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ARTICLE

Digitising the wisdom of our elders: connectedness through digital storytelling

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Abstract

Digital storytelling provides older adults with an opportunity to become digital producers, connect with others through story and explore their life history. The authors report on the results of a digital storytelling project for older adults. The study investigated the experiences and perceived benefits of older adults who created digital stories during a ten-week course and explored the reactions of story viewers to the digital stories they viewed during a special sharing event. Eighty-eight older adult participants in Metro Vancouver who attended one of 13 courses offered were included in the study. Most of the participants were female and over half were immigrants. Results from the focus group interviews demonstrated a rich array of reported social and emotional benefits experienced through the process of creating a digital story within the course. Three main themes emerged: social connectedness through shared experience and story, reminiscence and reflecting on life, and creating a legacy. Viewers who attended a 'Sharing Our Stories' event reported that the stories were meaningful, well constructed and invoked a range of emotions. The researchers conclude that digital storytelling may help digital storytellers increase connectedness to others and to self. Additionally, this connectedness may extend over time through the process of examining the past to create a digital story that can serve as a legacy to connect to future generations.

Keywords: digital storytelling; older adults; seniors; legacy; social connectedness; reminiscence

Introduction

Storytelling is a method of sharing knowledge that has been used around the world for much of human history. As individuals, we often perceive our lives and personal experiences in the form of short narratives (Bruner 2004). These life narratives are embedded in our social relationships, where they are shared, reshaped and retold throughout our lifetime (McAdams 2001). Stories form an important part of our identity and communication, providing an opportunity to explore self, culture and others (Agosto 2013; Hibbin 2016). Furthermore, the act of sharing and reflecting upon life narratives may contribute to increased self-knowledge (Birren and Deutchman 1991). When life stories are shared, they can become a unique form

of communication by creating an opportunity to understand others in the context of their experiences.

For older adults, storytelling may be a valuable tool for reflecting upon life experiences and the lessons learned throughout their lifespan (Birren and Deutchman 1991). In turn, this may help to increase their sense of wellbeing and identity. Moreover, if an artefact is created from the narratives, such as in the form of a written story or a recording, it can be passed on to create a legacy (Birren and Deutchman 1991). Digital storytelling allows older adults to be content producers (Waycott *et al.* 2013), using their life history as a basis for a story and incorporating photographs, music and other media to create a short video. Their stories then can be shared among a small local group such as family or a wider community. These stories could also affect viewers who may reflect on their own emotional responses and empathise with the storyteller (*e.g.* Christiansen 2011; Loe 2013; Stacey and Hardy 2011).

The interest in using storytelling, and the extension of incorporating multimedia, to allow older adults to connect and share their life experiences is a new yet growing field of exploration. The potential value of exploring personal narratives, reflecting on these and sharing life stories has been discussed by various authors, such as autobiographical narrative work (Birren and Deutchman 1991) and reminiscence (Bohlmeijer *et al.* 2007). Creating opportunities for older adults to share and socially connect, while exploring their life history through digital storytelling, could be valuable for numerous reasons. For example, a reciprocal sharing of stories may help reduce feelings of loneliness or isolation through socially connecting to others and building new relationships (Waycott *et al.* 2013). The reflective process may help older adults connect to self and identity (Birren and Deutchman 1991), and it may allow older adults to connect to future generations through the creation of a digital artefact (Manchester and Facer 2015). However, there have been limited studies exploring lifelong learning and the possible benefits of digital storytelling. The present study investigated and reported on the experiences and benefits of participants who completed a digital storytelling course. Since storytelling is not an isolated experience, the study also reports on the reactions to the digital stories of story viewers from the community who attended a special viewing session.

Background

Digital storytelling extends the ancient practice of telling stories by using technology to combine text, images, music, narration, sound effects and videos (Rule 2010). Storytellers create a narrative about their personal experience in the compelling form of a digital story, which is a compact multimedia artefact that can be shared easily. When creating a digital story, basic steps used in short story writing are usually followed, *e.g.* introduction, conflict, climax and resolution. These elements are carefully selected and used to write a script that will become the basis of the story. An important difference between digital storytelling and traditional storytelling is that the use of multimedia to combine images, music and voice with the narrative track allows creators to explore the aesthetic quality of their stories through a multi-faceted approach.

