connects to self and others (Past, present, future)

Connections were created throughout the digital storytelling course. These connections were to themselves and others across various time lines (Figure 5). Some of the main themes that occurred were related to connectedness to self and identity through reminiscing about the past, reflecting on the past (from a current perspective), and thinking about how these stories, and who they are, would be preserved in the future (legacy). These stories were shared and examined within social contexts. Thus, remembering the event connected them to people of the past (also seen in Hausknecht, 2018; Hausknecht, Vanchu-Orosco, Kaufman, in press), connected them to the people within the storytelling course, and connected them to future generations. The digital storytelling course and sharing event also connected to others' stories. Participants commented on how the sharing of stories developed an understanding of the other. Thus, it seemed to create connections to self and others through creating connections across time (Figure 5).

Figure 5 **Connectedness through digital storytelling**



Connecting to self through reminiscence, reflection, and a message for the future

The digital storytelling course seemed to create a learning environment that allowed participants to reflect on their life course and reflect on the trajectories and events of the past. This seemed to allow them to connect to their past, and who they were in the past through the stories told and the exploration of the multimedia choices made. Thus, participants explored their past through the writing of their stories, and through the search through photos and decisions on other media pieces (Hausknecht, 2018). Older adults may find that they connect to stories of the past more vividly

(Manchester & Facer, 2015). This may give learners an opportunity to connect to these past events and reconcile. Indeed, many of the participants commented on working through their stories and reliving these. This process can create strong emotions as they reminisce and recreate events as one woman stated ""[i]t made me cry. When I finished that story, it was like I relived it all over again. And it was very emotional."

Additionally, the act of reminiscing on past stories created an opportunity to reshape understanding of the events recounted. Connecting to these past stories in the present required reflecting on their current values and understanding, and re-assessing these. Reminiscing can give participants a sense of meaning as they recall events and work through them (Bohlmeijer, Westerhof, & Emmerik-de Jong, 2008). It can allow older adults to reconsider their narrative identity (McAdams & McLean 2013). McAdams & McLean (2013) suggest that an individual's narrative identity helps them situate their lives and self within the social and societal contexts. When people are able to focus on one of their narratives, even a small piece, over an extended time, it makes them dive deeply into that moment, that understanding. With recounting the story, the storyteller begins to be more than one person at a time and contains a multiplicity (Ochs & Capps, 1996). Thus, the storytellers within the study share their reflection on what the story means now to their moral understanding, who they are, or reconceptualization of what the event meant to their life direction. This can be seen in how some participants described the process as bringing balance. They become the person in the story (another self) and the person they are now (Ochs & Capps, 1996). This can then shape who they become in the future.

A previous study that examined the process of a participant through a reflective journal they kept, found that it is not only the re-examination of the narrative, but having to find photos and a soundtrack that can reshape understanding (Hausknecht, 2018). She examined her story through the eyes of a carefree child, an adult who understands hardships in life, and from her current role as a grandmother. With a digital story, these are all explored through the narrative and the multimedia choices. Similarly, Brushwood Rose & Granger (2013) found that the multimedia approach to storytelling created surprising shifts in the original meaning of the immigrant women's stories in their study.

The multimedia approach seemed to come with its own affordances and constraints. As discussed earlier, the constraints mainly focused on the challenge of the

technology and the time it took to create a multimedia story. Although the affordances were often related to the preservation of the stories and connecting these to other generations, the act of having to explore story through images and sound also had their own affect on reflecting upon the story. As one learner who took the course commented:

> I'm excited again. It's, it's, it's brought me back, you know, my story's called "Dance Me Home". It's brought me home. The, uh, the actual process of looking at all my photographs and thinking about what dance has done for me has just really brought me back to myself.

Participants' relationship to their past seemed to change as they formed new perspectives on the meaning of the narrative and as it was transformed through the digital story process. Having to explore life story through multimedia seems to require individuals to redefine their understanding of these events (Davis & Weinshenker 2012; Hausknecht, 2018; Hausknecht, Vanchu-Orosco, Kaufman, in press). With creating a digital story, it brings with it its own grammar (Davis & Weinshenker, 2012).

Older adults felt accomplishment in creating their stories, but also saw them as something valuable to share with others. Other work with different cultural groups also noted the sense of value that digital storytellers get from sharing these stories with others (Lenette, Cox, & Brough, 2013). For example, the refugee women in Lenette, Cox, and Brough's (2013) noted the importance that the digital storytellers gave to the stories connecting the past with the present. The digital stories created were also perceived to be a legacy or a way to connect to the future as one learner highlighted "I think it's also to (muffled) the next generation that we share these stories with the younger generation, to pass it on."

Connecting to others and future generations

The connection is not limited to a personal understanding of self, but also the relationship to others. Being involved in the digital storytelling course seemed to create a sense of social connectedness in many of the participants. Social connectedness being a person's ability to relate to others and the sense of belonging that comes with this (van Bel et al., 2009). This is seen through participants' descriptions of building community and relating to others through the shared experience and stories. Social connectedness fulfills the social need of companionship (Ashida & Heaney, 2008). Having a sense of social connectedness is important not only for well-being, but it also has an impact on improved health measures (Ashida & Heaney, 2008; Forsman et al., 2012). Thus,

educational experiences that can help to create this, such as the current study, may be valuable to the well-being of the older adult participants. The idea of connectedness was also present in the “sharing our stories” event where many viewers commented on how they liked stories because they “related to” or “connected to” them either emotionally or through the message. Stories may allow people to feel connected to the teller.

Participants formed a unique understanding of the other as one participant stated, “you see a difference side of the persons who are in this group. And almost see their inner ah, self, ah, revealed. And, to me, you never look at them the same way again. They're - they mean a lot more to you.” The connectedness that occurs with story sharing is significant. As a listener, the story can connect them to the teller’s life, coloring understanding with details and imagery. Black (2008) argues that storytelling brings with it opportunities for dialogic moments. These being moments where the individual is present, but also aware of the other. They are brief moments where the individual is authentic and honest about their thoughts and emotions (Black, 2008). Within the sharing of stories in the course, this occurred, and participants commented on knowing each other better.

Although sharing stories in general may provide opportunities to create many of the social aspects noted, the addition of sharing images and sound, and incorporating the multimedia into the story had specific advantages. In a digital story it allows for a multimodal experience (Yang, 2012). The listener experiences the teller’s story with contextual details that includes visuals and a soundtrack. Moreover, participants felt that having a digital artefact fostered connections to others outside the course, such as family, and to others in the future. Digitization permits easy distribution and preservation in the local and larger community (Klaebe et al., 2006). The information preserved is not limited to the personal narrative but includes expressions within a persons’ voice and artistic choices of the multimedia elements used. The participants noted the value of preserving voice as some mentioned that they wished they had captured the sound of their parents’ voice. Connecting to a person though the sound of their voice can be powerful.

The important role that digital stories can play in being artefacts to pass on as a legacy is seen within this study. As society ages, older adults may play an important role in connecting our past to our present. Their understanding of history is not simply

shaped by what is written but has been lived across a life course and various trajectories. Some of the participants commented on this aspect and how important it was to have their stories preserved and share them with different generations. Although it may be a form of positive ageism to automatically suggest old equals wisdom, Cruikshank (2013) argues that people should recognize those who have “developed emotionally, intellectually, and spiritually” (p.48). Reminiscence most likely has some benefits for the individual; however, hearing the lived experiences can situate events in a place and time.

One difficulty that could arise is that the people that the legacy is being shared with may not want to hear the story or be reminded of the events. This could be true where they may be a part of the story. Within this study, we did not conduct interviews with family viewing the stories. Studies that have examined multimedia stories appearing after a person’s death have had mixed reactions to these (Singhal et al., 2018). Furthermore, with editing and allowing older adults as amateurs to create their own stories, they are unpolished in comparison with modern films. This was not seen to be that much of a problem from the creators and the viewers; however, forming a story with meaning was. Furthermore, Cruikshank (2013) discusses the importance of those with developed knowledge sharing their perspectives, but what about those who may lack a message or development? In addition, the structure of the program requires a certain formula (story arc) in sharing this knowledge. This was an engaging approach for the viewers, but does it also limit certain perspectives and understanding?

Surprisingly, when participants discussed the value of these stories as legacies and sharing them with other generations, their own mortality did not appear as a theme or come up as a topic. In previous studies (e.g. Singhal et al., 2018), there was more concern regarding these areas and also how future generations would perceive them. However, with Singhal et al. (2018) study, they worked with younger adults and their concerns may be different. Possibly, later in life there may be an increased desire to leave a legacy and less concern about what others will think. There is more concern with the act of leaving a piece of who they are. Furthermore, within our study, participants spend 10-weeks deciding on and creating one story. Thus, they have an opportunity to find a story that holds value to them versus a home video or some other piece that captures the past as it is. In general, they saw legacy as a positive and also reflected upon how they wish they had their families recorded in such a way. This was particularly

true for the multimedia aspects and story. Participants commented on how they wish they had captured their parents “voice” or there were some who commented on wanting to capture this before they were gone.

