

# 8 Technological glitches and creative interactions in *Sharing Dance*

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## **Introduction**

Screens, the internet, and technology are typically not what you might think of when it comes to dancing or engaging with the arts. For the Sharing Dance Older Adults program developed by Baycrest and Canada's National Ballet School (NBS) however, technology plays a critical role. To provide wider geographical access to a program designed to be accessible to older people with cognitive and physical limitations, information communication technology (ICT) is the key – and a few glitches are to be expected when making it work. As outlined in Chapter 2 (Bar and Dalrymple) in this book, the mechanisms put in place to support the remote delivery of the dance program affected how dance teachers would tailor instructions to participants from afar. The aim of this chapter is to explore the role of ICT in expanding remote access to those instructions and the technological limitations that influenced experience of the digital Sharing Dance program. To further this exploration, we will introduce an additional step inspired by the research project as the digital expansion extends across international borders to Finland. After providing some background on ICT in the context of social inclusion for rural older adults, we will talk about how participants experienced the use of technology to access the online dance classes. We will discuss what participants said about their experiences and what we observed as they interacted in response to technical difficulties during the pilot studies. We will then pose a new analytic angle to the study that builds on this work in an international context, through a close examination of these same types of interactions. This chapter is about the process of research and looking at similar phenomena in different ways, in this case the technical difficulties commonly referred to as glitches.

## **Technology in the context of social inclusion for rural older adults**

Technology is taken for granted as the great problem solver of our time. The COVID pandemic has shown us how dependent upon technology we can become to connect across distances and to be productive through time zones. Yet, in terms of social inclusion, access to technology is not always equal.

Many are excluded from services and programs as they are increasingly mediated by technology. In rural areas in Canada, higher proportions of older adults live where there is a double digital divide – where limited ICT infrastructure impedes the remote delivery of programs and services – and where some people lack familiarity in use of the technology (O’Connell et al., 2018).

Social inclusion has been prioritized by many agencies from global to local levels. It is a broad concept encompassing many themes that can each be looked at from different perspectives and at different levels. For the purpose of our study on enhancing social inclusion, we utilized and adapted a framework developed by Walsh et al. (2020) that makes sense of the relational nature of multiple levels of social exclusion for rural older adults in interlinked domains. In this chapter, we focus specifically on the role of technology in Sharing Dance and the relevant interlinked domains of social relations and access to services and resources. We explore interpersonal dynamics in participant experiences of the on-screen dance instruction and discuss institutional and community capacity to access the digital resource. Technology in this context can be seen as a mediating force that can both alleviate and exacerbate barriers to social inclusion.

One of the important lessons that we learned as part of our broader study was that different types of technology affected social inclusion in different ways and that remote delivery is a complex process involving multiple stakeholders (see Kosurko et al., 2022). As a mediating factor, ICT improved access to an important service by connecting older adults in rural areas to a dance program, while at the same time, it presented new challenges in areas with differing capacities to operate the technology such as internet infrastructure and individual comfort levels with operating ICT equipment (see Kosurko et al., 2020a).

Other previous studies have shown that ICT can be used to address issues of older adult social exclusion such as social isolation for older people (Chen and Schulz, 2016) including people living with dementia (Pinto-Bruno et al., 2017), and those who live in rural areas who may not use technology often (Warburton et al., 2013). However, challenges have been identified for organizations to be able to access programs and services delivered by ICT including training of staff (Van Der Heide et al., 2012). This chapter explores how the use of digital technology influenced participants’ experiences in accessing an arts-based program to enhance social inclusion.

### **Examining the role of technology in Sharing Dance**

To explore the role of technology in the Sharing Dance program as it relates to enhancing social inclusion, we look at data collected from 2017 to 2019 as part of the *Improving Social Inclusion for People with Dementia and Carers through Sharing Dance* project when the eight-week Sharing Dance program pilots were delivered in community and long-term residential care (LTRC) settings in 12 non-metropolitan settings in two Canadian provinces: Ontario and Manitoba (see Skinner and Bar, Chapter 3). Interviews were conducted

for participants' personal reflections of their experiences with the dance program and how it was delivered. Observations focused on embodied interactions and expressions during weekly sessions, recorded in field notes structured by a semi-structured guide that developed from pilot to pilot. Field notes included reflective and descriptive accounts of settings and participants; and interactions between participants and on-screen instructors (OSI) during the program.

