CONNECT HACKNEY
ageing better



Can the use of technology help to reduce social isolation and loneliness?

An in-depth study of digital inclusion projects for older people living with or at risk of social isolation and loneliness

INTERIM REPORT

Report prepared by: Lauren Herlitz, Chiara Lombardo, and Angela Harden, Institute for Health and Human Development, University of East London (UEL)

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Report summary

Background and aims

There has been growing interest in reducing the digital divide between older people (50+) and the younger generation who have grown up with online and digital technology in their daily lives. Part of the drive to reduce this divide is the potential for technology to facilitate older people's social contact and participation, although research to date reveals limited evidence on the effectiveness of interventions in this area. As part of their programme of work to reduce social isolation and loneliness in older people, Connect Hackney commissioned three one-year digital inclusion (DI) projects for older Hackney residents. The projects aimed to build participants' confidence and skills in using digital devices (smartphones and tablets), applications ('Apps') and the internet.

The research described in this report is part of a broader local evaluation[1] of the Connect Hackney programme which is guided by a set of eight test-and-learn questions. One of these questions is focused on whether the use of technology can help to reduce social isolation and loneliness. To contribute to answering this question, a small-scale in-depth study of two digital inclusion projects for older residents in Hackney is being undertaken. Key areas of inquiry were: project reach, engagement and retention of participants, project implementation and adaptation, and impact of the project and any digital skills developed on participants.

This report presents the findings from the data collected so far. As of December 2019, all the planned observation sessions (four observation sessions involving 14 participants, four project providers and three volunteers) and all four planned interviews with project providers have been undertaken, and qualitative data has been collected from six out of a planned 12 participants. Available quantitative data from 84 participants has also been analysed. Follow-up interviews to qualitatively assess any lasting impact of the projects on participants after they have completed the digital inclusion sessions are also planned. The findings presented in this report should therefore be regarded as tentative. This report will be updated once the outstanding data has been collected and analysed.

1 The Connect Hackney programme is one of 14 'Ageing Better' programmes in England which aim to tackle social isolation and loneliness amongst older people. A national evaluation of the whole Ageing Better areas is being conducted. The local evaluation will complement the national evaluation by providing more in-depth, contextual data and understanding.

Methods

We focused on two of the three digital inclusion projects: *@online* and *Silver Connections,* both of which were funded for an additional year having met their targets for participant numbers and data returns. *@online clubs* were 8-week group sessions which aimed to build older peoples' skills in using a tablet device (commissioned in Nov 2018), and *Silver Connections* groups were 6-week group sessions teaching smartphone skills (commissioned in Feb 2019).

Multiple methods were employed in the study's design: 1) face-to-face/telephone interviews with project managers and group facilitators; 2) longitudinal interviews with participants (follow-up interviews to be completed); 3) observation of DI project sessions, and; 4) anonymised, quantitative, socio-demographic and outcome data collected from participants by providers.

Findings

The key findings from the study are listed below. As noted above, these are initial findings which may change as more data become available:

- ***Learning new digital skills was a key motivator for older people to take part in the digital inclusion projects.*** Interviewees were aware that learning digital skills could make their lives easier in a range of ways, from keeping in touch with family and friends to accessing services online.
- ***Recruitment and promotional efforts, as well as the location in which projects are held, are likely to have an impact on the reach of projects and the diversity of participants attending projects***. Some groups of participants were less well represented in projects – for example, men, older residents from Asian and Chinese communities, older people who are already socially isolated and lonely or at higher risk – and are likely to need targeted outreach to engage them in these projects.
- ***The importance of creating a supportive and friendly learning environment was crucial for engaging older people in learning new digital skills***. Kind and patient facilitators, use of humour, tea and coffee, a warm welcome,

including unstructured as well as structured time for participants to interact and get to know each other, and working with people's interests and levels of need were all key components. These findings resonate with both anecdotal evidence and learning from digital inclusion projects in other Ageing Better areas, as well as previous research from the Connect Hackney programme.

- ***An eight-week course was enough to provide some foundational learning only, whereas a six-week course was akin to an extensive taster course in digital technology***. For some older people with no or limited digital knowledge and skills this foundation was enough for them to be included in conversations about digital life. Participants starting with higher levels of knowledge and skills were able to develop their skills further through the project, and were keen to attend follow-up courses. This finding highlights the importance of recognising the different needs of participants, and of signposting to further opportunities for learning.
- ***From participant and provider accounts, barriers were identified in several areas that need to be overcome for older people's ongoing use of digital devices***:
  i. language and communication skills and understanding of risks in the digital world;
  ii. cognitive and physical skills;
  iii. dealing with error and subsequent frustration, and;
  iv. practical challenges such as cost of devices and data/knowledge of how to buy data, and availability of WiFi at home.
- ***The primary way the projects appeared to improve social connectedness was the experience of attending the group itself.*** Evidence was much more limited in terms of technology helping participants to stay in contact with friends and family, making new friends, or finding new social activities to participate in.
- ***The use of technology outside of the digital inclusion project sessions was influenced by contextual factors such as an individuals' ability to use the device, their personal preferences in engaging with technology, whether they owned a device, or had access to Wi-Fi at home.*** Although the projects did not necessarily assume that participants would own devices or have WiFi at home, it was clear from the participant interviews conducted so far that these were crucial factors in determining whether or not older people are able to continue using and developing their digital skills outside of the project sessions.
- ***The use of technology alone did not appear from the qualitative data to support a reduction in social isolation and loneliness***. All participants had ways of staying in touch with family and friends. The key mode for doing this was by telephone, through face-to-face visits, or through attendance at weekly community groups (for example, church). Technology provided another way of staying in touch with people – a new tool for communication – but it did not replace any of the ways that they usually communicated.
- The quantitative data on social isolation and loneliness outcomes being collected from participants by project providers will form a crucial part of the evidence base on the benefits of group-based digital inclusion projects for older people. ***Collection of this quantitative outcome data is time-consuming for project providers and can eat into project delivery time***. These challenges need to be addressed jointly by the Connect Hackney programme team and project providers.

Conclusion

Overall, this study found that group-based digital inclusion projects can help older people to feel more socially connected, but the evidence so far suggests that this is primarily through learning about technology together with other older people rather than the technology itself. The update of this report will analyse additional data, including qualitative and quantitative follow-up data, to explore further the question of whether (and how) technology can support a reduction in social isolation and loneliness.