Some participants commented on how it allowed them to connect to other generations as one participant stated, “I think it, it's a bridge for generations.” Connecting to younger generations through sharing stories may also help address ageism (Loe, 2013). Although this study did not specifically address this, sharing stories seems to impact viewers on a very personal level. Ageism is a strange anomaly among prejudice aspects since everyone will age over time (Calasanti, 2005). It may be one of the biggest issues to deal with the demographic shift and an ageing society (McDaniel & Zimmer, 2013). Western society and media is obsessed with staying young and individuals often try to suppress the ageing process (Calasanti, 2005). Sharing elders’ stories may help society see the value in a lived experience. The value of earning one’s wrinkles. Sharing stories allows viewers to imagine themselves in the place of the storyteller or connect their own experiences with that of the teller. These can be important in increasing understanding and compassion for another.

6.2.3. Possible benefits for healthy ageing

The digital storytelling course addressed some of the aspects that World Health Organization (2015) outlines as necessary for contributing to healthy ageing. These being promoting learning and growth, building and maintaining relationships, and contributing to society. The main themes of learning, social connectedness, and legacy that emerged from the focus groups within the course seem to meet some of these needs. Indirectly, increasing digital literacy skills may also help to increase health literacy (Levy, Janke, & Langa, 2015). Furthermore, lifelong learning (formal and informal) are associated with older adults’ health literacy (Wister et al. 2010). As there is still a digital divide (Friemel, 2016), these learning environments where older adults can become producers, and are encouraged within a social group of their peers, may be a successful way to help reduce the divide.

Narrative and reminiscent therapy have been increasingly explored as therapeutic approaches. The sharing of narrative stories may have valuable benefits for an individual (Birren & Deutchman, 1991). Many participants seemed to express the

emotional impact of recounting their stories, and some participants commented on the benefits of this. However, the digital storytelling course was not designed as a therapeutic intervention. Many of these affects may be from the building of a community and from the reminiscence and working through an event, restorying life (Kenyon & Randall, 1997). Furthermore, participants ability to reflect upon their life and re-examine it, find purpose in events, and rewrite understanding. These may add to a sense of personal growth. All which may contribute to successful ageing (Reichstadt et al., 2010). Furthermore, although this was not quantitatively examined, there were a number of outcomes within the focus group results that could relate to increased well-being. Of interest is that most dimensions of well-being discussed in the literature include some level of social relationships and connections (e.g. Ryff, 1995; Seligman, 2012). As discussed, this was one of the main experiences of participants. Another aspect of well-being is self-efficacy and feeling accomplished. A sense of accomplishment occurred through creating digital stories and overcoming the challenge of the software and other technology. Furthermore, many of the older adults also seemed to feel that their stories were contributing to life and society. All of these aspects may contribute to a sense of well-being. For example, some of these findings seem to align with Ryff's (1995) ideas of psychological well-being and the indicators of self-acceptance, positive relations with others, autonomy, purpose in life, and personal growth. This is not to say that all participants experienced these, but between the various themes that emerged it is a possibility.

Chapter 7. **Conclusion**

This thesis suggests that digital storytelling provides a rich opportunity for lifelong learning and legacy creation. The experience of older adults who engaged in one of the 10-week courses was one that presented many of them with learning, reflection, and social engagement. The connectedness to past and future that the act of storytelling with others seems to create, and the continual learning and creative activity offered, suggests that there may be important opportunities for future research and theory. Older adults' digital stories that explore events through reflection on the life course may not only be beneficial to them, but also to others to better understand various communities and people. They enjoyed sharing these experiences and many felt they had created worthwhile artefacts that were rewarding to themselves and others. Furthermore, the course provided a way for older adults to develop 21st century skills. During the course, the participants were able to examine their own life course. They were able to consider the events and roles within their lives (Giele and Elder, 1998) and the transitions that occurred (Hutchinson, 2011). The opportunity to reflect on life and restory it (Kenyon & Randall, 1999) was one of the major themes within the focus groups. There seemed to be a deep appreciation of being able to tell their stories. The stories we tell about ourselves can be important to our identity (McAdams, 2001) and digital storytelling provided a new way for older adults to share their understanding with others. The social approach seemed to be an important approach to this.

7.1. Limitations

There were a number of limitations to the study. The study was free, and this may have influenced participants ratings and perceptions. Furthermore, the questionnaires, focus groups, and evaluation forms were all self-report. However, if a person believes that they learned, gained social connections, reflected deeply on their past, and created a useful artefact then this may be enough to warrant the course. Another difficulty was that the evaluation forms were anonymous. This was valuable in increasing participants honesty in responding to the questions. However, this meant that I could not connect the demographic information to the final responses.

The issue of having enough time was difficult to resolve. As participants were all at different level of digital literacy, instruction was needed that catered to the various capabilities. Furthermore, the story creation stage was essential to the learning experience as this is where the main social interaction and sharing occurred. In the end, digital story creation can take a long time. It is a commitment. There are various possibilities for future designs, but the main one would be increasing the time frame or having an initial course and then making space for future get togethers. A digital storytelling group can be formed, but this also needs organization and resources. The question of sustainability arises.

Another limitation is that the program was advertised through community partners. This meant that only those older adults who had connections to these community centres and programs heard about the course. However, after each iteration of the course, word of mouth was also used to advertise. Another limitation was that the evaluation forms were completely anonymous, and participants did not need to record their names. The original reason for this was to allow participants the privacy and freedom to express themselves, especially as the facilitators were collecting them. Although this allowed participants a greater sense of anonymity, it limited our ability to match up the participant demographic information that outlined their skill level at the start to see whether the skill level was directly related to an increase in reported gains in digital literacy skills. The researcher believes that this is the case, as those with very limited experience would need to improve their skills to complete the project. Furthermore, participants often confirmed this through observation.

7.2. Future work

As there are many aspects that could be related to subjective well-being, it may be worth doing a pre- and post-test on this to examine whether digital storytelling increases older adults' subjective well-being, particularly social and emotional. The digital storytelling courses also have the potential to be powerful environments for transformational learning. Future versions of the course will begin to examine this aspect. Furthermore, the project is considering ways to make the program more sustainable and be able to reach a larger audience. For example, we are creating an online version of the course and testing its application (Schell, da Silva, Hausknecht, & Kaufman, 2018).

Another direction that could be valuable is the opportunity to build intergenerational relationships and learning. Previous studies have suggested that digital storytelling could be a powerful intergenerational tool (Flottemesch, 2013; Iseke & Moore, 2011). Currently, there are two studies that are being piloted for the use of digital storytelling for intergenerational relationships. One project involves a First Nations community, Nakadzli, in Northern BC, where students and elders work together to create digital stories. The project hopes to preserve local knowledge and build intergenerational relationships. This project has undergone a pilot test and is currently being redesigned and will incorporate high school students.

Since sharing stories seems to be a powerful way to connect individuals, and previous work that the researcher has been involved in has shown that digital games also have positive effects on social connectedness (Schell et al. 2015; Hausknecht et al. 2015), it would be interesting to combine story and game. One potential way to create a collaborative environment where story and game interweave is through alternate reality games (Hausknecht, Neustaedter, Kaufman, 2017).

Since older adults had seen the projects as a way to connect with generations, now and in the future, it would be interesting to see how family members felt about these stories. Do they serve a purpose in remembering the person when they are gone?

7.3. Original contribution to research

Previous research has explored several areas working with narrative autobiographical work with older adults (e.g. Birren & Deutchman, 1991) and getting health professionals and various generations to work with elders and digital storytelling (e.g. Hewson, Danbrook, & Sieppert, 2015); however, at this point, very few have explored the educational, social and emotional value of digital storytelling for older adults. The richness of experiences expressed by older adults adds to the understanding of story in education and hints at the many opportunities technology may play in the shaping and production. Since participants were required to not only write their story, but find images and sounds, it pushed them to explore the specific events in greater depth. Furthermore, this study presents a deeper understanding on how individuals interact with story and its role in building a connection to others. The deep connectedness that occurred between participants and their past, while also giving hope and legacy to

contribute to the future informs research on how story allows people to connect. Given the importance of social capital and connectedness on the health and well-being of older adults (Theurer & Wister, 2010), programs that combine story and technology may be valuable in increasing these. It is important that older adults have a place to share their life history as this seems to increase their self-esteem and connect them to others.

Furthermore, the course helped the older adults further develop 21st century skills. As there is no agreed definition of 21st century skills, in this case it increased digital literacy skills, which led to a new approach to communicate their life stories and understanding of the world. Furthermore, the course required participants to think about multimedia aspects such as the visual and sound and how these can be manipulated and used. This course contributes to a better understanding of the value of developing 21st century skills for older adult learners where they can be digital producers who can contribute to society in new ways.

This thesis provides a small story of understanding of multimedia storytelling in the context of a course with older adults. It tells the story of shared experiences, of stories coming to life and being re-examined and conceptualized by those reciprocating the sharing. It tells the story of learning that occurs through and with technology and narrative.