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The creative process used in digital storytelling can provide older adults with the means to capture and reflect on memories and lived experiences. The 'wisdom' accumulated throughout their lives is often valuable to them and may also be valuable to others. While wisdom has been attributed to older people in nearly all world societies from ancient times, modern research on the psychology of ageing has paid little attention to this construct. Furthermore, digital stories may allow older adults to reach a large audience as they can be heard, viewed and shared easily (Chung 2007; Lambert 2006; Opperman 2008). Digital stories can be shared publicly by uploading them to the internet, saving them on a digital media device such as a flash drive or showing them to others in public events. With the use of new media, digital stories may allow an increase in the everyday voices of elders being heard (Burgess 2006). A digital storytelling course also can be viewed as a lifelong learning experience. Many of the positive aspects attributed to lifelong learning have been found to lead to an increase in the wellbeing of older adults (Boulton-Lewis, Buys and Lovie-Kitchin 2006; Weinstein 2004).

In recent years, there has been increased interest in the importance of the social and psychological wellbeing of older adults (Agosto 2013; Fang *et al.* 2017). Wellbeing is not a clearly defined concept, neither is what it should include, since wellbeing is subjective. Furthermore, there are many theoretical variations on what the indicators are or should be. Diener *et al.* (1985) discuss three hallmarks of wellbeing: it is subjective, it includes a positive affect, and it covers many integrated areas. However, individual areas of wellbeing can be observed and may influence overall wellbeing. For example, Keyes (1998) distinguishes the idea of social wellbeing that examines a person's social health along five dimensions: actualisation, acceptance, integration, contribution and coherence. Ryff (1995) explores the idea of psychological wellbeing in which the main indicators are self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth. He differentiates his theoretical version of self-acceptance from other previous theories, as it not only includes the ways in which individuals perceive themselves in the positive, but also their acceptance of the negative. Recently, positive psychologists have also conceptualised wellbeing. For example, Seligman (2012) proposed the PERMA theory of wellbeing – positive emotion, engagement, relationships, meaning and accomplishment.

The act of sharing stories may have various advantages for social and psychological wellbeing. Research suggests that we form a narrative identity that helps us situate ourselves within a social and societal context (McAdams and McLean 2013). Sharing stories can occur in casual social situations in which the teller shares a life event and the listener contributes through reactions to it (Pasupathi 2001) or through more formal settings. Previous research on storytelling and older adults has examined the effect of recalling lived experiences and sharing them through autobiographical narratives and reminiscence (Birren and Deutchman 1991; Bohlmeijer *et al.* 2007). Birren and Deutchman (1991) suggest that sharing autobiographical narratives can have several positive effects for older adults such as increased self-esteem, a stronger identity and finding increased meaning in their lives. A review by Bohlmeijer *et al.* (2007) on reminiscence research, a process of recalling events in a persons' life, found that reminiscing had a moderate effect on life satisfaction and wellbeing. In another study,

Meléndez Moral *et al.* (2015) conducted research on integrative reminiscence. In this style of reminiscence, participants recall events and try to integrate past and present to form meaning. The study consisted of 34 participants who underwent eight reminiscence sessions. They completed a pre- and post-questionnaire with results suggesting that reminiscence led to positive outcomes of increased self-esteem, life integration, life satisfaction, psychological wellbeing and reduced depression. Although digital storytelling is not intended as a therapeutic activity, it does require personal reflection upon the past and present to create the artefact that, in turn, may be therapeutic.

The multimedia aspects of digital stories may give storytellers further opportunities for exploring expressions of a lived experience. Recounting personal narratives does not simply involve a disembodied voice but is multimodal in nature, with the speaker often using intonation, hand gestures, acting, song and other characteristics to bring their story to life (Ochs and Capps 1996). As well, while images in storytelling are seen in traditional picture books, slide shows or photograph albums, they are being increasingly used in social media storytelling, such as Instagram and Snapchat (Vivienne and Burgess 2013). The multi-modal approach of digital storytelling provides options to play with meaning through juxtaposing and re-imagining a life narrative (Davis and Weinshenker 2012). It takes time and reflection for the digital storyteller to sort through images and find the best visuals and sounds to capture the moment, mood and meaning. An example of this from one of our digital storytelling courses relates to a woman who has been struggling with a medical condition and is caught in a stream of opposing medical advice. While she read off a long list of 'do this and do that' medical advice, a video of water going down a street drain played. As her voice sped up, the image of the water swirled in circles, emphasising her confusion and distress.