1.0 Background

There has been growing interest in reducing the digital divide between older people (50+) and the younger generation who have grown up online and with digital technology in their daily lives. People of all ages are now encouraged to access council, health and other public services online, conduct their own online research into the best consumer offers available, and stay in touch with family, friends and people who share similar interests.[2]

Forty percent of men and 52% of women aged over 75 in the UK have never used the Internet, compared to 6% and 9% of all UK men and women.[3] Although smartphone use amongst older people (aged 75+) is increasing, just under one in five personally use such a device, and most prefer larger devices for connecting to the internet.[4] Internet access at home also remains significantly behind the younger age group.[4]

As part of their programme of work to reduce social isolation and loneliness in older people, Connect Hackney commissioned three one-year digital inclusion (DI) projects for older Hackney residents. *@online clubs* (Nov 2018 – Nov 2019), *Silver Connections* (Feb 2019 – Jan 2020), and *Learning Together* clubs (Nov 2018 – Oct 2019). Each project was run by a different provider organisation. The projects aimed to build participants' confidence and skills in using digital devices (smartphones and tablets), applications ('Apps') and the internet. In Autumn 2019, the *@online* and *Silver Connections* projects were funded for an additional year having met their targets for participant numbers and data returns. Consequently, these two projects were the focus of our evaluation.

@online clubs were 8-week group sessions which aimed to build older people's skills in using tablet devices and *Silver Connections* groups were 6-week group sessions teaching smartphone skills. Both projects were mixed-sex and each session lasted two hours. Both providers had a simple agenda for each session – two aspects of device and/or Internet use to learn, for example, using GoogleEarth or Siri, with a break in the middle, and tailoring within each session to the particular needs or requests of participants. *@online* clubs operated from different locations within Hackney; the provider and facilitator brought with them Apple© tablet devices for participants and a portable Wi-Fi router so that a secure WiFi network could be accessed in each location. *Silver Connections* took place in the providers' premises in the centre of the Borough. *@online* was held in a number of different locations, and was led by a facilitator and assisted by the project manager and two volunteers. *Silver Connections* was co-led by a facilitator and the project manager. *@online* provided taster sessions which were used for recruitment and provided follow-up support to previous participants via an e-newsletter. *Silver Connections* planned a social outing for participants during the course. Key similarities and differences between the projects are summarised in a table in ***Appendix A***.

Appendix B to this document provides further background or: a) the evidence for whether the use of Information Communication Technology (ICT) initiatives with older people reduces social isolation and loneliness from the national and international research literature; b) the local policy context, and; c) key learning points from digital inclusion projects across the Ageing Better programme.

2.0 Research questions

The broader evaluation of the Connect Hackney programme is guided by a set of eight test-and-learn questions. One of these questions is focused on whether the use of technology can help to reduce social isolation and loneliness, and asks whether improving older people's confidence in using IT will enable older people to navigate services, keep in touch with family and friends, meet new people, and find leisure and social activities that are of interest to them. The research on the digital inclusion projects described in this report is designed to feed into addressing this test-and-learn question.

Indicative research questions and lines of inquiry for the research were co-developed with the Connect Hackney programme team (see ***Appendix C***), leading to six overarching research questions:

1. Who has participated in the Digital Inclusion projects, and how did participants find out about the projects?

2 Davidson, S. *Digital Inclusion Evidence Review 2018.* https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/age_uk_digital_inclusion_evidence_review_2018.pdf
3 Office for National Statistics. Internet users, 2019.
4 Ofcom. *Access and inclusion in 2018: consumers' experiences in communications markets*. https://www.ofcom.org.uk/__data/assets/pdf_file/0018/132912/Access-and-Inclusion-report-2018.pdf.

2. Why do participants join the projects? What are their expectations and/or goals?
3. What features of the projects encourage the engagement and retention of participants in digital inclusion projects?
4. Were the projects implemented as intended? What aspects of the projects changed, and why?
5. In what ways did the projects and the digital skills learnt impact on participants in terms of confidence and skills in using digital devices, use of digital devices to support social participation, and, ultimately, social isolation and loneliness? What are the key mechanisms?
6. Are the outcomes of the projects sustained?

3.0 Methods

3.1 Study design and sampling

A study using multiple methods was carried out between September and December 2019 using:

- observation of sessions offered by the digital inclusion projects;
- in-depth interviews with project managers and group facilitators from the two provider organisations running the projects;
- longitudinal interviews with participants, and;
- anonymised participant data. The manager and facilitator from each project were purposively sampled and participants were conveniently sampled from the sessions taking place during the fieldwork period. ***Appendix D*** summarises which data is used to answer each research question. Ethical approval was granted for the overall evaluation by the UEL Ethics Committee (ref ETH1819-0216). Written informed consent was received from all participants before observation sessions and interviews. Findings and quotes in the report are pseudo-anonymised to minimise the risk of identifying participants.

3.2 Data collection

a) Observation of sessions

Two observations were made of each project. Observation 1 was conducted during the second session of each project in September 2019, and Observation 2 was conducted during the penultimate session of each project in October 2019. Observations focused on: the degree to which sessions were structured (taught, types of resources used) and person-centred, how participants used the devices and challenges that arose, space in sessions for building friendships and connections (warmth, unstructured time, food provision), group dynamics and quality of facilitation. At the first *Silver Connections* observation, there were eleven participants, two facilitators, and one volunteer. At the second observation, there were nine participants and two facilitators. At the first *@online* observation, there were three participants, two facilitators, and two volunteers. At the second observation, there were two participants, two facilitators, and two volunteers. The observation schedule can be found in ***Appendix E***.

b) Provider interviews

Interviews were conducted with four staff members across the two provider organisations in October 2019. A group face-to-face interview was conducted with the manager and the facilitator of *Silver Connections*, and a telephone interview was conducted with the manager of *@ online*. Both interviews lasted one hour and 30 minutes. The interviews focused on: successful and unsuccessful promotion efforts, how the projects aimed to use technology to reduce social isolation and loneliness, and implementation successes and challenges (see ***Appendix F*** for the interview schedule). A 20 min face-to-face interview with the facilitator of *@online* was also carried out (covering a reduced set of interview questions which covered the background questions, questions on the theory of change and on implementation – Q8 and 12 in the schedule in ***Appendix F***). All interviews were digitally recorded and transcribed verbatim.