7.4. The end of my thesis story

"There is no real ending. It's just the place where you stop the story." - Frank Herbert

Within a narrative, a person must decide where to end their story. However, endings are never truly endings within life. They often simply take us to a new beginning or overlap with other trajectories. Heidegger (1996, first edition 1927) suggests that a person's story begins at birth and ends at death, but they must take a view from their current position. Here my thesis story ends, yet the research continues. It tells the story of my personal journey through the design, development, and analysis of the multimedia storytelling research.

Reflecting back, the thesis presented the experiences, benefits, and challenges of older adults in a digital storytelling course. The value of the program reported is

encouraging for future designs, yet building connections, re-examining life experiences, and creating a digital artefact of these is a time-consuming process. The value of stories and learning from others is impactful. It connects our lives to our learning and to others, it makes us look at other's experiences and see that we are similar yet all have the richness that experience provides. As a participant states "the story of ones' life. It's beautiful, even if it's sad. When you tell it, it becomes beautiful."

References

Alheit, P. (1994). The “biographical question” as a challenge to adult education. *International review of education*, 40(3-5), 283-298.

Andrews, D. H., Hull, T. D., & Donahue, J. A. (2009). Storytelling as an instructional method: Definitions and research questions. *Interdisciplinary Journal of Problem-based Learning*, *3*(2), 3.

Ananiadou, K., & Claro, M. (2009). 21st Century Skills and Competences for New Millennium Learners in OECD Countries. *OECD Education Working Papers*, No. 41, OECD Publishing.

Ashida, S., & Heaney, C. A. (2008). Differential associations of social support and social connectedness with structural features of social networks and the health status of older adults. *Journal of Aging and Health*, *20*(7), 872-893.

Astell, A. (2013). Technology and fun for a happy old age. In *Technologies for active aging* (pp. 169-187). Springer, Boston, MA.

Baecker, R., Moffatt, K., & Massimi, M. (2012). Technologies for aging gracefully. *Interactions, 19*(3), 32-36.

Barab, S. A., & Duffy, T. (2000). From practice fields to communities of practice. *Theoretical foundations of learning environments*, *1*(1), 25-55.

Barg, F. K., Huss-Ashmore, R., Wittink, M. N., Murray, G. F., Bogner, H. R., & Gallo, J. J. (2006). A mixed-methods approach to understanding loneliness and depression in older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *61*(6), S329-S339.

Barnard, Y., Bradley, M. D., Hodgson, F., & Lloyd, A. D. (2013). Learning to use new technologies by older adults: Perceived difficulties, experimentation behaviour and usability. *Computers in Human Behavior*, *29*(4), 1715-1724.

Barrett, H. (2006, March). Researching and evaluating digital storytelling as a deep learning tool. In *Society for information technology & teacher education international conference* (pp. 647-654). Association for the Advancement of Computing in Education (AACE).

Bawden, D. (2001). Information and digital literacies: a review of concepts. *Journal of documentation, 57*(2), 218-259.

Bawden, D. (2008). Origins and concepts of digital literacy. Digital literacies: Concepts, policies and practices, 30, 17-32.

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, *13*(4), 544-559.

Behmer, S., Schmidt, D., & Schmidt, J. (2006, March). Everyone has a story to tell: Examining digital storytelling in the classroom. In *Society for Information Technology and Teacher Education International Conference* (Vol. 2006, No. 1, pp. 655-662).

Bell, S. (2010). Project-based learning for the 21st century: Skills for the future. *The Clearing House*, *83*(2), 39-43.Bengtson, V. L., & Allen, K. R. (2009). The life course perspective applied to families over time. In *Sourcebook of family theories and methods* (pp. 469-504). Springer, Boston, MA.

Bengtson, V. L., Elder Jr, G. H., & Putney, N. M. (2012). The life course perspective on ageing: Linked lives, timing, and history. In J. Katz, S. Peace, & S. Spurr (Eds.), *Adult Lives* (pp. 9-17). UK: The Policy Press

Bereiter, C. (1997). Situated cognition and how to overcome it. *Situated cognition: Social, semiotic, and psychological perspectives*, 281-300.

Birren, J. E., & Deutchman, D. E. (1991). *Guiding autobiography groups for older adults: Exploring the fabric of life*. Johns Hopkins University Press (JHU Press), Baltimore, MD.

Black, L. W. (2008). Deliberation, storytelling, and dialogic moments. *Communication Theory*, *18*(1), 93-116.

Bohlmeijer, E., Roemer, M., Cuijpers, P., & Smit, F. (2007). The effects of reminiscence on psychological well-being in older adults: A meta-analysis. *Aging and Mental Health*, *11*(3), 291-300.

Bohlmeijer, E. T., Westerhof, G. J., & Emmerik-de Jong, M. (2008). The effects of integrative reminiscence on meaning in life: Results of a quasi-experimental study. *Aging and Mental Health*, *12*(5), 639-646.

Boud, D., Keogh, R., & Walker, D. (1985). Promoting reflection in learning: A model. *Reflection: Turning experience into learning*, 18-40.

Boulton-Lewis, G. M., Buys, L., & Lovie-Kitchin, J. (2006). Learning and active aging. *Educational gerontology*, *32*(4), 271-282.

Boulton-Lewis, G. M. (2010). Education and learning for the elderly: Why, how, what. *Educational Gerontology*, *36*(3), 213-228.

Bowling, A., & Dieppe, P. (2005). What is successful ageing and who should define it? *BMJ: British Medical Journal, 331*(7531), 1548-1551.

Brand, G., Miller, K., Saunders, R., Dugmore, H., & Etherton-Beer, C. (2016). Expanding the caring lens: nursing and medical students reflecting on images of older people. *Gerontology & geriatrics education*, *37*(2), 167-184.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational researcher*, *18*(1), 32-42.

Brown, J., & Duguid, P. (2000). Organizational learning and communities of practice: Toward a unified view of working, learning, and innovation. In *Knowledge and communities* (pp. 99-121).

Bruner, J. (1987). Life as narrative. *Social research*, 11-32.

Bruner, J. (1991). The narrative construction of reality. *Critical inquiry*, *18*(1), 1-21.

Bruner, J. S. (1996). *The culture of education*. Harvard University Press.

Bruner, J. (2004). Life as narrative. *Social research*, 691-710.

Brushwood Rose, C. (2009). The (im) possibilities of self representation: Exploring the limits of storytelling in the digital stories of women and girls. *Changing English*, *16*(2), 211-220.

Brushwood Rose, C., & Granger, C. A. (2013). Unexpected self-expression and the limits of narrative inquiry: exploring unconscious dynamics in a community-based digital storytelling workshop. *International Journal of Qualitative Studies in Education*, 26(2), 216-237.

Buckley, C., & McCarthy, G. (2009). An exploration of social connectedness as perceived by older adults in a long-term care setting in Ireland. *Geriatric Nursing*, *30*(6), 390-396.

Burgess, J. (2006). Hearing ordinary voices: Cultural studies, vernacular creativity and digital storytelling. *Continuum*, *20*(2), 201-214.

Cacioppo, J. T., & Patrick, W. (2008). *Loneliness: Human nature and the need for social connection*. New York, NY: W.W. Norton & Company.

Calasanti, T. (2005). Ageism, gravity, and gender: Experiences of aging bodies. *Generations*, *29*(3), 8-12.

Cannuscio, C., Block, J., & Kawachi, I. (2003). Social capital and successful aging: The role of senior housing. *Annals of Internal Medicine*, *139*(5_Part_2), 395-399.

Cattan, M., White, M., Bond, J., & Learmouth, A. (2005). Preventing social isolation and loneliness among older people: a systematic review of health promotion interventions. *Ageing & Society*, *25*(1), 41-67.

Chen, L. K., Kim, Y. S., Moon, P., & Merriam, S. B. (2008). A review and critique of the portrayal of older adult learners in adult education journals, 1980-2006. *Adult Education Quarterly*, *59*(1), 3-21.

Chonody, J., & Wang, D. (2013). Connecting older adults to the community through multimedia: An intergenerational reminiscence program. *Activities, Adaptation & Aging*, *37*(1), 79-93.

Christiansen, A. (2011). Storytelling and professional learning: A phenomenographic study of students' experience of patient digital stories in nurse education. *Nurse education today*, *31*(3), 289-293.

Clandinin, D. J., & Connelly, F. M. (1989). Narrative and story in practice and research. Retrieved on April 24, 2018 from https://files.eric.ed.gov/fulltext/ED309681.pdf

Clark, M. C., & Rossiter, M. (2008). Narrative learning in adulthood. *New directions for adult and continuing education*, *2008*(119), 61-70.

Clarke, V., & Braun, V. (2014). Thematic analysis. In *Encyclopedia of critical psychology* (pp. 1947-1952). Springer New York.

Couldry, N. (2008). Mediatization or mediation? Alternative understandings of the emergent space of digital storytelling. *New media & society*, *10*(3), 373-391.

Cramm, J. M., Van Dijk, H. M., & Nieboer, A. P. (2013). The importance of neighborhood social cohesion and social capital for the well being of older adults in the community. *The Gerontologist*, *53*(1), 142-152.