Developed by Baycrest and NBS, Sharing Dance aims to make dance accessible to older people with a range of physical and cognitive abilities, including people living with dementia (see Bar and Dalrymple, Chapter 2). Originally developed to be delivered in-person, the program was subsequently adapted for remote delivery through video streaming of on-screen instruction of dances with seated or standing options. On-site facilitators with experience leading older adults in physical activity were identified locally for each site (in both community and LTRC settings, for example, the recreation director or yoga instructor in the community setting or the recreational therapist in an LTRC setting) and supported the delivery of the program. Research participants included older people, people living with dementia, and family carers (ranging from 66 to 96 years old); administrators and staff in both community and institutional settings; facilitators and volunteers supporting participants. There were a total of 289 participants in the three phases in both regions. Technology for the pilot study was provided where necessary by research partners and with community foundation funding that allowed for the purchase of large-screen smart TV monitors and laptops and signal boosters (rocket hubs) to enhance Wi-Fi connectivity. Installation and technical support were provided by the research partner and program provider (see Skinner and Bar, Chapter 3 for a full description of the research design and methods).

### **Glitches, glitching, and the struggles with technology in the experiences of Sharing Dance**

What we learned about using technology for the Sharing Dance program came from participant experiences and perceptions as well as our research team observations and reflections in the field. We examined what participants said about the delivery of the program in response to questions in interviews and focus groups, as well as the field notes from observed dance classes during the eight-week sessions. Participants included older adults as well as their formal and informal carers, (staff, family, volunteers) and the facilitators who were key players in the delivery of the program. During interviews and focus groups, the subject of technology came up in response to questions such as: How did the mode of delivery influence the experience (i.e., specifying live vs. pre-recorded stream, on-screen instruction, etc.)? What aspects of facilitating the sessions did you feel were most challenging (i.e., for facilitators)? Can you talk about a particular moment in a session or an experience during the program that you did not enjoy? What did you like least about this program/your role?

In the transcripts of interviews and focus groups, as well as field notes, diaries, and research team meeting notes, technical difficulties emerged as a prominent theme, reported as a challenge in the early Peterborough pilots (Warrener et al., 2017). In all subsequent pilots, we assigned technology as a thematic node using NVivo12 software in the qualitative data analysis that examined the text in all of the documents. Technology was consistently reported as a challenge in all pilot reports. We applied a word frequency query to the technology node in data from the final pilots for each region and found that the most common words (top four out of the top 15 words excluding “screen” and “group”) used to describe the mode of delivery involving technology were: “glitches,” “glitching,” “struggled,” and “difficulties” (see Figures 8.1 and 8.2 for graphic depiction of word frequency).

Using the NVivo12 software, we determined that glitches were a prominent feature of the described experiences of technology during the research project. Looking more closely at examples of when and how the word “glitch” was uttered, we identified varying perspectives on and approaches to the influence of technology on the Sharing Dance program. In the following section, we look first at what was said about the technical glitches by research participants when they were asked directly in interviews about their



*Figure 8.1* Word frequency in mode of delivery/technology node for Peterborough pilot study.



*Figure 8.2* Word frequency in mode of delivery/technology node for Brandon pilot study.

experiences. We then look at what the program participants did in situ – how they responded to situations when the described glitches were observed.

### **Dancers versus facilitators: “It’s no big deal,” “but technical difficulties are the worst”**

Many of the Sharing Dance participants described how the OSI at NBS taught the remote classes in such a way that they felt “as if they were in the same room,” “talking directly to them.” It was only when the technology would stutter or “glitch” that this illusion was interrupted and the experience in some cases turned into frustration. Looking at examples of what participants had to say about these glitches gave us insights about the different perspectives involved in the use of technology to deliver the program remotely. Many participants, including the older people interviewed about their

participation in a community centre below, described their experience of the program delivery as “good,” with the technical glitches or interruptions being a minor disturbance in the program:

It was ok, but I did notice occasionally there was some interruption in the video – that happens.