c) Participant interviews

Originally, we planned to conduct two focus groups, one for each project after the final session, with between four to five participants. The first focus group was arranged with *Silver Connections* participants. Unfortunately, there was no availability to book a room in the same setting as the group in the two weeks following the last group session. We also contacted the local gym from which participants were recruited to book a room but received no response. Consequently, a room was booked at Hackney Council for Voluntary Service, a ten-minute bus

ride from the usual group location, for the week after the final session. Participants were informed of the date in person and in writing at the second observation. Six participants expressed interest in attending and gave their phone numbers, and the remaining participants had pre-existing appointments which could not be re-arranged. *Silver Connections* providers reminded participants about the focus group at the last session and sent a reminder to participants in the WhatsApp group. We contacted those six participants who had given their contact details and were able to speak to four, of whom two planned to come. At the event, only one person attended who had seen the WhatsApp message and received the written information (neither of those who planned to come attended), and an interview was conducted instead. Follow-up phone calls were made to participants who had provided their details and three more interviews were conducted between one and two weeks after the project's close in October 2019 (two at participants' homes and one over the telephone).

The second focus group for *@online* was scheduled for directly after the last project session at the beginning of November 2019, in the same location to maximise attendance. As the project had two attendees only (one participant dropped out due to poor health), a group interview was conducted with these two *@online* participants. The low group size was unusual. The provider thought it may be due to its location. This was the first time this particular venue had been used (a local cinema), and may not have been frequented as much as other community locations.

Five of the participants interviewed were female, one was male. All were aged 70 or over. All but one of the interviewees lived alone. One interviewee lived with a family member. Five lived by themselves (of whom two had family in Hackney). Interviewees took part in varying levels of social activities in the community (for example, going to the gym, to church or other social events). All had regular contact with family through phone calls, and four had weekly or fortnightly face-to-face contact with family. Two interviewees owned their own tablet and three owned their own smartphone. Only two interviewees had Wi-Fi at home. The two interviewees with tablets had Wi-Fi at home, but in the six months prior to the group had made little use of their tablets. Interviewees with smartphones had no Wi-Fi at home and used their phones mainly to make phone calls to family members. Interviews covered: participants' digital skills and use of technology, expectations for the course, views and experience of the project, including the social aspect of the group, and project's strengths and areas for improvement (see ***Appendix G*** for interview schedule). All interviews were digitally recorded and transcribed verbatim.

Follow-up interviews will be sought with each of the six participants interviewed.

d) Anonymised participant data

Socio-demographic and outcome data were collected from participants by providers using the Ageing Better 'Common Measurement Framework (CMF)' at entry to the projects and at the end of the projects.[5] Data collected via CMF questionnaires were downloaded from the Connect Hackney dashboard on 7th November 2019.

Socio-demographic data included: gender, age, ethnicity, religion, living arrangements, presence/absence of a long-standing disability, and carer status. Data is collected on a range of outcomes in the CMF. In this report, we report analysis of data collected from participants at baseline and follow-up on the following outcomes:

- *Loneliness*: De Jong Gierveld (DJG) scale measures social and emotional loneliness on a scale of 0 to 6, and the UCLA scale measures loneliness as a whole on a scale of 3 to 9 (for both the DJG and UCLA, higher scores = more lonely). We used the overall mean average score at entry and follow-up for both measures. The average score for older residents in Hackney is 1.9 for the DJG, and 4.2 for the UCLA.[6]
- *Social contact*: with children, friends and family is measured on a scale of 0 to 5 (higher scores = more frequent social contact). There is no data for comparison on social contact with family and friends. Social contact with non-family is measured on a scale of 0 to 8. The overall mean average for social contact with non-family is 7.36.

5 The CMF is a questionnaire which all Ageing Better project participants are asked to complete. It covers participant demographics and measures social isolation and loneliness, social contact and social participation [ECORYS. Ageing Better evaluation Common Measurement Framework (CMF): outcome measures. (2018)]. Optional measures on wellbeing, quality of life, volunteering, co-design and ability to influence are also included for Connect Hackney participants.

6 ECORYS, Brunel University & Bryson Purdon Social Research. *Evaluation of Ageing Better Programme: Wave 1 population survey. Baseline profiling: Hackney.* (n.d.)

- *Health outcomes:* Shortened Warwick-Edinburgh Emotional Wellbeing Scale (SWEMWBS) measures wellbeing functioning on a scale of 7 to 35 (high scores = greater wellbeing). The overall mean average score at entry and follow-up was used. The mean average for 55-64 year olds is 24.8, for 65-74 year olds is 25.8, and for 75 years and over is 25.1.

3.3 Data analysis

Interview data and observation field notes were analysed using a thematic approach. Data was organised into the *a priori* research questions, and under each question, data was further inductively coded for key themes.

Data from the CMF questionnaire was imported into SPSS for analysis. By the end of September 2019, the two projects had engaged 108 participants: 52 for *@online,* and 56 for *Silver Connections*. Of these 108, CMF questionnaires had been completed by 84 participants: 49 participants for *@online* (94%), and 35 participants for *Silver Connections* (63%).[7] Demographic data was available for nearly all 84 participants. However, there was a large amount of missing data for outcome measures. Data completion was related to age. As participants became older, more data was missing (see ***Appendix H***). Consequently, findings on social isolation and loneliness are likely to be less representative of older age groups, particularly those aged 80+.

The qualitative fieldwork was conducted prior to analysing the data collected via the CMF questionnaires. Consequently, it was not possible to explore findings from the quantitative analysis with providers and participants. However, insights gained from the qualitative analysis were used when possible to explain the trends identified.

3.4 Presentation of findings

The findings of the study are presented in line with the overarching research questions in section 2.0 above. Firstly, the findings on how projects were promoted to reach their target groups are described (*Provider strategies for reaching older people*), followed by the findings of an analysis of the socio-demographic and outcome profile of project participants, and the digital skill level of participants (*Who has participated in the projects?*).

Findings on the motivations and goals older people had in relation to signing up to the digital inclusion projects are presented next (*Why do participants join the projects?*), followed by those on engagement and retention of participants and project implementation (*What features encouraged engagement and retention of participants?* (*Were projects implemented as intended?*). In the final findings section our key research question on the impact (and mechanisms of impact) of the digital inclusion projects, and the digital skills learned by participants, including the impact of technology in supporting a reduction in social isolation and loneliness, are presented (*Impact of projects and digital skills learned on participants*).