Another aspect of storytelling, both digital and traditional, is that it is a social activity that involves a high level of communication. Previous studies have shown that when individuals lack communication, social connection to others and social capital (benefits and resources available to a person through social contacts), these can contribute to isolation and loneliness (Cacioppo and Patrick 2008; Cannuscio, Block and Kawachi 2003; Rook 1990), which in turn can result in problems such as depression and cognitive decline for older adults. A study by Forsman *et al.* (2012) surveying 6,838 older adults showed that increased social capital was effective in maintaining wellbeing and a positive mental state, including a reduction in depressive symptoms. Additionally, a study by Theurer and Wister (2010) of 4,486 Canadians over 65 found that social capital had a highly significant association with wellbeing, including a sense of belonging and reported happiness. These studies point to the possible benefits of providing older adults with opportunities where they can share their experiences, make connections, and build relationships with others in a positive and supportive social environment.

In leisure or educational activities, designing for group interactions may help with such issues as reducing loneliness, increasing self-esteem through lifelong learning opportunities and increasing a feeling of social connectedness (Cattan *et al.* 2005). The most successful examples of intervention for loneliness involve group methods and participatory activities (Cattan *et al.* 2005). In a systematic review of health promotion interventions for older adults, Cattan *et al.* (2005)

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found that group interventions involving some form of education, training and social activities were associated with a moderate level of success. Additionally, a study by Kim and Merriam (2004) that surveyed older adults on their motivation for attending educational programmes found that the main incentives were interest in the subject and socialisation.

Many authors have suggested that shared computer activities are effective in increasing social networks and connections (Choi and De Nitto 2013; Schell *et al.* 2016; Xie 2007). For example, Schell *et al.* (2016) found that interacting in a Wii Bowling tournament increased older adults' social connectedness and reduced loneliness. The social effect was not limited to the group and the event; Schell *et al.* (2016) also found that the excitement of the social activities extended to friends and family not competing in the tournament. Wii Bowling became a topic of conversation amongst participants and an activity they could do with grandchildren, other family members and friends. Furthermore, a follow-up study found it extended the social network beyond the limited time of the tournament as participants maintained many of the social connections gained (Hausknecht *et al.* 2015). The ability for technology-based social activities to foster relationships outside the moment may be valuable for extending networks and connections. Thus, digital storytelling could be used to promote not only learning (Hausknecht, Vanchu-Orosco and Kaufman 2017), but also may increase social connections, and through the digital artefact created play a role in extending the experience beyond the immediate course.

Digital storytelling may also help to increase understanding, empathy and identity in older adults and the viewers of the stories. For example, a digital storytelling course designed for patients with early stage dementia found that the patients became more social, and the creative affordances of digital stories helped maintain a sense of identity (Stenhouse *et al.* 2013). In another study, nursing students viewed patients' digital stories to increase learning about patient care and create a more patient-centred approach (Christiansen 2011). This was found to be an effective way for the students to engage with the patient experience. An intergenerational study by Hewson, Danbrook and Sieppert (2015), where university students worked with older adults to create a digital story, revealed that both the students and the older adults gained a greater understanding of each other.

Older adults often express an interest in sharing their life experiences with their family and society. Sharing their stories can be considered an act of leaving a life legacy, so that older adults' families and other individuals may learn through their life experiences (Birren and Deutchman 1991). Older adults may feel that leaving a legacy is a way to keep their 'presence' alive, even after death (Wallace *et al.* 2013). Manchester and Facer (2015) suggest that older adults demonstrate deep interest in providing a digital life legacy so they can still connect with their family and other individuals in society as they get older. This may be related to older adults' desires to continue to express their ideas and be valuable members of society. Older adults may wish to share their many life experiences with a wider audience as these stories may resonate with others outside their respective families. Digital media can provide a way to store, preserve and share the digital legacies of older adults (Sherlock 2013).

Purpose and goals

The digital storytelling course is intended to give participants an opportunity to explore their life stories and create a digital artefact, so they can easily share a piece of wisdom or a legacy story from their life with course participants and others. The process requires each participant to reflect on their past and choose a short story that represents a moment of their life. Not only are stories shared, but the aesthetic quality of the past is explored through incorporating aspects such as visuals and sound. The shared experience, during the course, of designing and digitising personal stories may have unique affordances for increased social connectedness and self-understanding. Thus, wellbeing may be enhanced through the shared experience, increased social connections and lifelong learning.