It was good. The video cut out a few times but life goes on– it’s a few seconds really. It’s not a big deal.

Each of these participants described how the interruptions of the program were acceptable as part of the video delivery and a minor disruption in their experience. For facilitators, however, technology emerged more often as a theme when they talked about what they found most challenging or what they liked least about the program or their role, as illustrated by the interview responses of three facilitators below:

Trying to keep the computer running, having glitches – technical difficulties are the worst things.

When the technology was hiccupping, I could see the frustration on people’s faces. I felt helpless and that made it disappointing.

And the only other thing that made it difficult was technology, but there’s nothing we can do about that. Obviously. Every week – other than the last two – every week we had glitching moments when it would stop and we would still be singing and we would just kind of wait.

In their role to deliver the program to people in the room, facilitators faced frustration directly from their co-present participants as they waited through internet delays on repeated occasions. Describing feelings of helplessness and saying that “there was nothing we could do about it” indicates their dependence upon the smooth operation of the technology to make the program work. While participants indicated that the technical difficulties were no big deal, the facilitators voiced experiences of stress that were more negative concerning the technical aspects of accessing the program remotely.

These frustrations were also described by facilitators with reference to setting up the program:

Just the set up – I just find that we are not properly outfitted to do a program in that manner, so it’s the fact of having to pull the TV out plug things in, run this cord, get speakers out, get online, change this setting, then not being able to get online, then waiting for [the researcher’s] arrival in order to be able to use the [Wi-Fi rocket] hub - that was probably my least [favourite aspect].

Many facilitators raised concerns about the steps and equipment involved with operating the program. In the above quote, the facilitator talks about how the research associate provided additional equipment, a Wi-Fi rocket

hub, in order to boost the internet signal for the smooth streaming of the video streams. This also points to the dependence on the resources provided by the research project that made access to the program possible (see Menec, Skinner, and Kosurko, Chapter 9 for a deeper discussion on the research influence).

In addition to setting up equipment, facilitators would access the online program by logging in to the web-based platform on the computer. This was a challenge for some facilitators – and others who would have to access the program. One volunteer who filled in for a facilitator described the experience of logging-in her interview:

That was stressful – I’m sure if I did it a couple of times and actually it was my stuff and I would have passwords written down and practicing it ten times before hand – just the logging in seemed to ... always be stressful there.

In the situation described above, the process of logging in was associated with stress because the volunteer was using equipment that was not their “stuff” and in that sense was not an expert familiar with the local technological terrain. Considerations would need to be made for non-expert users to function in place of the expert who possesses deeper understanding of the material setting such as where passwords were recorded (Arminen and Poikus, 2009). This adds to considerations for a variety of users to be able to access the program within the same facilities as well as from different locations, emphasizing the dependence upon individual facilitators to run the program within their “own” facilities.

Our analysis of what was said about the technical glitches indicates that participants in the dance program were not as stressfully affected by the technical difficulties as the facilitators running the program. Understanding facilitators’ experiences is salient in recognizing the smooth operation of the program as a co-participant leading others engaged in the program. Facilitators’ insights were helpful in the development of the program to define the role of facilitators and requirements for their training and support in accessing and operating remote programs smoothly. As the technology develops in response to these “user experiences,” the support for facilitators would also need to adapt and evolve. (For more about the development of delivery, see Kosurko et al., 2021). More support is necessary for various facilitators as important end-users of the program in different settings.