4.0 Findings

4.1 Provider strategies for reaching older people

The two different providers reported using slightly different strategies to reach older people. *Silver Connections* providers had recruited from their organisations other existing projects with older people, as well as recruiting attendees from the local leisure centre and wider community. They had also completed outreach work at local events and festivals. *@online* providers tried a greater variety of recruitment efforts as they were new service providers in the Hackney area (originally based in a the neighbouring borough of Newham), including:

- Taster sessions
- Local events
- Mailing to lunch clubs and older people's organisations followed up by phone calls
- Contacting community workers
- Word-of-mouth
- Advertising through older person's reference group and in *Hackney Senior*
- Face-to-face meetings with Healthwatch
- Open courses and leaflets in libraries
- Contacting social prescribers

Both providers reported that once participants signed up to show their interest, they contact potential participants by phone and in writing to tell them about the next group. Providers highlighted that further efforts were needed to reach more isolated older people, perhaps

7 We are unable to compare the characteristics of participants who did and did not complete a CMF as data on the characteristics of those not completing a CMF is incomplete.

Table 4.1: How participants found out about Digital Inclusion projects

	N (%)
Project staff/volunteer	23 (32)
Leaflet or poster	11 (15)
Friend or family	5 (7)
Adult social care or social services	4 (6)
Other (unspecified)	30 (40)
Total N	**73**

by more publicising to councils and health organisations. Both projects had found men harder to engage and thought more targeted outreach could be helpful (or example, through barber shops and pubs).

Data from the CMF questionnaire on how participants found out about projects reflected the information from provider interviews (Table 4.1).

Overall, participants reported they had found out about the projects in a variety of ways, although a substantial proportion (40%) found the project through 'other' means not further specified. There were noticeable differences between projects, with a greater number of *@online* participants seeing promotional leaflets or posters (26% *@online* vs 3% *Silver Connections*), and a large number of *Silver Connections* participants hearing about the project through project staff (47% *Silver Connections* vs 18% *@online*) (NB: difference data not shown in table 4.1). Differences found in the CMF data between the two projects seem to reflect differences in the outreach strategies of the two providers outlined above.

To explore whether participants might have been signposted by other Connect Hackney projects, (perhaps contributing to the 'Other' category), we looked for participants' involvement in previous projects (figure 4.1). A total of 24 (28 per cent) of the 84 digital inclusion participants who responded to the CMF questionnaire had joined a Connect Hackney project previously. This was more common for the *@online* project and suggests that other CH projects can serve as a referral route to other CH activities.[8]

4.2 Who took part in the projects?

In this section, key findings from an analysis of the characteristics of older people taking part in the digital inclusion projects are highlighted. A detailed description of the socio-demographic and baseline outcome profile of the participants from which these key findings are drawn is provided in ***Appendix I.***

8 Twenty participants had taken part in one previous Connect Hackney project, and four participants had taken part in two previous Connect Hackney projects. For these participants, baseline socio-demographics and scores on outcome measures related to the CMF they completed on entry into their first Connect Hackney project, rather than the digital inclusion project.

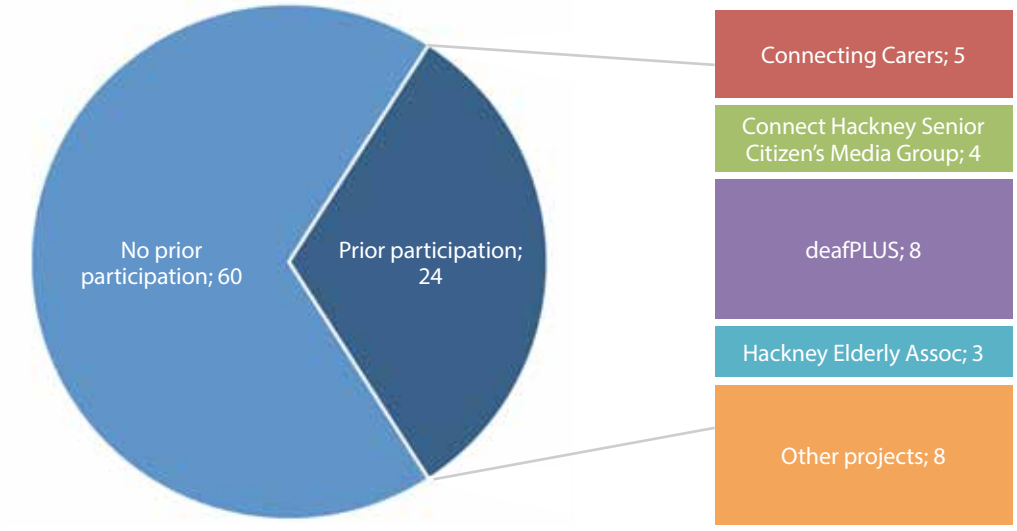
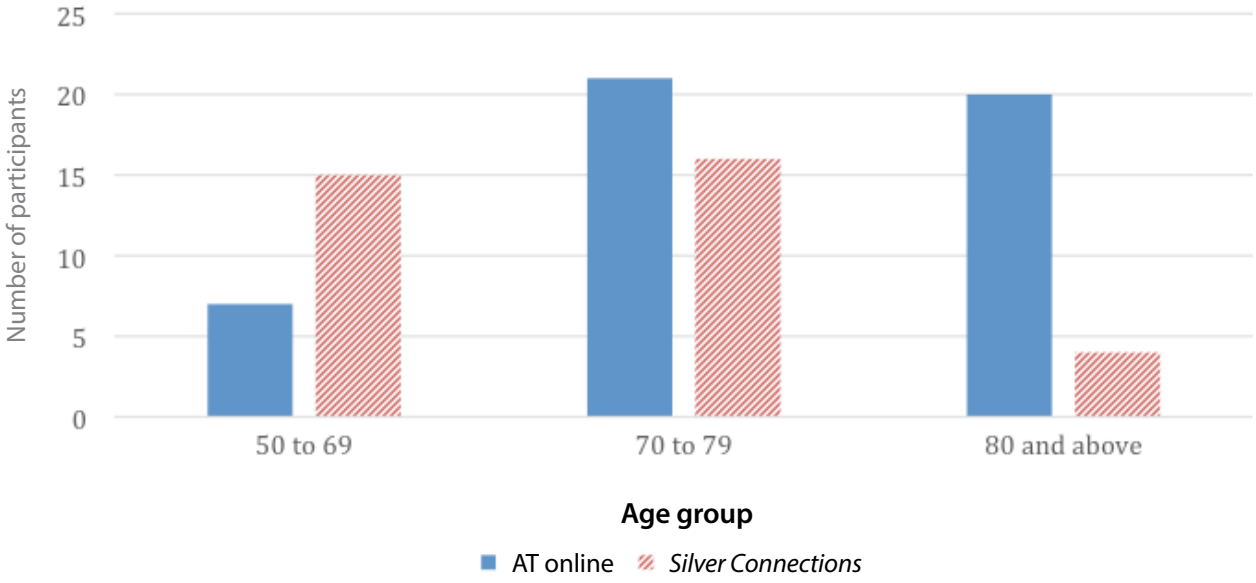


Figure 4.1: Participation in previous projects in the Connect Hackney programme.