Creech, A., & Hallam, S. (2015). Critical geragogy: A framework for facilitating older learners in community music. *London Review of Education*, *13*(1), 43-57.

Cresci, M. K., Yarandi, H. N., & Morrell, R. W. (2010). Pro-nets versus no-nets: Differences in urban older adults' predilections for internet use. *Educational Gerontology*, *36*(6), 500-520.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice*, *39*(3), 124-130.

Cruikshank, M. (2013). *Learning to be old: Gender, culture, and aging*. Rowman & Littlefield.

Cuddy, A. J., Norton, M. I., & Fiske, S. T. (2005). This old stereotype: The pervasiveness and persistence of the elderly stereotype. *Journal of social issues*, *61*(2), 267-285.

Cunningham, D., & Duffy, T. (1996). Constructivism: Implications for the design and delivery of instruction. *Handbook of research for educational communications and technology*, 170-198.

Cunsolo Willox, A., Harper, S. L., & Edge, V. L. (2013). Storytelling in a digital age: digital storytelling as an emerging narrative method for preserving and promoting indigenous oral wisdom. *Qualitative Research*, *13*(2), 127-147.

Czaja, S. J., Rogers, W. A., Fisk, A. D., Charness, N., & Sharit, J. (2009). *Designing for older adults: Principles and creative human factors approaches*. CRC press.

Czarnecki, K. (2009). How digital storytelling builds 21st century skills. Library Technology Reports, 45(7), 15-19.

Darvin, R., & Norton, B. (2014). Transnational identity and migrant language learners: The promise of digital storytelling. *Education Matters: The Journal of Teaching and Learning*, *2*(1).

Davenport, J., & Davenport, J. A. (1985). A chronology and analysis of the andragogy debate. *Adult education quarterly*, *35*(3), 152-159.

Davis, A., & Weinshenker, D. (2012). Digital storytelling and authoring identity. *Technology and identity: Research on the development and exploration of selves in a digital world*, 47-64.

Dede, C. (2010). Comparing frameworks for 21st century skills. *21st century skills: Rethinking how students learn*, *20*, 51-76.

Delello, J. A., & McWhorter, R. R. (2017). Reducing the digital divide: Connecting older adults to iPad technology. *Journal of Applied Gerontology*, *36*(1), 3-28.

Demiray, B., Mischler, M., Martin, M., & Knight, B. G. (2017). Reminiscence in Everyday Conversations: A Naturalistic Observation Study of Older Adults. *The Journals of Gerontology: Series B*.

Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social indicators research*, *40*(1-2), 189-216.

Elder, G. H. Jr. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly*, *57*(1), 4-15.

Elder, G. H., Johnson, M. K., & Crosnoe, R. (2003). The emergence and development of life course theory. In *Handbook of the life course* (pp. 3-19). Springer, Boston, MA.

Ertmer, P. A., & Newby, T. J. (1993). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly, 6*(4), 50-72.

Estabrooks, P. A., Smith-Ray, R. L., Dzewaltowski, D. A., Dowdy, D., Lattimore, D., Rheaume, C., ... & Wilcox, S. (2011). Sustainability of evidence-based community-based physical activity programs for older adults: lessons from Active for Life. *Translational behavioral medicine*, *1*(2), 208-215.

Findsen, B., & Formosa, M. (2011). Rationales for older adult learning. In *Lifelong Learning in Later Life* (pp. 89-101). SensePublishers.

Fisher, B. J., & Specht, D. K. (1999). Successful aging and creativity in later life. *Journal of aging studies*, *13*(4), 457-472.

Flottemesch, K. (2013). Learning through narratives: The impact of digital storytelling on intergenerational relationships. *Academy of Educational Leadership Journal*, *17*(3), 53.

Formosa, M. (2012). Critical Geragogy: Situating Theory in Practice. *Journal of Contemporary Educational Studies/Sodobna Pedagogika*, *63*(5).

Forsman, A. K., Nyqvist, F., Schierenbeck, I., Gustafson, Y., & Wahlbeck, K. (2012). Structural and cognitive social capital and depression among older adults in two Nordic regions. *Aging & mental health*, *16*(6), 771-779.

Fox, S. L. (2015). *Cognitive Enrichment, Self-Regulation, Life Satisfaction and Aging* (Doctoral dissertation, Education: Educational Psychology).

Freidus, N., & Hlubinka, M. (2002). Digital storytelling for reflective practice in communities of learners. ACM SIGGROUP Bulletin, 23(2), 24-26.

Freire, P. (1972). Education: domestication or liberation?. *Prospects*, *2*(2), 173-181.

Freire, P. (2000). *Pedagogy of the oppressed*. Bloomsbury Publishing.

Friemel, T. N. (2016). The digital divide has grown old: Determinants of a digital divide among seniors. *new media & society*, *18*(2), 313-331.

Friesen, N., Henriksson, C., & Saevi, T. (Eds.). (2012). *Hermeneutic phenomenology in education: Method and practice* (Vol. 4). Springer Science & Business Media.

Gachago, D., Condy, J., Ivala, E., & Chigona, A. (2014). 'All stories bring hope because stories bring awareness': students' perceptions of digital storytelling for social justice education. *South African Journal of Education*, *34*(4), 1-12.

Garcia, P., & Rossiter, M. (2010, March). Digital storytelling as narrative pedagogy. In *Society for Information Technology & Teacher Education International Conference* (pp. 1091-1097). Association for the Advancement of Computing in Education (AACE).

Gatto, S. L., & Tak, S. H. (2008). Computer, Internet, and e-mail use among older adults: Benefits and barriers. *Educational Gerontology*, *34*(9), 800-811.

Giele, J. Z., & Elder, G. H. (Eds.). (1998). *Methods of life course research: Qualitative and quantitative approaches*. Sage.

Gilster, P. (1997). *Digital literacy*. New York: Wiley Computer Pub.

Greeno, J. G. (1998). The situativity of knowing, learning, and research. *American psychologist*, *53*(1), 5.

Gomez-Pablos, V.B., del Pozo, M.M., Munoz-Repiso, A., G-V. (2017). Project-based learning through the incorporation of digital technologies: An evaluation based on the experience of serving teachers. *Computers in Human Behavior, 68,* 501-512.

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ*, *29*(2), 75.

Gubrium, A. C., Krause, E. L., & Jernigan, K. (2014). Strategic authenticity and voice: New ways of seeing and being seen as young mothers through digital storytelling. *Sexuality Research and Social Policy*, *11*(4), 337-347.

Guest, G., Namey, E., & McKenna, K. (2017). How many focus groups are enough? Building an evidence base for nonprobability sample sizes. *Field methods*, *29*(1), 3-22.

Hagestad, G. O., & Uhlenberg, P. (2005). The social separation of old and young: A root of ageism. *Journal of social issues*, *61*(2), 343-360.

Hagestad, G. O. (2018). Interdependent lives and relationships in changing times: A life-course view of families and aging. In *Lives in Time and Place and Invitation to the Life Course* (pp. 135-159). Routledge.

Hanna, G. P., Noelker, L. S., & Bienvenu, B. (2015). The Arts, Health, and Aging in America: 2005–2015. *The Gerontologist*, 55(2), 271-277.

Hannafin, M., Land, S., & Oliver, K. (1999). Open learning environments: Foundations, methods, and models. *Instructional-design theories and models: A new paradigm of instructional theory*, *2*, 115-140.

Hausknecht, S. N. (2013). *Older adult gamers: patterns of use and opinions on the benefits of digital gameplay* (Master's thesis, Education: Faculty of Education).

Hausknecht, S. (2018). The role of new media in communicating and shaping older adult stories. In *International Conference on Human Aspects of IT for the Aged Population*. Springer, Cham.

Hausknecht, S., Schell, R., Zhang, F., & Kaufman, D. (2015). Building Seniors' Social Connections and Reducing Loneliness Through a Digital Game. In *ICT4AgeingWell* (pp. 276-284).

Hausknecht, S., Vanchu-Orosco, M., & Kaufman, D. (2016). Design for older adult cohorts: Insights from a series of digital storytelling workshops. In *EdMedia: World Conference on Educational Media and Technology* (pp. 755-756). Association for the Advancement of Computing in Education (AACE).

Hausknecht, S., Vanchu-Orosco, M., & Kaufman, D. (2016b). New Ways to Tell my Story-Evaluation of a Digital Storytelling Workshop for Older Adults. In *CSEDU (2)* (pp. 231-239).

Hausknecht, S., Neustaedter, C., & Kaufman, D. (2017). Blurring the lines of age: intergenerational collaboration in alternate reality games. In *Game-Based Learning Across the Lifespan* (pp. 47-64). Springer, Cham.

Hausknecht S., Vanchu-Orosco M., & Kaufman D. (2017) Sharing Life Stories: Design and Evaluation of a Digital Storytelling Workshop for Older Adults. In: Costagliola G., Uhomoibhi J., Zvacek S., McLaren B. (eds) Computers Supported Education. CSEDU 2016. Communications in Computer and Information Science, vol 739. Springer, Cham.