### **Keep going, even if we glitch! Responses to technical difficulties**

In addition to listening to what participants and facilitators said about the technology involved with the remote delivery of the program, we also examined what they did in response to technological glitches while they were participating in the dance. In field notes, we could reference descriptions of participants’ interactions during the glitches. In one example captured in a

field note below, the internet connection stopped, and the group was unable to continue the program. The facilitator, staff, and participants worked together to remember the final two dance routines from the program that they had learned in the previous weeks:

The facilitator goes to the computer and attempts to adjust the internet connection and still the program won't restart. The facilitator sits down and says, "I'm going to finish it," and with the support of staff, thinks through to remember the sequence of the moves from previous weeks and then leads the class in the baseball sequence. The facilitator gets everyone singing "Take Me Out to the Ballgame" and they run the routine three times all together. All in the group follow along. ... then they lead the group through a singalong with swaying arms to "You are my sunshine," which the group follows along with. When the song finishes, they announce refreshments and all applaud.

The group in this situation was able to complete the program from their collective memory, given that it was their third week in the program. Rather than giving up and ending the session, the facilitator made the decision to "finish it," and with reminders as to what was next from co-participants, they were able to collaborate to complete the dance as they had learned it. This is of interest because it demonstrates participants' engagement with the program remotely and how they were able to realize the Sharing Dance program even when the technology failed to deliver it in "real time." The ability of the group to work together to remember the dance they had been taught twice previously also speaks to the strength of the program to engage communities in dance from beyond the dance teachers' presence in the room. While the completion of this particular dance class may have been somewhat of an interpretation, the participants shared a dance they had learned as it was delivered remotely by NBS. This shared endeavour by participants would not have been possible without the facilitator having assumed the role of the leader, which not all facilitators might feel comfortable doing.

In addition to trying to finish the dances as they were taught, participants responded to technical glitches in other ways. In the example below, from field notes in the Brandon pilot, participant Seth freezes his body in suspended motion and makes a joke:

There is a pause with the Wi-Fi – the rocket hub icon is flashing as connectivity is limited. Seth makes a joke, his foot is suspended in the air. "This is going to be awkward..."

The next example is similar to the situation above, where the program stops and everyone freezes in response. In this field note, the facilitator likens it to a children's game of statue, where players have to not move in order to stay in the game:

“Oh dear,” says one as the computer glitches. “Then we should scratch,” says the facilitator – referring to the movements that should follow the mosquito bite. She also jokes that it’s like playing statue as a kid – remember?

Here the facilitator suggests that the dancers should pretend to “scratch,” in keeping with the narrative of the cottage scene that they were just performing, in a continuation of the engagement with the program narrative while it was glitching. In each of the examples of freezing moments above, there is a sense that the program will start again, and participants keep their bodies suspended in wait. Alternatively, participants were also observed dancing through the glitches, understanding that they would continue to happen. The field note below describes a moment where the glitching is repetitive:

All are moving along in sync with the instructor, the facilitator and each other, moving their legs forward and back, brushing the floor with their feet on the way out for a “shuffle – and back,” placing their foot back under their chair, then switching feet. Nick smiles, looking up to the screen and moves his feet in and out, a smile still on his face. “Out – out – in,” says the on-screen instructor, “Out out,” and then the computer glitches and the facilitator says, “In!” to finish the sequence... The computer starts and stops a few times. “Keep on going,” says the facilitator as she continues the movements, “even if we glitch.”

In this example, the facilitator again continues to lead the program where the OSI left off, by completing the sentence with “in!” Then the facilitator explicitly instructs the group to keep going with the movements following her demonstration. This is another example of how the participants were able to remain engaged in the program regardless of the technology glitches through the participation of the dancers as led by the facilitator.

There were two ways that we accessed our understanding of the use of the word “glitches” and moments of technical difficulties from varying perspectives: we observed situations and recorded with field notes what we saw; then we asked people what they experienced and recorded what they said. From what people said, we found discrepancies in attitudes and opinions about the influence of technology on their experiences. From a participant’s perspective, technical difficulties were “no big deal,” but from the perspective of the facilitator responsible for implementing the program, technology involved moments of stress and frustration. This gave us insights and allowed us to make recommendations about the different roles involved in the implementation of the remote delivery of the program. From what we observed, we could identify different ways that participants (including facilitators) responded in situations when glitches happened. They collaborated to finish the sequence as they had learned it; they paused and waited for the program to resume; and they improvised an imaginary continuation of the scenario provided by the program.