The purposes of the current research project were to explore the possible benefits and experiences of older adults who took one of our digital storytelling courses and to gain a better understanding of such areas as socioemotional aspects of the process. Furthermore, storytelling is not done in isolation, as stories are created to be shared with others. Thus, this course was not intended to be simply an isolated activity as the stories were shared at the end of the course during a 'Sharing Our Stories' event within the community. At the 'Sharing Our Stories' event, a short questionnaire was given to viewers to determine how they engaged with the older adults' personal stories.

Research questions

(1) What do older adult participants, who completed a digital storytelling course in which they created an artefact of a personal lived experience, perceive to be the main benefits and experiences of the process?
(2) What are story viewers' opinions about, and reactions to, the digital stories they viewed at a special event in which the older adults' digital stories were shown?

The digital storytelling course

Informed by StoryCenter (previously The Center for Digital Storytelling), the *Digital Storytelling Cookbook* (Lambert 2010), and creative writing and film techniques, the digital storytelling course for older adults was designed with two separate, yet integrated, phases: story creation and digital production. This enabled sufficient time for deciding on and then writing a solid story before incorporating the technology. Similarly, Ohler (2006) suggested that the first task in digital storytelling is to teach learners how to be storytellers, and the second is to use multimedia to enhance their story. Additionally, the course was designed to create as many collaborative experiences as possible to enhance community, social connection, sharing and knowledge construction; however, each participant worked on their own digital story.

The authors designed the course outline, unit plan, weekly lesson plans and weekly handouts used by all facilitators to ensure the content and delivery were standardised. After the first few iterations of the course, minor changes were made to improve upon the initial design. New facilitators received a full day of

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Table 1. Outline of the digital storytelling course

Week	Session
1	Introduction to the research study and digital storytelling course
2	Introduction to WeVideo; practise creating a digital story
3	Writing a script (draft)
4	Sharing your story and revising story
5	Images and storyboarding
6	Voice, sound, music; record the narrative
7	Editing images and narrative
8/9	Edit, final touches
10[1]	Publish, share final digital story

Note: 1. In the versions that were only eight or nine weeks, weeks 8–10 were combined.

training. This was followed by an opportunity to be a co-facilitator on one of the courses where they could learn from an experienced facilitator; it was intended to promote a deeper understanding of the digital storytelling process and workshop expectations. The course also was increased in length from eight or nine to ten weeks.

During the course, participants learned about story creation and were provided with numerous opportunities to share ideas and drafts of their stories. This created a writing group environment that allowed participants to share narratives and get to know each other before moving to the computer. Following story creation, participants digitised their work by combining voice, images, music and sounds to illustrate their narrative (Table 1). Although there were many opportunities to exchange stories and share understanding of each other's life histories, social opportunities became more limited as participants spent increased time at their computers focused on their individual stories. However, since an initial collaborative environment was established, participants often provided peer feedback on multimedia choices for the stories.

The exception to the two-part structure occurred in week 2 when a session was dedicated to introducing the software (Table 1). This session was added after the first iteration and provided a better understanding of the digital story process as a whole, giving participants perspective on story length, number of pictures to use and other characteristics that differentiate digital from written stories. In addition to the course sessions, tutorials were offered midway through the course to provide supplementary assistance to those that needed extra help learning the digital storytelling software. WeVideo, a digital storytelling software, was chosen as it is browser-based and thus allows for access on both Windows-based and Apple computers on the internet. Thus, it was expected that participants would spend some time working on their stories outside the course. A typical digital story takes a minimum of 20 hours to create, not including time spent sharing work and learning about the storytelling process (University of Winnipeg Oral History Centre 2012).

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Table 2. Demographic information of participants who attended the digital storytelling course

Variable	N	Valid %
Sex:		
Female	68	81.9
Male	15	18.1
Age:		
>55	5	5.9
55–59	10	11.8
60–64	14	16.5
65–69	20	23.5
70–74	11	12.9
75–79	8	9.4
80–89	13	15.3
90+	4	4.7
Immigrated to Canada:		
Yes	43	51.2
No	41	48.8
Skill level using computer:		
None	3	3.6
Beginner	27	32.1
Intermediate	50	59.5
Expert	4	4.8

Note: N = 88 (not all participants answered all questions).

Method

Course participants

Eighty-eight older participants in Metro Vancouver were included in the study (Table 2). No computer skills were required as we wanted to make the experience accessible to all older adults. The participants ranged from those who had worked with computers in their careers to those who had never used a computer. For this reason, at least one facilitator was provided for each two to three participants during the technical phase of the digital story production process. Participation in the research component was not mandatory, that is, people could participate in the course without consenting to participate in the research aspect. Course enrolments ranged in size from six to 12 participants.