Hausknecht, S., & Kaufman, D. (2018). Increasing digital literacy skills of older adults through a digital storytelling project-based learning course. In *EdMedia: World Conference on Educational Media and Technology.*

Hausknecht, S., Vanchu-orosco, M., & Kaufman, D. (in press). Digitizing the wisdom of our elders: Connectedness through digital storytelling. *Ageing & Society.*

Heidegger, M. (1996). *Being and time: A translation of Sein und Zeit*. SUNY press.

Henschke, J. A. (2011). Considerations regarding the future of andragogy. *Adult Learning*, *22*(1), 34-37.

Heo, M. (2009). Digital storytelling: An empirical study of the impact of digital storytelling on pre-service teachers' self-efficacy and dispositions towards educational technology. *Journal of Educational Multimedia and Hypermedia*, *18*(4), 405.

Hewson, J., Danbrook, C., & Sieppert, J. (2015). Engaging Post-Secondary Students and Older Adults in an Intergenerational Digital Storytelling Course. *Contemporary Issues in Education Research*, *8*(3), 135-142.

Higgins, S. (2011). Digital Curation: the emergence of a new discipline. *International Journal of Digital Curation*, *6*(2), 78-88.

Hill, R., Betts, L. R., & Gardner, S. E. (2015). Older adults' experiences and perceptions of digital technology:(Dis) empowerment, wellbeing, and inclusion. *Computers in Human Behavior*, *48*, 415-423.

Hughes, D. L., & DuMont, K. (2002). Using focus groups to facilitate culturally anchored research. In *Ecological research to promote social change* (pp. 257-289). Springer, Boston, MA.

Hull, G. A., & Katz, M. L. (2006). Crafting an agentive self: Case studies of digital storytelling. Research in the Teaching of English, 43-81.

Hummert, M. L., Garstka, T. A., Shaner, J. L., & Strahm, S. (1994). Stereotypes of the elderly held by young, middle-aged, and elderly adults. *Journal of Gerontology*, *49*(5), P240-P249.

Hung, C. M., Hwang, G. J., & Huang, I. (2012). A Project-based digital storytelling approach for improving students' learning motivation, problem-solving competence and learning achievement. *Educational Technology & Society*, *15*(4), 368-379.

Hutchinson, E.D. (2011). *Dimensions of human behavior; the changing life course, 4th ed*. Portland: Book News, Inc.

Iseke, J., & Moore, S. (2011). Community-based Indigenous digital storytelling with elders and youth. *American Indian Culture and Research Journal*, *35*(4), 19-38.

Jakes, D. S., & Brennan, J. (2005). Digital Storytelling, visual literacy and 21st century skills. In *Online Proceedings of the Tech Forum New York.[Online]*.

Jenkins, M., & Lonsdale, J. (2007). Evaluating the effectiveness of digital storytelling for student reflection. In *ICT: Providing choices for learners and learning. Proceedings ASCILITE Singapore 2007*.

Jenkins, A., & Mostafa, T. (2015). The effects of learning on wellbeing for older adults in England*. Ageing and Society*, 35, pp 2053-2070.

Jenkins, H., Purushotma, R., Weigel, M., Clinton, K., & Robison, A. J. (2009). *Confronting the challenges of participatory culture: Media education for the 21st century*. Mit Press.

Jenkins, T. (2017). Ageing Narratives: Embedding Digital Storytelling Within the Higher Education Curriculum of Health and Social Care with Older People. In *Digital Storytelling in Higher Education* (pp. 261-277). Palgrave Macmillan, Cham.

Jonassen, D. H. (1999). Designing constructivist learning environments. *Instructional design theories and models: A new paradigm of instructional theory*, *2*, 215-239.

Kaufman, D., Sauvé, L., Renaud, L., Sixsmith, A., & Mortenson, B. (2016). Digital gameplay by older adults: Patterns, benefits, and challenges. *Simulation & Gaming,* **47,** 4, 475-89.

Kearney, M. (2009). Investigating digital storytelling and portfolios in teacher education. In *EdMedia: World Conference on Educational Media and Technology* (pp. 1987-1996). Association for the Advancement of Computing in Education (AACE).

Kenyon, G. M., & Randall, W. L. (1997). *Restorying our lives: Personal growth through autobiographical reflection*. Greenwood Publishing Group.

Kenyon, G., & Randall, W. L. (1999). Narrative gerontology. *Journal of Aging Studies*, *13*(1), 1-5.

Kiel, J. M. (2005). The digital divide: Internet and e-mail use by the elderly. *Medical Informatics and the Internet in Medicine*, *30*(1), 19-23.

Kim, A., & Merriam, S. B. (2004). Motivations for learning among older adults in a learning in retirement institute. *Educational Gerontology*, *30*(6), 441-455.

Kim, B., & Reeves, T. C. (2007). Reframing research on learning with technology: In search of the meaning of cognitive tools. *Instructional Science*, *35*(3), 207-256.

Kimotho, S. (2016). Role of Media and Women Environmental Activists in Advancing Environmental Justice among the Marginalised Communities: A Case of Owino Uhuru Lead Poisoning in Kenya. In eds Mwaniki, R., Kimotho, S., Khaemba, W., & Ochieng, C. *Defending the Voiceless.* African Centre for Technology Studies (ACTS)

Kitzinger, J. (1994). The methodology of focus groups: the importance of interaction between research participants. *Sociology of health & illness*, *16*(1), 103-121.

Klaebe, H. G., Foth, M., Burgess, J. E., & Bilandzic, M. (2007). Digital storytelling and history lines: Community engagement in a master-planned development. In *Proceedings of the 13th international conference on virtual systems and multimedia: Exchange and experience in space and place, VSMM 2007*. Australasian Cooperative Research Centre for Interaction Design Pty, Limited.

Knowles, M. (1978). Andragogy: Adult Learning Theory in Perspective. *Community College Review,5*(3), 9-20.

Knowles, M. (1980). *The modern practice of adult education : From pedagogy to andragogy / Malcolm S. Knowles.*(Rev. and updated. ed.).

Knowles, M. S. (1985). Applications in continuing education for the health professions: Chapter five of Andragogy in action. *Möbius: A Journal for Continuing Education Professionals in Health Sciences*, *5*(2), 80-100.

Lamb, R., & Brady, E. M. (2005). Participation in lifelong learning institutes: What turns members on?. *Educational Gerontology*, *31*(3), 207-224.

Lambert, J. (2010). *Digital Storytelling Cookbook.* Berkeley, CA.

Lambert, J. (2013). *Digital storytelling: Capturing lives, creating community*. Routledge.

Land, S., Hannafin, M., & Oliver, K. (2012). Student-Centered Learning Environments: Foundations, Assumptions, and Implications. In Jonassen, D., and Land, S. (Eds.). Theoretical foundations of learning environments. Routledge.

Latour, B. (1996). On actor-network theory: A few clarifications. *Soziale welt*, 369-381.

Laukka, P. (2007). Uses of music and psychological well-being among the elderly. *Journal of happiness studies*, *8*(2), 215.

Lebel, J. (1978). Beyond androgogy to geragogy*. Lifelong learning the adult years*, 1(9), 16-18

Lee, T. (2012). Getting to know you: Using documentary video-making to challenge ageist stereotypes. *Gerontology & geriatrics education*, *33*(3), 272-286.

Lenette, C., Cox, L., & Brough, M. (2013). Digital storytelling as a social work tool: learning from ethnographic research with women from refugee backgrounds. *The British Journal of Social Work*, *45*(3), 988-1005.

Levy, H., Janke, A. T., & Langa, K. M. (2015). Health literacy and the digital divide among older Americans. *Journal of general internal medicine*, *30*(3), 284-289.

Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. Beverly Hills, CA: Sage.

Linde, C. (2001). Narrative and social tacit knowledge. *Journal of knowledge management*, *5*(2), 160-171.

Lipponen, L. (2002). Exploring foundations for computer-supported collaborative learning. In Stahl, G. (Ed.) *Proceedings of the Computer-Supported Collaborative Learning Conference 2002* (pp. 72–81). Boulder, CO: International Society of the Learning Sciences.

Litwin, H., & Shiovitz-Ezra, S. (2011). Social network type and subjective well-being in a national sample of older Americans. *The Gerontologist*, *51*(3), 379-388.

Loe, M. (2013). The digital life history project: intergenerational collaborative research. *Gerontology & geriatrics education*, *34*(1), 26-42.

London, J. (1973). Adult education for the 1970s: Promise or illusion. *Adult Education*, 24(1), 60-70

Long, B. (2011). Digital storytelling and meaning making: Critical reflection, creativity and Technology in pre-service teacher education. In *Proceedings of the Digital storytelling conference* (pp. 1-27).

Lundby, K. (Ed.). (2008). *Digital storytelling, mediatized stories: Self-representations in new media*. Peter Lang.

Lunt, P., & Livingstone, S. (1996). Rethinking the focus group in media and communications research. *Journal of communication*, *46*(2), 79-98.

Manchester, H., & Facer, K. (2015). Digital curation: Learning and legacy in later life. *E-Learning and Digital Media*, *12*(2), 242-258.