## **New horizons to explore social inclusion mediated by technology**

As the role of technology in the development of Sharing Dance became clearer during the data collection period, new research questions developed seeking to understand how technology mediates the social connectedness of rural older adults in remotely delivered programs like Sharing Dance. The research associate (and lead co-author of this chapter) developed a Ph.D. project to explore this phenomenon in an international context that would take the Sharing Dance program and research to Finland (see Kosurko et al., 2021).

This new research project looks at social connectedness in the context of the dance sessions with a group outside of Canada. It focuses on the micro level of interpersonal social interaction, in order to observe how participants achieve social connectedness while interacting in an online dance sequence. How technology mediates this interaction can be observed in the procedures people use to together make sense of what is going on in situations where technology is used. The procedures that people use to make sense of their everyday circumstances are referred to in social research as ethnomethodology and a tool that is often used to look closely at this phenomenon is conversation analysis (Heritage, 1984). When conversation analysis is used to look at how people make sense of situations together, it is called ethnomethodological conversation analysis (EMCA). Emphasis is placed on observable actions in sequence, rather than personal introspection as the source of data (Moore, 2013). This research method builds up the details of sequences of interaction as they are observed, to analyse interactions as they occur as well as how they are described in participants' personal reflections of their experiences. In the context of the Sharing Dance program and social inclusion, we can detail within the sequences of interaction where technology affords or constrains participants to orient to the dance program in parallel, co-present activity (Arminen et al., 2016).

Building on the work in the previous section that used a qualitative, thematic analysis of participants' descriptions, a detailed analysis of the interaction mediated by technology can be made using EMCA tools by drawing on "the resources of language, the body, the environment of the interaction, and position in the interaction fashioned into conformations designed to be, and to be recognizable by recipients as, particular actions" (Schegloff, 2007, p. xiv.). The process of EMCA starts with an initial noticing of a moment of interest within an interaction. Then actions are identified in turn taking sequences and collections of these are compiled to build a claim and support it with evidence. These observable outcomes are crucial to support analytic claims, demonstrating how participants respond to actions in ways that we can observe. This approach can be used to gain insights into how relationships are built in social actions, how bodies relate to each other or their environments, interactions between body, talk, and the material environment, turn taking, who orients to whom and how those orientations change. Our special interest in applying this method to Sharing Dance is in how social connectedness is made visible and maintained in digitally mediated dance.

To illustrate the EMCA method, we show a preliminary example from the international pilot in Finland of how participants respond to a technical glitch in the Sharing Dance video in Figure 8.3. We will demonstrate a sequence of turns in a series of images with transcriptions to detail the order of actions. Commentary is provided in the text bubbles. The sequence will show how Sharing Dance participants, Sirpa and Leena, respond to the OSI and music in the video. When the program stops due to a glitch in the technology on Line 7, Sirpa freezes in suspended motion and Leena looks to the facilitator. Two seconds later, when the video resumes, Sirpa joins the dance from where it – and she – left off, with renewed vigour, laughing.

In Figure 8.3, participants in the picture frames Sirpa (left) and Leena (right) are sitting so that they can see the TV screen. The inset figure of the OSI is the on-screen instructor. Off-screen, there is a facilitator (F), who is also following the movements on the screen.

Sirpa freezes in position (Line 8) and remains suspended for almost two seconds until the music starts again. Her action of the dance in progress is interrupted by the technological glitch. Lerner and Raymond (2021) would refer to this glitch as a visible source of body trouble, to which Sirpa responds by adjusting her action (freezing). In a sense, it is the technology's turn to make a move in the interaction. As a computer system and machine, there is no intention behind the technology in creating this interruption (Suchman, 1987), but it sets up a response from the participant in the dance program nonetheless. The frozen pause raises a question about how this participant (Sirpa) orients to the technology in relation to co-participants – that may be answered by what happens next in the order of the sequence.