Viewer participants

Forty-seven viewers from the community came to one of the 'Sharing Our Stories' events. The viewers consisted of family, friends, participants and community members.

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Settings

Data were collected at several sites, including museums, libraries, community centres, seniors' centres and assisted living facilities. The courses lasted ten weeks (a few of the earlier courses lasted eight or nine weeks due to the researchers not being able to secure centre facilities for a longer period) and participants met once a week for two-hour sessions, with extra tutorial sessions for those who wanted them. Participants were invited to attend focus group interviews at the end of the course.

Research approach

A questionnaire was given to participants in the first course session with questions asking for demographic and background information. A post-course evaluation of the digital storytelling course, comprising quantitative and qualitative questions, was completed by participants. The results are not reported here but can be found in Hausknecht, Vanchu-Orosco, and Kaufman (2017). Focus group interviews were conducted at the end of the final class. Story viewers' feedback was collected during a special 'Sharing Our Stories' event where family, friends and the community were invited to come and view the final stories.

Post-course focus group interviews were conducted at the end of the final course session. The interviewers used semi-structured questions and explored benefits, challenges and experiences encountered throughout the course. These focus groups provided an opportunity for participants to discuss their experiences openly. It also gave them an opportunity to debrief. Since the course involved a group experience, focus groups were seen to be an appropriate approach for collecting this information. The focus group interviews were recorded and transcribed.

At a special showing of the participants' stories called 'Sharing Our Stories', data were collected from guests who came to see the digital stories. A questionnaire which contained both closed and open-ended questions, including a section asking story viewers to rate the digital stories they viewed and comment on their top three, was filled out by audience members including the digital storytellers.

Data analysis

An inductive approach to analysing the focus group data was taken. A thematic analysis was conducted on the focus group transcripts whereby data were coded, categories were created and the data were examined for overarching themes (Saldaña 2012). Two researchers read through the transcripts and made notes. Following this, they conducted an initial coding of the first interview together, creating an initial codebook. Once the codebook was created, they coded a focus group separately and later came together to discuss the coding. This process involved sorting the interview responses into broad categories. The transcripts were entered in NVivo, which was used for coding and organising the final analyses of the transcripts. Examining the responses, a clear pattern of the most prominent categories was noted by the number of sources and references that occurred under specific categories. These main categories

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were compared to the notes taken by the interviewers during the interview. Once categories were decided upon, the quotes gathered under each category were reread and themes were constructed. Some categories were merged together or separated at this point.

Results

Participant backgrounds

The results in Table 2 show that, of the participants responding, the great majority of respondents were females (81.9%) compared to males (18.1%). There was a reasonable balance in all age categories from 55 to 89 years, with smaller numbers for the youngest and oldest participants. More than a quarter (29.4%) of respondents were 75 years old or older. Approximately half (51.2%) had immigrated to Canada at one point in their life. Almost two-thirds (64.3%) of respondents self-rated their computer skill as 'intermediate' or 'advanced'. This meant that 35.7 percent rated their computer skill as 'none' or 'beginner'.

Focus group interviews

Following the last course session, participants were invited to attend a focus group interview to discuss their experiences. Transcripts from 13 focus group interviews were coded and organised into themes. Many of the prominent themes were related to social and emotional dimensions that could be considered as components of wellbeing. Three major themes that emerged were: social connections to others in the course through shared learning experiences and sharing stories (social connectedness though shared experience), the value of reminiscing and reflecting on their past and present lives (reminiscence and reflecting on life) and the importance of preserving their story (creating legacy). These themes appeared in at least 11 of the 13 focus group interviews and were presented by multiple participants in each focus group interview.

Social connectedness through shared experience and story

Focus group participants often discussed sharing the learning experience with others in the course, as well as being able to share their stories with and gain insight from others. As pointed out by many participants, the shared experience was considered to be important. Some participants felt the sharing process helped to create a social space, as pointed out by a male participant in his sixties:

> 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.

The course was also seen to contribute to a sense of community, bringing people together, as can be seen by such comments as:

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

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

A female participant in her seventies who recently immigrated to Canada talked about how much 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.

While the course provided a space for meeting, it also provided a place for sharing stories and getting to know others, as mentioned by a female participant in her late sixties:

> 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.

Furthermore, focus group participants also discussed sharing their stories with others, listening to others, and the exchange of understandings and perspectives as a valuable way to learn about and from each other.