Mannell, R. C., & Kleiber, D. A. (1997). *A social psychology of leisure*. Venture Publishing Inc..

Marx, L. (2010). Technology: The emergence of a hazardous concept. *Technology and Culture*, *51*(3), 561–577.

McAdams, D. P. (1993). *The stories we live by: Personal myths and the making of the self*. Guilford Press.

McAdams, D. P. (2001). The psychology of life stories. *Review of general psychology*, *5*(2), 100.

McAdams, D. P. (2008). Life Story. *The Encyclopedia of Adulthood and Aging*.

McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual review of psychology*, *61*, 517-542.

McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science*, **22**, 3, 233-8.

McDaniel, S. A., & Rozanova, J. (2011). Canada's aging population (1986) Redux. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, *30*(3), 511-521.

McDaniel, S., & Zimmer, Z. (2013). Conclusion: Global ageing in the twenty-first century-Where to from here?. In *Global Ageing in the Twenty-First Century: Challenges, Opportunities and Implications*. Ashgate Publishing Ltd.

McDrury, J., & Alterio, M. (2003). Learning through storytelling in higher education: Using reflection and experience to improve learning. Routledge.

McLafferty, I. (2004). Focus group interviews as a data collecting strategy. *Journal of advanced nursing*, *48*(2), 187-194.

McLean, K. C., Pasupathi, M., & Pals, J. L. (2007). Selves creating stories creating selves: A process model of self-development. *Personality and Social Psychology Review*, *11*(3), 262-278.

McLellan, H. (2007). Digital storytelling in higher education. Journal of Computing in Higher Education, 19(1), 65-79.

Meadows, D. (2003). Digital storytelling: Research-based practice in new media. *Visual Communication*, *2*(2), 189-193.

Meléndez Moral, J. C., Fortuna Terrero, F. B., Sales Galán, A., & Mayordomo Rodríguez, T. 2015. Effect of integrative reminiscence therapy on depression, well-being, integrity, self-esteem, and life satisfaction in older adults. *The Journal of Positive Psychology*, **10**, 3, 240-7.

Melenhorst, A. S., Rogers, W. A., & Bouwhuis, D. G. (2006). Older adults' motivated choice for technological innovation: evidence for benefit-driven selectivity. *Psychology and aging*, *21*(1), 190.

Merriam, S. B. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New directions for adult and continuing education*, *2001*(89), 3-14.

Merriam, S. B. (2004). The changing landscape of adult learning theory. *Review of adult learning and literacy: Connecting research, policy, and practice*, 199-220.

Merriam, S. B. (2008). Adult learning theory for the twenty-first century. *New directions for adult and continuing education*, *2008*(119), 93-98.

Merriam, S. B., & Kee, Y. (2014). Promoting community wellbeing: The case for lifelong learning for older adults. *Adult Education Quarterly*, *64*(2), 128-144.

Mezirow, J. (2006). An overview on transformative learning. *Lifelong learning: Concepts and contexts*, 24-38.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.

Millard, A., Baldassar, L., & Wilding, R. (2018). The significance of digital citizenship in the well-being of older migrants. *Public health*.

Miller, P. J., Cho, G. E., & Bracey, J. R. (2005). Working-class children's experience through the prism of personal storytelling. *Human Development*, *48*(3), 115-135.

Miller, P. J., & Moore, B. B. (1989). Narrative conjunctions of caregiver and child: A comparative perspective on socialization through stories. *Ethos*, *17*(4), 428-449.

Militello, M., & Guajardo, F. (2013). Virtually speaking: How digital storytelling can facilitate organizational learning. Journal of Community Positive Practices, 13(2), 80-91.

Mitzner, T. L., Boron, J. B., Fausset, C. B., Adams, A. E., Charness, N., Czaja, S. J., ... & Sharit, J. (2010). Older adults talk technology: Technology usage and attitudes. *Computers in human behavior*, *26*(6), 1710-1721.

Montepare, J. M., Kempler, D., & McLaughlin-Volpe, T. (2014). The voice of wisdom: New insights on social impressions of aging voices. Journal of Language and Social Psychology, 33(3), 241-259.

Morgan, D. L. (1996). *Focus groups as qualitative research* (Vol. 16). Sage publications.

Morrison-Beedy, D., Côté-Arsenault, D., & Feinstein, N. F. (2001). Maximizing results with focus groups: Moderator and analysis issues. *Applied Nursing Research*, *14*(1), 48-53.

Nastasi, B. K., & Schensul, S. L. (2005). Contributions of qualitative research to the validity of intervention research. *Journal of School Psychology*, *43*(3), 177-195.

Nelson, T. D. (Ed.). (2004). *Ageism: Stereotyping and prejudice against older persons*. MIT press.

Nelson, T. D. (2005). Ageism: Prejudice against our feared future self. *Journal of Social Issues*, *61*(2), 207-221.

Neves, B. B., Franz, R. L., Munteanu, C., Baecker, R., & Ngo, M. (2015, April). My Hand Doesn't Listen to Me!: Adoption and Evaluation of a Communication Technology for the'Oldest Old'. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 1593-1602). ACM.

Norrick, N. R. (2009). The construction of multiple identities in elderly narrators' stories. *Ageing & Society*, *29*(6), 903-927.

Nyqvist, F., Forsman, A. K., Giuntoli, G., & Cattan, M. (2013). Social capital as a resource for mental well-being in older people: A systematic review. *Aging & Mental Health*, *17*(4), 394-410.

Ochs, E., & Capps, L. (1996) Narrating the self. *Annual Review of Anthropology, 25*(1), 19-43.

Ohler, J. (2006). The world of digital storytelling. *Educational leadership*, *63*(4), 44-47.

O'Neill, D. K. (2016). When form follows fantasy: Lessons for learning scientists from modernist architecture and urban planning. The Journal of the Learning Sciences, 25(1), 133-152.

Onwuegbuzie, A. J., Dickinson, W. B., Leech, N. L., & Zoran, A. G. (2009). Toward more rigor in focus group research: A new framework for collecting and analyzing focus group data. *International Journal of Qualitative Methods-ARCHIVE*, *8*(3), 1-21.

Pasupathi, M. (2001). The social construction of the personal past and its implications for adult development. *Psychological bulletin*, *127*(5), 651.

Pasupathi, M., Mansour, E., & Brubaker, J. R. (2007). Developing a life story: Constructing relations between self and experience in autobiographical narratives. *Human Development*, *50*(2-3), 85-110.

Pea, R. D. (1994). Seeing what we build together: Distributed multimedia learning environments for transformative communications. *the Journal of the Learning Sciences*, *3*(3), 285-299.

Pecorini, B. C., & Duplaa, E. (2017). Narrative Gerontology and Digital Storytelling: What Benefits for Elders. *MOJ Public Health*, *6*(6), 00192.

Peterson, D. A. (1976). Educational Gerontology: The State Of The Art. *Educational Gerontology*, *1*(1), 61-68.

Pew Research Center. (2017). Tech adoption climbs among older adults. Retrieved on December, 14, 2017 from http://www.pewinternet.org/2017/05/17/tech-adoption-climbs-among-older-adults/

Phoenix, C., & Griffin, M. (2013). Narratives at work: what can stories of older athletes do?. *Ageing & Society*, *33*(2), 243-266.

Poletti, A. (2011). Coaxing an intimate public: Life narrative in digital storytelling. *Continuum, 25*(1), 73-83.

Polkinghorne, D. E. (1991). Narrative and self-concept. *Journal of narrative and life history*, *1*(2), 135-153.

Postman., N. (1996) The end of education. NY: Random House.

Quan-Haase, A., Mo, G. Y., & Wellman, B. (2017). Connected seniors: How older adults in East York exchange social support online and offline. *Information, Communication & Society*, *20*(7), 967-983.

Radojc, A., & Mlakar, R. (2012). Importance of computer education and e-literacy for older adults. Andragosca Spoznanja/Andragogic Perspectives, 18(2):77-87.

Rappaport, J. (1995). Empowerment meets narrative: Listening to stories and creating settings. American Journal of community psychology, 23(5), 795-807.

Reeves, T. C., Herrington, J., & Oliver, R. (2002). Authentic activities and online learning. Higher Education Research and Development Society of Australasia, 562-567

Reichstadt, J., Sengupta, G., Depp, C. A., Palinkas, L. A., & Jeste, D. V. (2010). Older adults' perspectives on successful aging: Qualitative interviews. The American journal of geriatric psychiatry: official journal of the American Association for Geriatric Psychiatry, 18(7), 567.

Randall, W. L., & Kenyon, G. M. (2004). Time, story, and wisdom: Emerging themes in narrative gerontology. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, *23*(4), 333-346.

Roberson Jr, D. N., & Merriam, S. B. (2005). The self-directed learning process of older, rural adults. *Adult Education Quarterly*, *55*(4), 269-287.

Robin, B. R. (2008). Digital storytelling: A powerful technology tool for the 21st century classroom. *Theory into practice*, *47*(3), 220-228.