After Sirpa freezes, Leena looks to the facilitator on Line 9, then turns their head to the screen, acknowledging first an awareness of co-participants in the room and then orienting to the screen as the source of the trouble. The facilitator's comment, "Desolana" (Spanish for "nothingness") on Line 13 is an example of how participants use humour to manage disruptions, in an attempt to maintain focus on the collective task. In this instance, the facilitator is using the technological glitch as a potential relational resource, rather than something that is blocking interaction (Rintel, 2013). However, Sirpa neither responds to the facilitator's comment nor looks away from the screen. She orients to and prioritizes the manual activity of the dance sequence, frozen until the technology resumes the dance instruction. Her embodied conduct (freezing) demonstrates that her priority orientation is with the manual activity of the on-screen dance choreography, but not the interactional "trouble" of her co-present participants (Kamunen, 2019). In the next moment however, Sirpa shows that she is also still aware of others in the room as capable of seeing her performance of freezing and moving again, made evident by her enthusiastic laughter on Line 16 when the program resumes. These moments considered in sequence as unfolding in relation to each other denote a social relevance: Leena reacts to Sirpa's freezing by looking to the facilitator for an explanation, which prompts a joke from the facilitator while

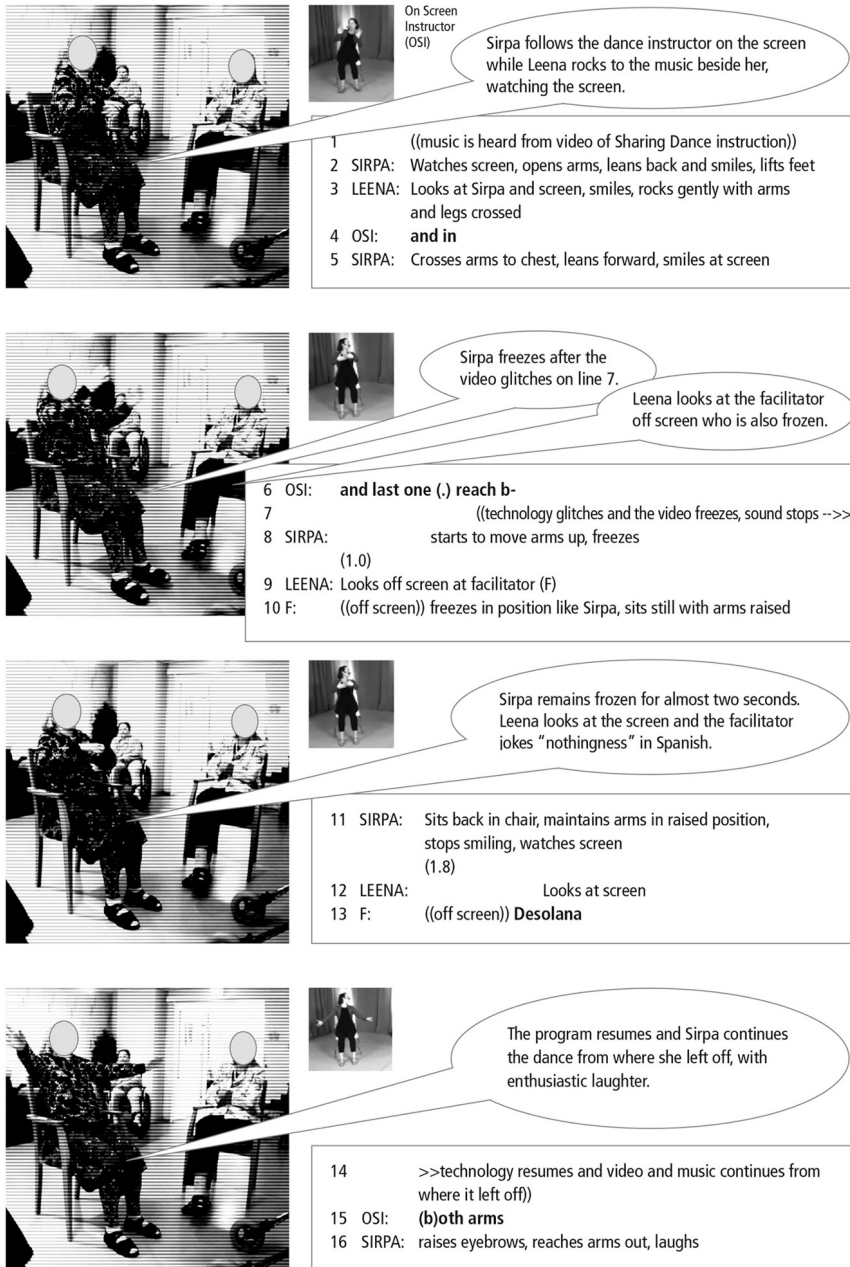


Figure 8.3 Example of EMCA transcript analysis for an international pilot study in Finland.

Sirpa remains focussed on the collective action of the dance. The Sharing Dance program enables a connectedness to the OSI for Sirpa and may also provide relational resources for other co-present participants.

### **Discussion and concluding comments**

In this chapter, we examined the role of technology and discussed its potential limitations in terms of the glitch that interrupts the engagement with the online dance program. What participants said about their experiences drew our attention, in this chapter, to the prevalence of technical difficulties and we found that these mattered differently to different stakeholders. While older adult participants felt these were minor disturbances, facilitators found the technological aspects of the program to be a source of distress.

From our observations of technical difficulties during dance sessions, we found that glitches provided the impetus for creative interactions and opportunities for participants to connect in the room. Facilitators responded in their roles to continue to lead classes from memory and by improvising in creative ways to keep the Sharing Dance program going beyond the limitations of the technology. This exemplifies the effectiveness of NBS' strategy to make dance accessible to people with cognitive and physical challenges and in broader communities. Continued support of facilitators and carers in the technological aspects of the program along with training opportunities that support creativity in leading activities will be beneficial as the program expands further.