Note: The total in the pull-out bar is 28 since four participants had taken part in two previous projects each.

Figure 4.2: Age of digital inclusion participants



a) Socio-demographic profile of participants

The majority of participants were female (90 per cent) and aged 70 or over (74 per cent). The majority were also from a 'Black' (46 per cent) or 'White' (40 per cent) ethnicity and described themselves as 'Christian' in terms of religion (75 per cent). Over half of the participants were living alone (64 per cent) and over a half had a long-standing physical or mental illness or disability (62 per cent). A fifth of participants reported themselves to be a carer (NB: Details are not reported on LGBT+ due to low numbers in some of the categories). The socio-demographic profile of digital inclusion participants is largely similar to the profile of participants across all Connect Hackney projects, although there was a higher proportion of digital inclusion project participants aged 70 and over (see ***Appendix I***). This reflects population age statistics on the gap in digital technology use within this older cohort.

There were no differences between *Silver Connections* and *@online* participants in terms of gender, living arrangements, whether they had a long-standing health problem or disability, or were a carer. However, *@online* had more older participants than *Silver Connections* (Figure 4.2). There were also differences in ethnicity. 65% of *Silver Connections* participants were black, compared to 32% of *@online* participants. 53% of *@online* participants were white, in comparison to 21% of *Silver Connections* participants. Only *@online* had recruited Jewish participants.

There are two possible reasons for the differences in demographics between the two projects, both of which are linked to projects' promotional efforts: a) word-of-mouth recruitment methods whereby participants cascade information about the projects to their family and friends who are likely to be similar to them (e.g. in terms of age or ethnicity) and/or; b) participants recruited primarily from one community space will reflect the socio-demographic make-up of that setting. For example, only the *@online* project had recruited Jewish participants. The provider had made specific efforts to engage the Jewish womens' community and had provided a female facilitator for the group.

b) Social contact and participation, social isolation and loneliness, and well-being at baseline

Across a number of measures at baseline, digital inclusion participants had slightly higher levels of social contact, slightly lower levels of social isolation and loneliness, and slightly higher wellbeing scores as compared to Connect Hackney participants overall. For example, compared to Connect Hackney participants overall, a higher proportion of digital inclusion participants reported regular social contact with non-family members every day or at least once a week (95 per cent compared to 84 per cent – see ***Appendix I*** tables 2 to 4 for figures across all outcomes). Higher proportions of digital inclusion participants, as compared to Connect Hackney participants overall, also reported that they were: a) a member of social club, society or group (94 per cent compared to 73 per cent) and; b) took part in volunteering activities (52 per

cent compared to 47 per cent). These differences are likely to reflect the fact that some projects within the Connect Hackney programme are specifically targeted at older people who have higher levels of social isolation and loneliness (e.g. community connectors). In their interviews, providers also reflected that further efforts were needed to reach more isolated older people, perhaps through greater publicising to councils and health organisations.

Participants levels of social contact and participation, and social isolation and loneliness, were similar across the two digital inclusion projects. There was a trend for lower wellbeing scores at entry for *@online* participants. This may reflect the fact that *@online* had a greater proportion of older participants who are more likely to have a longstanding illness or disability.

Despite the more positive baseline profile of digital inclusion participants compared to Connect Hackney participants overall, older residents in Hackney overall, and older people nationally, digital inclusion participants had higher levels of social isolation and loneliness. For example, on the UCLA measure of social isolation and loneliness,[9] the average score for digital inclusion participants was 4.6, compared to 4.2 for older residents in Hackney overall, and 4.0 for older people nationally. (the average for participants across all Connect Hackney participants is 5.3). This is perhaps not surprising given the overall focus of the Connect Hackney programme on social isolation and loneliness.

An unexpected finding was that, despite the higher levels of social isolation and loneliness described above, compared to older Hackney residents and older people in England, a much greater proportion of digital inclusion project participants reported being a member of a social club, organisation, or group (94 per cent compared to 39 per cent of Hackney residents as a whole and 71 per cent of older people in England), or to have volunteered in the past year[10] (52 per cent compared to 10 per cent and 33 per cent). It is not clear why this might be the case but this could reflect: a) the older age range of the digital inclusion participants who may be less likely to be working and have more time for social participation, and/or; b) the digital inclusion projects reaching older people who are already socially active. These findings are also a reminder that greater social participation does not necessarily lead to lower levels of social isolation and loneliness.

c) Participants' level of digital skills at project entry

Interviews with participants and providers, and observations of the sessions, revealed that most participants had very low levels of digital skills at entry to the projects. All participants in both groups required one-to-one support to follow the tasks, and numerous barriers to using technology were highlighted by participants and providers (see figure 4.2). There were particular teaching and learning challenges in the *Silver Connections* group (as participants were using different Android phones), including: that the class could not be taught as a whole the same set of steps to achieve the same outcome; people having differing amounts of data storage (so that they may not have had enough to download apps), home screens being poorly managed and filled with apps, newly downloaded apps being hard to find, and some apps requiring membership to a separate account. Consequently, unpicking one problem may actually involve solving three more. Fine motor skills were also needed to manipulate smartphones:

> *"Some people tap too fast so it won't recognise it, or double click on something else, or triple click on something else or if they hold it down too much it does something else or it doesn't, you know like, it takes them, it can take people a really long time to understand." (Provider)*

In both groups, terminology needed to be explained and sometimes bore no resemblance to a word's meaning in a non-technological context, making it difficult to recall (i.e. a cookie or filter). Features that are designed to give people options (e.g. finding a website by typing directly into a search bar, using a search engine, or looking at an automated list of past searches) could cause confusion. Additional options offered by online shops (e.g. extra insurance and multiple delivery options) could make straightforward choices seem hard. The requirement for different passwords for different accounts could be hard to manage, and even remembering one password – to enter a borrowed a device – was difficult for

9 The UCLA measure of social isolation and loneliness uses a scale ranging from 3 (least lonely) to 9 (most lonely).

10 Participants were asked "In the last 12 months have you given unpaid help in any of the ways shown on this card…". A range of activities were shown on the card (e.g. raising or handling money/ taking part in sponsored events, leading a group/member of a committees, befriending or mentoring people).