Robin, B. R. (2015). The effective uses of digital storytelling as a teaching and learning tool. *Handbook of research on teaching literacy through the communicative and visual arts*, *2*, 429-440.

Rossiter, M. (1999). A narrative approach to development: Implications for adult education. *Adult education quarterly*, *50*(1), 56-71.

Rossiter, M. (2002). Narrative and Stories in Adult Teaching and Learning. ERIC Digest.

Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The gerontologist*, *37*(4), 433-440.

Rule, L. (2010). Digital storytelling: Never has storytelling been so easy or so powerful. Knowledge. *Quest,* **38**, 4, 56.

Russell, H. (2008). Later life: A time to learn. *Educational Gerontology*, *34*(3), 206-224.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual review of psychology*, *52*(1), 141-166.

Ryff, C. D. (1995). Psychological well-being in adult life. *Current directions in psychological science*, **4**, 4, 99-104.

Sadik, A. (2008). Digital storytelling: A meaningful technology-integrated approach for engaged student learning. *Educational technology research and development*, *56*(4), 487-506.

Saldaña, J. (2015). *The coding manual for qualitative researchers*. Sage.

Sandelowski, M. (2000). Focus on research methods-whatever happened to qualitative description?. *Research in nursing and health*, *23*(4), 334-340.

Sarbin, T. R. (2004). The role of imagination in narrative construction. *Narrative analysis: Studying the development of individuals in society*, 5-20.

Savery, J. R., & Duffy, T. M. (1995). Problem based learning: An instructional model and its constructivist framework. *Educational technology*, *35*(5), 31-38.

Sawhney, N. (2009, June). Voices beyond walls: the role of digital storytelling for empowering marginalized youth in refugee camps. In *Proceedings of the 8th International Conference on Interaction Design and Children* (pp. 302-305). ACM.

Scardamalia, M., & Bereiter, C. (2006). Knowledge building. *The Cambridge*.

Schank, R. C. (1995). *Tell me a story: Narrative and intelligence*. Northwestern

Schell, R., Hausknecht, S., Zhang, F., & Kaufman, D. (2016). Social benefits of playing Wii Bowling for older adults. *Games and Culture*, *11*(1-2), 81-103.University Press.

Schell, R., da Silva, D., Hausknecht, S., & Kaufman, D. (2018). An Online Digital Storytelling Course for Older Adults: A Design Approach. In *EdMedia: World Conference on Educational Media and Technology. Association for the Advancement of Computing in Education (AACE).*

Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. Jossey-Bass.

Schuetz, J. (1982). Geragogy: Instructional programs for elders. *Communication Education*, *31*(4), 339-347.

Seligman, M. E. (2012). *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster.

Selwyn, N. (2005). The social processes of learning to use computers. *Social Science Computer Review*, *23*(1), 122-135.

Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational researcher*, *27*(2), 4-13.

Shaffer, D. W. (2006). Epistemic frames for epistemic games. *Computers & education*, *46*(3), 223-234.

Shaffer, D. W., & Clinton, K. A. (2006). Toolforthoughts: Reexamining thinking in the digital age. *Mind, Culture, and Activity*, *13*(4), 283-300.

Shapira, N., Barak, A., & Gal, I. (2007). Promoting older adults' well-being through Internet training and use.

Sheehy, G. (1995). New Passages: Mapping your life across time. New York: Random House.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, *22*(2), 63-75.

Sherlock, A. (2013). Larger than life: digital resurrection and the re-enchantment of society. *The Information Society,* **29**, 3, 164 – 76.

Shore, S. (2001). Talking about whiteness:"Adult learning principles" and the invisible norm. *Making space: Merging theory and practice in adult education*, 42-56.

Singhal, S., Neustaedter, C., Odom, W., Bartram, L., & Heshmat, Y. (2018). Time-Turner: Designing for Reflection and Remembrance of Moments in the Home. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (p. 179). ACM.

Slegers, K., Van Boxtel, M. P., & Jolles, J. (2008). Effects of computer training and Internet usage on the well-being and quality of life of older adults: A randomized, controlled study. *The journals of gerontology series B: Psychological sciences and social sciences*, *63*(3), P176-P184.

Stacey, G., & Hardy, P. (2011). Challenging the shock of reality through digital storytelling. *Nurse education in practice*, *11*(2), 159-164.

Stahl, G. (2004). Building collaborative knowing. In *What we know about CSCL* (pp. 53-85). Springer, Dordrecht.

Stake, R. E. (1995). *The art of case study research*. Sage.

Stake, R.E. (2003). Case studies. In Denzin, N., & Lincoln, Y. (eds). *Strategies of qualitative inquiry*, (2nd ed.). Sage.

Statistics Canada. (2015). Canada's population estimates: Age and sex, July 1, 2015. Retrieved on July 24, 2018 from https://www150.statcan.gc.ca/n1/daily-quotidien/150929/dq150929b-eng.htm

Statistics Canada. (2017). Immigration and ethnocultural diversity: Key results from the 2016 census. Retrieved on December 18, 2017 from http://www.statcan.gc.ca/daily-quotidien/171025/dq171025b-eng.htm

Stenhouse, R., Tait, J., Hardy, P., & Sumner, T. (2013). Dangling conversations: reflections on the process of creating digital stories during a workshop with people with early-stage dementia. *Journal of psychiatric and mental health nursing*, *20*(2), 134-141.

Stewart, K., & Gachago, D. (2016). Being human today: A digital storytelling pedagogy for transcontinental border crossing. *British Journal of Educational Technology*, *47*(3), 528-542.

Subramaniam, P., & Woods, B. (2016). Digital life storybooks for people with dementia living in care homes: an evaluation. *Clinical interventions in aging*, *11*, 1263.

Tendero, A. (2006). Facing your selves: The effects of digital storytelling on teacher education. *Contemporary Issues in Technology and Teacher Education*, *6*(2), 174-194.

Thang, S. M., Sim, L. Y., Mahmud, N., Lin, L. K., Zabidi, N. A., & Ismail, K. (2014). Enhancing 21st century learning skills via digital storytelling: Voices of Malaysian teachers and undergraduates. *Procedia-Social and Behavioral Sciences*, *118*, 489-494.

Theurer, K., & Wister, A. (2010). Altruistic behaviour and social capital as predictors of well-being among older Canadians. *Ageing and Society*, *30*(1), 157.

Townsend, K. C., & McWhirter, B. T. (2005). Connectedness: A review of the literature with implications for counseling, assessment, and research. *Journal of Counseling & Development*, *83*(2), 191-201.

University of Winnipeg Oral History Centre. 2014. Nindibaajimomin: *Creating and Sharing Digital Stories on the Legacy of Residential Schools – Guide 2.* The Aboriginal Healing Foundation. Available online at http://nindibaajimomin.com/wp-content/uploads/2014/03/Guide2-Planning.pdf.

van Bel, D. T., Smolders, K. C. H. J., IJsselsteijn, W. A., & de Kort, Y. (2009, January). Social connectedness: Concept and measurement. In *Intelligent Environments 2009: Proceedings of the 5th International Conference on Intelligent Environments, Barcelona, Spain 2009* (pp. 67-74).

Van Dijk, J., & Hacker, K. (2003). The digital divide as a complex and dynamic phenomenon. *The information society*, *19*(4), 315-326.

Veenhof, B., & Timusk, P. (2014). Online activities of Canadian boomers and seniors. Retrieved on July 28, 2018 at https://www150.statcan.gc.ca/n1/pub/11-008-x/2009002/article/10910-eng.htm

Vivienne, S. (2011). Trans digital storytelling: everyday activism, mutable identity and the problem of visibility. *Gay and Lesbian Issues and Psychology Review*, *7*(1), 43.

Vivienne, S., & Burgess, J. (2013). The remediation of the personal photograph and the politics of self-representation in digital storytelling. *Journal of Material Culture*, *18*(3), 279-298.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wagner, N., Hassanein, K., & Head, M. (2010). Computer use by older adults: A multi-disciplinary review. *Computers in human behavior*, *26*(5), 870-882.

Wallace, J., Wright, P. C., McCarthy, J., Green, D. P., Thomas, J., & Olivier, P. (2013, April). A design-led inquiry into personhood in dementia. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 2617-2626). ACM.

Wang, F., Lockee, B. B., & Burton, J. K. (2011). Computer game-based learning: Perceptions and experiences of senior Chinese adults. *Journal of Educational Technology Systems, 40*(1), 45-58.

Waycott, J., Vetere, F., Pedell, S., Kulik, L., Ozanne, E., Gruner, A., & Downs, J. (2013, April). Older adults as digital content producers. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 39-48). ACM.

Waycott, J., Davis, H., Warr, D., Edmonds, F., & Taylor, G. (2016). Co-constructing meaning and negotiating participation: Ethical tensions when 'giving voice'through digital storytelling. *Interacting with Computers*, *29*(2), 237-247.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge university press.

Wenger, E. (2000). Communities of practice and social learning systems. *Organization*, *7*(2), 225-246.

Wise, A. F., & O'Neill, K. (2009). Beyond more versus less: A reframing of the debate on instructional guidance. In *Constructivist Instruction* (pp. 94-117). Routledge.