> …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 sixties, widow)

> 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 sixties)

> 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 sixties)

A female participant in her late seventies who had experience writing and reading poetry commented 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 the 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 empathise with the person.

However, a younger female participant pointed out that it can also be intimidating to share with other people that they do not 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.

Reminiscence and reflecting on life

A second theme observed in all focus group interviews was that of the digital storytelling process providing an opportunity for participants to reflect upon their lives and reminisce. The following participants' comments provide clear examples of this:

> 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' (*laughs*). (Female, late eighties, who lived in the Vancouver area for her whole life)

> Gosh, 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 sixties)

Reflecting on one's life story with the addition of multimedia features (*e.g.* images, sounds, music) sometimes changed the participant's perspective. One female participant in her sixties who had previous writing experience described how the process of matching imagery with her story and the digital storytelling course 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.

While another female participant described it as bringing her back to herself:

> I'm excited again. It, it's, umm, 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 telling the story, made the life story beautiful or emotional. It seemed to bring the story to life for participants, as noted in these comments:

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> I found that when I start to tell my story there are like moments that I really, it's really 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. (Female, sixties, immigrated from China)

> Then the story of ones' life. It's beautiful, even if it's sad. When you tell it, it becomes beautiful. (Female, late seventies, immigrated to Canada)

For many, the recalling of their past and putting these into words and images was extremely emotional. A widow in her eighties commented that 'It made me cry. When I finished that story, it was like I relived it all over again. And it was very emotional.'

Creating legacy

A third theme that arose was that of preserving one's story and creating legacy. There were some participants who wanted to share what they had learned in life, while others wanted to create pieces of history for family, and others simply wanted their story preserved. For example, one female participant commented that it was important 'to have these stories, you know, memorialised or something'. Some participants discussed how they wanted to leave their stories to family. As one participant wrote:

> 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, seventies)

Other participants pointed out that children or grandchildren were interested in family history and digital storytelling is a way to share this.

> 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, sixties)

> 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 eighties)

The multimedia aspect of digital storytelling was important to the idea of legacy as participants were not only preserving story, but also voice, images and/or videos, and capturing the essence of their personality. One female participant in her eighties stated that she wished she had family recordings:

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

The preservation of participants' own voice telling the story was also discussed, as seen in this conversation between focus group participants.

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Table 3. Viewers' mean ratings of digital stories[1]

Story number	Interest	Enjoyment
1	3.67	3.61
2	4.64	4.80
3	4.50	4.43
4	4.20	4.36
5	4.64	4.52
6	3.86	3.73
7	3.67	3.58
8	3.49	3.39
9	4.18	4.20
10	3.54	3.68
11	4.37	4.29
12	3.24	3.26
13	4.15	4.20
14	4.07	4.05

Note: 1. Based on a five-point scale: 1 = not at all, 3 = moderately, 5 = extremely.

Participant 4: When they're getting gone we're going to have our voice telling that story. (Female, late fifties)
Participant 1: I know (*laughter*). (Female, sixties)
Participant 5: …and it makes a difference, having your voice. (Female, sixties)

One quote seemed to sum up the value of leaving a digital story legacy:

> I think, I think it's also not only for the people that we, that are gonna take it and learn it, I think it's also to (*muffled*) the next generation that we share these stories with the younger generation, to pass it on. (Male, late fifties)

Story viewers' feedback

Story viewers' feedback (N = 47) was collected during one of the 'Sharing Our Stories' events that showcased the digital stories created by the course participants. Story viewers were asked to rate (1–5) and comment on each story, choose their three favourite stories and then respond to questions about their three favourite stories. The rating scale allowed participants to rate stories from 1 to 5 (where 1 = not at all, 3 = moderately, 5 = extremely), providing information regarding their interest and enjoyment of each story. Viewer ratings of interest and enjoyment of the stories showed that all stories were moderately to extremely interesting (mean = 3.2–4.6) and enjoyable (mean = 3.2–4.8) (Table 3).

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Stories related to overcoming adversity were rated highly and were often the top-rated ones. For example, the top-rated story described the journey of a dancer with unexpected physical limitations who found herself struggling with being unable to move as she once had. Through a journey of self-discovery, the turning point of the story describes how she came to a new understanding of her body and found herself able to dance in a different way.

Viewers feedback on their three favourite stories

Story viewers were also asked to choose their top three stories and explain their choices. A simple thematic analysis was conducted on the viewers' written responses. Since viewers tended to write a single sentence or phrase, the researchers went through these written comments at the phrase level and determined what the focus was. The three main categories found, in order of the highest number of participant comments, were (a) story viewers connected to the lessons and meaning of the stories, (b) story viewers valued stylistic and structural appeal, and/or (c) the story caused an emotional reaction.