In introducing a new branch of study that seeks to explore internationalization of the program, we demonstrated the use of an EMCA analytic lens to also look at how the glitch was made relevant and creatively dealt with by participants in the group. By looking closely at the interaction of one participant with the technology of the screen, we could see that the engagement with the on-screen program was prioritized above interacting with the people in the room. This raises questions of how focus is prioritized for participants in hybrid digital and co-present interactions and how facilitators approach the task of encouraging interaction among co-present members of the group in parallel to engagement with the program. In situations where technology is a part of the environment supporting interactions, the EMCA approach is helpful for understanding how social connectedness is maintained among participants in complex circumstances with multiple foci, as well as informing the design of technology in the context of older adult social inclusion (Arminen, 2017).

In the context of other studies, our results build on existing evidence that effective delivery of ICT for the delivery of programs to support social inclusion will be dependent upon the digital infrastructure and systems in place to support its uptake including training of staff and carers (Van der Heide et al., 2012). Limitations of our study in terms of technology were in the data collected that pertained more to delivery of the program and not explicitly about the use of technology itself. We analysed the data provided in what people

said, the words they chose, and the words used in field notes during the data collection. Field notes were limited to when the program began and ended and observations were not recorded of facilitators setting up the program, for example. Much of our data on how the delivery affected the program was limited to interviews with participants and facilitators and relied on how they articulated their responses. Many participants would focus on the OSI when responding to questions about “the delivery of the program.” The technology was a minor focus in the evaluation objectives of the program for this study; however, it emerged as an important topic of interest during the research. In future studies, purposefully observing processes where facilitators interact with technology such as setting up equipment and logging on to systems or dealing with technical difficulties may inform the implementation of remote programs with sensitivity to the contexts of different settings. In order for programs like Sharing Dance to enhance a meaningful social life of older adults including people living with dementia and in rural areas, considerations need to be made for the local context of people in places where they intend to engage.

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