Wister, A. V., Malloy-Weir, L. J., Rootman, I., & Desjardins, R. (2010). Lifelong educational practices and resources in enabling health literacy among older adults. *Journal of Aging and Health*, *22*(6), 827-854.

Woo, Y., & Reeves, T. C. (2007). Meaningful interaction in web-based learning: A social constructivist interpretation. *The Internet and higher education*, *10*(1), 15-25.

World Health Organization (WHO) (2002). *Active aging: A policy framework*. CITY: World Health Organization.

World Health Organization. (2015) *World report on ageing and health*. World Health Organization.

Yang, Y. F. D. (2012). Multimodal composing in digital storytelling. *Computers and Composition*, *29*(3), 221-238.

Yang, Y. T. C., & Wu, W. C. I. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. Computers & Education, 59(2), 339-352.

Yin, R. (1997). Case Study Evaluations: A Decade of Progress? *New Directions for Evaluation, 76*, 69-78.

Yin, R. K. (2004). *The case study anthology*. Sage.

Yuksel, P., Robin, B. R., & McNeil, S. (2011, March). Educational uses of digital storytelling around the world. In *Proceedings of Society for Information Technology & Teacher Education International Conference* (Vol. 1, No. 1, pp. 1264-1271).

Yuksel-Arslan, P., Yildirim, S., & Robin, B. R. (2016). A Phenomenological Study: Teachers' Experiences of Using Digital Storytelling in Early Childhood Education. *Educational Studies, 42*(5), 427-445.

Appendix A.

SFU
FACULTY OF EDUCATION
Education Building, Room 8558
8888 University Drive, Burnaby, BC,
Canada V5A 1S6
TEL 604.773.7809
FAX 77`8.782.4203
dkaufman@sfu.ca
www.educ.sfu.ca
2014/15

BACKGROUND INFORMATION

TODAY'S DATE: _____
Name: _____

1. Sex: ☐ female ☐ male ☐ other

2. Age:
   ☐ <55 ☐ 55 – 59 ☐ 60 – 64 ☐ 65 – 69 ☐ 70 – 74 ☐ 75 – 79
   ☐ 80 – 89 ☐ 90+

3. Marital status:
   ☐ Single
   ☐ Divorced/legally separated
   ☐ Widowed
   ☐ Married/ Partner

4. Which city do you live in? _____

5. Did you immigrate to Canada?
   ☐ Yes; when _____
   ☐ No (go to question 7)

6. Where do you currently live?
   ☐ house/townhouse/apartment/condominium
   ☐ assisted living facility
   ☐ nursing home
   ☐ other (specify _____)

7. Living arrangement:
   ☐ alone
   ☐ in a couple
   ☐ with family
   ☐ with others

8. What language do you speak at home?

_____

9. What racial, cultural, or ethnic group do you identify with(you may select more than one)
   - ☐ White
   - ☐ Chinese
   - ☐ South Asian (for example, East Indian, Sri Lankan, etc.)
   - ☐ Black
   - ☐ Filipino
   - ☐ Latin American
   - ☐ Southeast Asian (for example, Vietnamese, Cambodian, etc.)
   - ☐ Arab
   - ☐ West Asian (for example, Iranian, Afghan, etc.)
   - ☐ Japanese
   - ☐ Korean
   - ☐ Aboriginal (for example, First Nations/North American Indian, Metis, or Inuit)
   - ☐ other (specify) _____

10. What is the highest level of formal education you have completed?
   - ☐ Less than high school
   - ☐ High school or equivalent (such as GED)
   - ☐ Some college/CEGEP
   - ☐ 2-Year degree (associate, diploma)
   - ☐ 4-Year degree (BA, BS)
   - ☐ Professional designation (e.g., CA, CGA, CMA)
   - ☐ Master's Degree
   - ☐ Doctoral Degree (e.g., PhD, EdD, MD, JD)

11. Describe your working situation at the present time:
   - ☐ Not working
   - ☐ Working part-time (paid or voluntary)
   - ☐ Working full-time (paid or voluntary)

12. Are you retired?

- ☐ Yes
- ☐ No
- ☐ Never worked (go to question 14)

13. What was your previous/what is your current employment?

- ☐ Business, finance and administration
- ☐ Natural and applied sciences and related occupations
- ☐ Health
- ☐ Education, law and social, community and government services
- ☐ Art, culture, recreation and sport
- ☐ Sales and service
- ☐ Trades, transport and equipment operators and related occupations
- ☐ Natural resources, agriculture and related production occupations
- ☐ Manufacturing and utilities
- ☐ other (specify) _____)

14. Do you have access to a computer?

- ☐ Yes, at home
- ☐ Yes, elsewhere
- ☐ No

15. If yes, what type of computer?

- ☐ Yes, PC desktop
- ☐ Yes, PC laptop
- ☐ Yes, iMac
- ☐ Yes, iPad
- ☐ Other _____
- ☐ No

16. Do you use e-mail?

- ☐ Yes
- ☐ No

17. How often do you access the Internet?
    - ☐ Once a month or less
    - ☐ Once a week
    - ☐ Several times a week
    - ☐ Every day
    - ☐ Several times a day

18. What is your skill level in using computers?
    - ☐ None (Never used computer technology)
    - ☐ Beginner (Low level)
    - ☐ Intermediate (Middle level)
    - ☐ Expert (High level)

19. What is your skill level in using the Internet?
    - ☐ None (Never used computer technology)
    - ☐ Beginner (Low level)
    - ☐ Intermediate (Middle level)
    - ☐ Expert (High level)

20. Do you have experience in any of the following? (check all that apply)
    - ☐ Digital Storytelling
    - ☐ Creative writing
    - ☐ Telling stories
    - ☐ Writing in a journal
    - ☐ Other (please specify): _____

Appendix B.

SFU
FACULTY OF EDUCATION
Education Building, Room 8558
8888 University Drive, Burnaby, BC,
Canada V5A 1S6
TEL 604.773.7809
FAX 77`8.782.4203
dkaufman@sfu.ca
www.educ.sfu.ca

2014/15

Digital Storytelling Workshop Evaluation

Please rate the following:

1. The facilitator's ability to communicate clearly

Very poor Poor Fair Good Very good

2. The facilitator's helpfulness

Very poor Poor Fair Good Very good

3. The process used to create a digital story

Very poor Poor Fair Good Very good

4. The software used to create a digital story

Very poor Poor Fair Good Very good

---

5. I found the workshop

Very easy Easy Just right Difficult Very difficult

Did your skill in the following improve during the digital storytelling workshop:

6. Using a computer

Not at all Slightly Moderately Very Extremely

7. Using computer software

Not at all Slightly Moderately Very Extremely

8. Using the internet

Not at all Slightly Moderately Very Extremely

9. Creating digital stories

Not at all Slightly Moderately Very Extremely

Please answer the following:

10. Did you work on your digital story outside of the workshop? Yes / No

11. If YES, how many hours in total do you think you spent working on your digital story outside the workshop? _____ hours

12. Did anyone help you with the process? Yes / No

If YES, who? How did they help you?

_____

_____

_____

SFU
FACULTY OF EDUCATION
Education Building, Room 8558
8888 University Drive, Burnaby, BC,
Canada V5A 1S6
TEL 604.773.7809
FAX 77`8.782.4203
dkaufman@sfu.ca
www.educ.sfu.ca

13. What did you like best about the workshop?

14. What could have been improved?

15. Is there anything else you would like to add?

THANK YOU VERY MUCH FOR HELPING WITH OUR RESEARCH. YOUR ANSWERS WILL HELP US UNDERSTAND THE EFFECTS OF PARTICIPATING IN A DIGITAL STORYTELLING PROJECT.

Appendix C.

Focus Group Agenda

1. Introductions
2. Brief summary of the project
3. Guided discussion based on the following questions:

Challenges, benefits and strategies:

➘ How is digital storytelling programming different from other recreational programming (in terms of availability and interest)?

➘ What do you think are the benefits and drawbacks of working in a setting with other older adults?

➘ What elements or strategies would you say are essential in a digital storytelling project (i.e., scheduling considerations, encouraging participation, and access issues)?

Digital Storytelling Workshop:

➘ Describe your 8-week experience.

➘ What did you learn?

➘ What did you get out of the workshop?

Selection Criteria:

➘ What encouraged you to participate in the project like this?

➘ What would encourage others to participate in the project like this?

➘ What would be the maximum amount of time you think people should commit to a project like this? Are there are resources/supports that would make that commitment easier?

Impacts:

➘ What impacts, if any, did the digital storytelling workshop have on your life?

➘ What impacts do you think your story could have on people viewing your story?

➘ Have you noticed any changes in your life since you have participated in the digital storytelling workshop? What sorts of changes have you seen (short, medium, and long term)?

Thank you for your participation! Your comments will be summarized along with those from other focus groups and we will send you a copy of our findings.

Appendix D.

Supplementary Data File

Description:

The accompanying video is an example of a digital story created by one of the participants in the course.

File name:

DanceMeHome.mp4