The most common comments were that viewers chose their top stories because they connected to the lessons and meanings within the stories. Viewers seemed to appreciate hearing the life stories and relating these to the storyteller and meaning in life: 'Because they had a powerful message, meaningful'; 'Appreciation of family strength – self growth'; 'Determination and perseverance of the individual's family'; 'Gives Life's valuable lessons! Legacy!'; 'I like stories of overcoming adversity'. At other times viewers related the stories to their own life, as is exemplified by comments such as: 'Challenge me to pursue a passion'; 'Short and sweet message begs me to respect my relationship with my mother and daughter'.

Some viewers liked the artistic construction of some of the stories. Those who commented on the stories' 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'.

The stories touched many of the viewers at an emotional level. The comments often expressed how the stories made them feel. Emotional reactions were expressed by comments such as: 'touched something in me and my story'; 'kept my interest because entertaining or emotional'; 'touching, one message, honesty, humour, creativity, spirit'. 'They were a great blend of emotion, history and personal history'.

Discussion

The researchers noted that there was an overarching theme of connectedness, using a broad understanding of connectedness, *i.e.* feeling linked to someone or something. Participants reported a connection to each other, to themselves and to the stories of their past. They also reported on the importance of preserving and sharing the knowledge embedded within their story with others and future generations, thus connecting to others and the future. Furthermore, the viewers also seemed to connect to the stories either through the meanings within them, the emotions they invoked and/or the stylistic choices.

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Not surprisingly, the great majority of participants were women. This is consistent with other studies undertaken with older adults and digital technology (Kaufman *et al.* 2016; Schell *et al.* 2016). The age distribution was fairly balanced, with there being fewer participants in the younger category and the oldest category. This suggests that older adults in all age groups are interested in telling their story or leaving their legacy. Additionally, all age groups were able and willing to engage with new media to create their story. It was interesting to note that almost half of participants were immigrants, with many of these older adults having another history in the 'old country' and wishing to preserve memories of this former period in their lives and link it to their current life.

Results for the first research question, 'What do older adult participants, who completed a digital storytelling course in which they created an artefact of a personal lived experience, perceive to be the main benefits and experiences of the process?', provided a rich exploration and understanding of the social and emotional aspects of the course experience, which may contribute to social and psychological wellbeing. Similar to previous studies (Birren and Deutchman 1991; Hewson, Danbrook and Sieppert 2015), the older adults enjoyed sharing their stories. The exchange of stories and feedback from others appeared to provide a deeper interaction between many of the participants. Participants connected to each other through the exchange of ideas and pieces of their life histories. These interactions provided a way to create community, social connections, and valued perspectives for feedback on their work. Although the stories were narratives of the past, by sharing them with others they relived and reshaped their memories. This aligns with McAdams' (2001: 118) suggestion that 'Stories live to be told to others. Life stories, therefore, are continually made and remade in social relationships and in the overall social context provided by culture'. The viewer feedback also suggests that sharing these lived experiences through a digital story was rewarding not only for the teller, but also for the audience who related to the emotion and meaning within.

Although sharing stories alone may provide avenues to create many of these social aspects, the addition of sharing images and incorporating multimedia had specific advantages. For example, participants felt that sharing their stories through a multimedia format fostered valuable connections to others outside the course, and to others in the future, particularly family. Thus, there seemed to be a sense of maintaining connection through preserving their legacy and history through their digital story. The digital nature of these stories allows for easy dissemination and preservation in the local community and beyond (Klaebe *et al.* 2007). This preservation was not limited to the story but included expressions within a person's voice and aesthetic multimedia choices. Thus, as noted by the viewers, the story was emotive and meaning laden. Overall, the experience seemed to create connectedness, not just on a local time scale, but in various ways across place and time.

The digital story process also appeared to create a connectedness to self through their reflections upon their life, both in the present and the past. The relationship between participants and their story seemed to change as they formed new perspectives on the meaning of the narrative as it was transformed through the digital story creation process. As seen in previous research, having to explore life story through multimedia seems to require individuals to redefine their understanding of these

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events (Davis and Weinshenker 2012), as seems so pronounced in the participant comment 'by having to go and put images in the story, my story changed'. Many of the participants expressed feeling strong emotions as they reminisced over their lives and recreated events.