Figure 4.3: Barriers to overcome for the ongoing use of technological devices

Language and communication skills

- A lack of familiarity with the QWERTY keyboard or lower literacy levels can make typing slow and frustrating.
- There is a lot of new terminology which can be difficult to remember.
- When older people receive secondhand technology from their children, they may need support to unlock devices from networks, put new devices in their own accounts, and change passwords.
- It can be difficult to understand and assess the level of risk involved in interacting with online shops or social media. Some vulnerable older people may feel unsafe using their phone in public.

Cognitive and physical skills

- Remembering how to carry out different series of steps to achieve different tasks and recall multiple passwords can be significant challenges for older people.
- Using digital devices require fine motor skills which can be hard for some people. Use of a stylus can help with touchscreen technology.

Dealing with error

- Knowing how to correct or move back from mistakes, or move on when stuck, is essential for continuing to engage with the digital world.
- These inevitable errors cause frustration so providers work to manage expectations and emphasise interest and pleasure in the process of learning, rather than set goals.

Practical challenges

- It can be expensive for participants to buy new devices and sizeable data packages.
- Lack of access to WI-FI at home can demotivate older people from getting online and limit their ability to practice using their devices outside of class.

Preferences of family members

- Elderly family members and friends may prefer to stay in touch by phone.

many participants to recall. Lacking knowledge of the QWERTY keyboard, or poor spelling, were also barriers to digital communication which were raised by participants in interviews:

> *"I still don't know the keyboard, so I find it really hard looking for the letters cos I'm not at all sure which line they're in and by then I've forgotten quite how to spell it" Participant A.*

> *"I'm not good at spelling so I don't bother to mess about with text" – Participant D.*

4.3 Why do participants join the projects? What are their expectations and/or goals?

Analysis of interviews with participants and providers revealed several key reasons why participants joined the projects. First, nearly all participant interviewees mentioned an overall interest in gaining digital knowledge and skills, which could include: learning how to search for information, use an app, take pictures or other smartphone functions. Participant interviewees may have attended a taster session, own a device but not know how to use it, or they may have been passed down a device by their adult child who does not have the patience to show them how to use it. Participant and provider interviews indicated that many participants wanted to be independent and self-sufficient in a digital age. They felt digitally excluded, wanted to learn more about how the devices worked, and to learn more about the terminology.

> *"… the bank's writing you and everybody writing you and you have, they want you to do things online, and the day will come I think when that's all they will accept. I don't know. So this is a*

good thing getting us our age group people to learn the internet and to get online." Participant B

Many participant interviewees thought that technology might make their life easier by giving them new practical skills in contacting friends and family via Skype or WhatsApp, making online purchases, or booking appointments online. One interviewee had very little interest in the technological aspect of the projects and had come to the group purely to socialise:

"My husband in the care home, so I live by myself so going there to meet some people I like it. You know. I have to sit here on my own, it can be lonely, like that so that's why I went." (Participant F)

Attendance at the projects provided an excellent opportunity for older people to both socialise and gain new skills and knowledge, which was of great value to participants. Interviews with participants identified that they wanted to be able to ask questions about digital devices and the Internet to patient and understanding non-family members in a supportive learning environment. Participants with no or very little existing knowledge wanted to build a foundation for learning, and to see what the costs and benefits of digital involvement might be. Interviewees with some existing knowledge, who owned their own devices, wanted to expand on their skills and often had specific tasks or goals to achieve (e.g using a particular App or learning a specific function on their phone). The social side of the group was important, whether that was speaking to the facilitator and volunteers, or getting to know other people in the group. For the loneliest participants, those who lived alone and had limited social activities in the week, the group provided a friendly and fun place for them to come to.

4.4 What features of the projects encouraged the engagement and retention of participants in digital inclusion projects?

Providers of both projects felt the atmosphere of the group was important, being open and honest about the challenges of learning technology, creating a feeling that learning new skills was interesting and fun (and did not always go right), and developing good relationships with the trainer and others in the group in a safe space.

"…providing a nice warm space, I think that's such a crucial part of this whole course, a nice space they can come to, and have nice friendly people, other people welcoming them, have a cup of tea, have a little chat, and have a little look at something, and maybe take something away from it, without it being that kind of pressure of learning." Provider

The *@online* group is led by a facilitator with assistance from the project manager and two volunteers. The *@online* providers had found that small group size (6 – 8 people) gave people the opportunity to interact with volunteers or the trainer, and speak to other participants with similar experiences. The provider and facilitator also conducted midpoint conversations with participants so they could feel they could shape the rest of the sessions to individual needs as far as possible. Feedback from past participants when the project was run in the neighbouring Borough of Newham indicated people did not want to sign up for formal learning. Rather they wanted to learn informally about technology from non-family members. The *@online* provider had also made the decision to focus on tablet devices to make it easier for participants who may have visual or motor impairment to see and enlarge the screens and manipulate the touch screen with their fingers or a stylus.

The *Silver Connections* group is led by a facilitator with assistance from the project manager, and sometimes with assistance from a volunteer. *Silver Connections* providers had bigger class sizes (10 – 12 people), though providers noted that a group size of 8 would be optimal to create an atmosphere and attend to people's individual needs. Participant interviews and observations indicated that it was difficult for participants to receive the level of one-to-one support they needed. However, while facilitators went around to assist people individually, this unstructured time often provided an opportunity for participants to talk to each other and share their difficulties. Both providers called participants who were not able to attend to follow-up with them. *Silver Connections* providers also noted the importance of the outing in week five in cementing friendships in the group outside of the classroom. It provided participants with unstructured time to engage with each other, enjoy the day, where the focus could be on chatting and integrating a little bit of technology use into the day, confirmed by the observation of a trip to the Hackney Museum.