The role of creating a digital story, *versus* simply writing a story, seemed to provide a unique way to share legacy. Many of the participants were excited as they could share these simple, short films with very busy family members. Some mentioned how they wish they had captured the sound of their parents' voices. Whether the stories were specifically affected by the intended audience is difficult to determine; however, they seemed to be influenced by the classroom audience and feedback. Within the course they received an immediate reaction by their peers, and this may give them a better understanding of how future audiences may react. This is one of the advantages to oral storytelling (Miller and 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.

Results for the second research question, 'What are the viewers' opinions about and reactions to the digital stories they have viewed?', illustrated the powerful impact the stories had on story viewers. Viewers provided a wide variety of reasons for choosing their top-rated stories, ranging from the emotional content of the stories to the life lessons provided. Digital stories have been considered a powerful way to connect to others' experiences, both emotionally and as an opportunity to learn (Christiansen 2011). Issues such as overcoming adversity, giving valuable life lessons and the meaningfulness of stories were often commented on, sometimes relating to the storytellers' experiences and at other times it reminded participants of their own life and the lessons and meaning within them. However, many also commented on the importance of having a well put together story. Digital stories are creative pieces that require organisation and thought on how the different aspects will work together. Finally, viewers also commented on how the stories moved them emotionally.

In combination, the results begin to demonstrate the socioemotional impact of the digital storytelling course, both for participants and those viewing their stories. The connections formed are not only with those that shared the course experience but also with those whom the participants share their stories with outside the course. These stories create a personal legacy, allowing participants to explore who they are and what they are like. The opportunity for older adults to share their life lessons and invoke emotions and understanding could lead to a much broader experience of connecting to others. Digital storytelling has promise as an opportunity to reminisce about life and share understandings with others. In so doing, the stories have the potential to impact others with their deep personal understanding of history that comes from individual lived experiences.

Limitations and future directions

The sample of participants comprised those who responded to an advertisement to attend the course at museums, libraries, community centres, seniors' centres and assisted living facilities. These may be more outgoing older adults, especially

as these were the first iterations of this course, and thus these participants are most likely first adopters. We believe that older adults who do not get out and socialise as much may have increased benefit from the programme. Furthermore, our sample had many more women than men. One approach the researchers are examining is to offer the programme online to see if it can support a wider audience.

Building social relationships, navigating through digital programmes, going through old photographs, and other activities associated with the course take time. It is also important that participants have a completed product at the end, as this adds to the richness of their experience and allows them to share their digital story with others. It should be noted that the digital storytelling course requires a large amount of time and commitment from the project team. Although these courses benefit diverse groups, it may be worth conducting a train-the-trainer programme so that care workers can work with a small number of people and take the time needed. The researchers are also investigating other formats, such as a three-day weekend course.

The researchers are following up this study by developing an intergenerational programme where youth and older adults can create stories together. This may also provide added technical support and help with the issue of time. The effects of the intergenerational sharing of personal histories could provide insight into whether digital stories may help to change perspectives of age. Finally, one aspect that appeared throughout the focus groups and the viewing is the importance of legacy. It may be interesting to examine legacy through story in more detail as it could give older adults a sense of agency and connection to future generations. At this point, the digital stories created have not been fully analysed. This is currently being completed and will provide a more thorough understanding of the experiences the older adults shared in their stories and the meaning behind them.

Conclusion

This study examined some of the benefits and experiences of a digital storytelling course for older adults. Insights gained from participants' feedback allows for a deeper understanding into the benefits of sharing stories, not only for the digital story creator but also for the story viewer. The rich experience that participants reported suggests that digital storytelling can be a rewarding activity for older adults. Older adults within the course not only made connections to others during the story creation process but were able to reflect on their lived experiences and form new meaning. This study confirms previous research and theory on the usefulness of storytelling in our lives (Bruner 2004; McAdams 2001). Additionally, it contributes to a deeper understanding of the unique advantage to using multimedia as a part of the storytelling process. The confidence gained by creating an artefact that participants were proud of, and could be shared with others, may have long-lasting benefits.

Overall, the positive response of the participants is encouraging and offers evidence that older adults find creating their own digital stories a worthwhile educational experience that may add to their sense of wellbeing. Through reflecting on past life narratives, participants can create an artefact to share a moment in time

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with others, and viewers of these artefacts appear to appreciate the value of the digital storytellers' creations. Thus, the act of creating and sharing digital stories seems to allow for connecting to the past, to the present and to the future, while also connecting to self and others.

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