"We've had some really emotional moments on trips where they all sang, 'We are family…' at the last one." Provider

"I do think a lot of them get pleasantly surprised by the trip because we have those four weeks beforehand where we're in the classroom learning and they get used to that and suddenly we're on this trip and we're just having fun." Provider

Participants in their interview highlighted the warmth, patience, and responsiveness of facilitators:

"… everybody was very kind very nice people and because of their ways they encouraged you to learn and I think because of that I managed to learn quite a lot" Participant B.

"… they are very good they are very very good… they make you feel comfortable…

"… no push you or anything like that no, yeah" Participant F

Participants also appreciated facilitators recapping what they had learnt. Several participants from the *Silver Connections* group mentioned the friendly nature of the group and pleasure of the opportunity to socialise. A key feature of the projects for participants was the enjoyment of learning something new in this nice environment:

"I was learning as I go along plus, it's good to go and mix with beautiful people and have a chat and the group was quite interested in doing so, as far as I'm concerned." Participant D.

A provider and several participants highlighted the importance of the location of the projects, how well it was served by public transport (i.e. a minute or two from a bus stop, or the availability of parking if dial-a-ride is used). One participant suggested projects could provide additional support around transportation if it was an issue for a potential attendee:

"I think, encouragement erm, to support the transportation, some people they can't come by public transport and they want to learn this, if this, any chances of picking them up at home, and return them when they finish and then….give them opportunity facility to come." Participant C.

4.5 Were the projects implemented as intended? What changes were made?

Both projects had gone through an initial period of adjustment to get the format and content optimised, though different size groups, technological skills (or lack of), and dynamics meant some adjustments were needed each time:

"… every group seems to be different and we always have a view about what people want to cover, what they should cover and how far they are learning and enjoying the sessions. So there's always been debriefs with the trainer, in terms of adapting the programme." Provider

Silver Connections providers had tried both a step-by-step approach with the whole group versus giving an overall explanation and then assigning a task. Overall, the latter had worked more successfully (due to differences between people's phones). However, it could still be difficult if many participants need one-to-one support, so a flexible approach to the class plan was needed:

"… you kind of have to be adaptive between the two different styles and see who, and identify from the beginning who needs more support, who doesn't, so you have a plan of action" Provider

Silver Connections also simplified the format to two tasks with a break in between. Providers also noted that adult participants liked to chat in the class, and rather than telling them to stop (which they might with school children), they tried to accommodate it while keeping the class moving forward. Both providers asked the group at the start of the project what they particularly wanted to cover, and also managed expectations about what was likely to be achievable. *@online* asked people midway through the project how people felt they were doing, and discussed the options for what could be covered in the remaining half of the course. Providers explained that they had to adapt the paperwork trail to account for the length of time the Ageing Better outcome measures took to complete (essentially one session at the beginning and end of each project needed to be dedicated to CMF completion).

For the most part, the two groups for the evaluation were implemented as intended. The *@online* group was smaller than usual, perhaps because of its new location. The *Silver Connections* group was implemented as intended, though one participant commented on the low performance of the smartphone that participants could borrow for the group (confirmed by researcher observation). The phones often switched off, requiring the password to be re-entered, and appeared to have low storage space for apps.

4.6 Impact of the projects, and the digital skills learnt, on participants

This section of the report describes the findings from the qualitative research on the perceived impact of the digital inclusion projects. Of interest to the study was any impact on confidence and skills in using digital devices (e.g. using a wider range of device functions), use of digital devices to support social participation (e.g. keeping in touch with family and friends, meeting new people, navigating services or finding out about leisure), as well as any direct impact on social isolation and loneliness. It is too early to report on the quantitative findings on the impact of the digital inclusion projects on social isolation and loneliness outcomes as the numbers of participants completing follow-up CMF questionnaires is still small. A description of the data is provided in ***Appendix J***. The analysis of qualitative findings in this section are further described under two main headings: a) the perceived impact of participating in the digital inclusion projects, and; b) the importance of context (i.e. factors influencing the use of technology outside of the digital inclusion project sessions.)

a) Perceived impact of participating in digital inclusion project sessions

Analysis of interview data and observations of project sessions revealed several ways in which provider and participant interviewees perceived the impact of project participation:

1. The project sessions – the groups gave participants the opportunities to socialise with the facilitators and their peers.
2. Meeting up outside of the projects, which offered the opportunity to make new friends with other project participants.
3. Using technology to become more confident and self-sufficient.
4. Using technology for enjoyment and entertainment.
5. Using technology to connect with friends and family.

The project sessions: The primary way the projects appeared to improve social connectedness was the experience of attending the group itself. The project provided the opportunity for participants to learn new skills that were of interest to them in a supportive, friendly, and informal learning environment. This was of great value to all the participants that were interviewed. Providers noted that for some participants it took a lot of bravery to come and learn something completely new that they found very difficult in front of a group of people. For the loneliest participants, the opportunity to get out of the house and socialise was very important. However, learning technology provided an important hook for motivating participants to come.

Meeting up with participants outside of the projects: *Silver Connections* providers highlighted that many past participants had stayed in touch with each other through WhatsApp groups that were set up during the project to arrange the trip in Week 5. One of the participants interviewed had continued to use the WhatsApp group. A couple of participants had not formed strong friendships with their peers on the group, but stopped to speak to one another when they bumped into each other in their local area:

> *"Yes, er, we met at gym after the, because we only do once a week there… and then er, I just say, 'How are you doing? How are you keeping?' " Participant C.*

Two of the participants interviewed had made friends with other participants and had swapped numbers and met up since the group finished. One of them reflected that friendships cannot be forced but in a friendly group there is the opportunity to find chemistry with someone else:

> *"… if people are friendly you make friends. If they are not friendly and they keep themselves you keep to yourself. You don't have to force people to be friendly to go get, to be friendly to, you don't have to force yourself or somebody, or you force yourself on me. It's the spirit now, when the spirit come together you become friends." Participant E.*

Using technology to become more confident and self-sufficient: Some participants had come to the group with a goal or problem to solve with their device, which they had achieved and they felt good about. For example, *Silver Connections* providers noted individual participants who had wanted to learn to download Uber, transfer money to a foreign bank account, and WhatsApp a family member living abroad. Several participants had enjoyed using the navigation and bus stop apps, and taking photos on their devices, enhancing their everyday quality of life.

> *"When I'm in the bus I will just look at my phone and know the location and where I'm going*

and where I'm going to and the time the bus is coming and if I'm going to stay longer I will know. So that is very, very important for me." Participant E

Using technology for enjoyment and entertainment: Providers highlighted that some past participants had enjoyed listening to audio books or free music on Youtube, or looking at information about their interests online. One participant received messages from their church about services and events.

Using technology to connect with friends and family: According to provider and participant interviews, some participants had enjoyed using their phone or tablet to speak with friends and family by text, WhatsApp, and Skype. Simply understanding new terminology had helped one participant to connect with their grandchild's conversation.

b) The importance of context: factors influencing the use of technology outside of the digital inclusion project sessions

The use of technology outside of the digital inclusion project sessions was influenced by individuals' ability to use the device, their personal preferences in engaging with technology, whether they owned a device, or had Wi-Fi outside of the group (see also figure 4.3 in section 4.2 above). For participants with very limited digital knowledge and skills before the class, the projects provided a foundation for learning (pre-beginner level) and the chance to be included in conversations about digital life. That was enough for them. From observing the groups, it was clear that participants with higher levels of digital skills could get more concrete skills from the projects, as they had the ability to apply their learning independently during the class and seemed familiar with their devices during the second observation.

Some participants were happy to stay in touch with their family and friends by telephone calls and did not want to communicate with them in a different way. Two participants had family members who lived abroad and considered phone calls the most reliable, efficient and cheapest option to keep in touch (particularly since they did not have Wi-Fi at home).

Owning a device or having access to a device is one of the essential factors for use outside sessions but it is not sufficient. It is having access to a device, the desire to use it, and basic knowledge in how it works. For example, of the two interviewees who both owned a tablet and had Wi-Fi at home, only one was practicing using a tablet outside of the project sessions. The other was not using it outside of the sessions for a range of reasons. This interviewee had previously used a tablet regularly at home for a specific purpose (keeping in contact with family who lived abroad), but once this was no longer needed (family returned to the UK) she no longer used the tablet. One interviewee who did not own a smartphone, but used their partner's smartphone, was able to use more of the functions (e.g. WhatsApp) than other interviewees who did own their own phone but had very low skills and little desire to use them for functions beyond phone calls.

None of the four *Silver Connections* interviewees had Wi-Fi at home. Two of these participants relied on data packages for accessing the Internet. The others either had no knowledge of WiFi or were waiting for their home WiFi to be set up. None of the interviewees mentioned seeking out public Wi-Fi networks to use their devices. They used their devices until they used up their data, which happened quickly if they accessed high-data content online such as YouTube. They did not consider seeking out more information about their data needs and adjusting their network packages.

There was no clear pattern between participants' levels of community engagement and social connections and their device use, as device use seemed strongly influenced by participants' level of skill. Three of the participants had little desire to use their devices beyond making phone calls or learning more about their device. They varied in their social connections and community engagement. However, they all had low levels of skills in using their devices. Three of the participants had used more of the functions on their devices, and all had frequent community engagement. However, they all had higher levels of skill in using their devices. It may be that memory and physical abilities influence both participants' ability to take part in community, and social events and their ability to learn new skills on their device.

5.0 Discussion

This report focused on one of eight test-and-learn areas from the Connect Hackney programme: "Can the use of technology help to reduce social isolation and loneliness?". To contribute to answering this question, a small-scale, in-depth study of two digital inclusion projects for older residents in Hackney is being undertaken as part of a broader local evaluation of the Connect Hackney programme. The digital inclusion projects aimed to build older peoples' confidence and skills in using digital devices (smartphones and tablets) to support social participation and help reduce social isolation and loneliness. Each of the projects offered short courses in community venues over a number of weeks. The research undertaken with these projects aimed to address six key areas of inquiry: project reach, engagement of participants, retention of participants, project implementation, impact of the project and any digital skills developed, and the extent to which impact is sustained outside and beyond the end of project sessions.

This report presents the findings from the data collected from the digital inclusion projects so far. As of December 2019, all the planned observation sessions (four project sessions were observed involving 14 participants, four facilitators, and three volunteers) and the planned interviews with project providers (four providers were interviewed) have been undertaken, and six out of a planned 12 participants have been interviewed. Available quantitative data from 84 participants completing a CMF questionnaire has been analysed to determine the socio-demographic and baseline outcome profile of digital inclusion participants. Follow-up interviews to qualitatively assess any lasting impact of the projects on participants after they have completed the digital inclusion sessions are planned. The findings presented in this report should therefore be regarded as tentative until qualitative data has been collected from the remaining six of the planned 12 participants. The follow-up qualitative interviews have been completed, and more CMF questionnaire data is available to quantitatively assess the impact of the projects on social isolation and loneliness.

In this final section of the report, key findings are discussed in relation to previous research and the implications and key messages for the Connect Hackney programme team and those delivering digital inclusion projects to reduce social isolation and loneliness amongst older residents in Hackney. The discussion is organised according to the areas of inquiry addressed by this study (project reach, participant engagement and retention and project implementation and adaption, impact on participants) with a final section discussing the findings in relation to the overall test-and-learn question.

a) Project reach

Like other Connect Hackney projects, the digital inclusion projects are attracting a greater proportion of: female rather than male participants, older participants aged over 70, and participants from both White and Black ethnic minority groups as opposed to Asian or other ethnic groups. Strategies used to reach older people and the location in which they are held appear to be having an impact on the diversity of participants recruited into the digital inclusion projects. Strategies used by providers to reach older participants were varied, but providers recognised the need to innovate in terms of, for example, developing specific outreach strategies for groups with lower participation rates such as men. These findings are in line with, and add depth to, those from a linked study focused on the reach, engagement and retention of participants across a number of different projects within the Connect Hackney programme.[11]

On average, digital inclusion participants were more socially isolated and lonely than older residents in Hackney overall, although they had higher levels of social contact, volunteering and participation in social clubs, organisations and groups. However, digital inclusion participants had lower levels of social isolation and loneliness compared to participants across Connect Hackney projects. Consequently, some participants may be well-connected residents who are keen to learn digital skills and may have little room to improve their levels of social isolation and loneliness. Although more sociable members of the group can add value to projects by giving the class sessions atmosphere (based on researcher observations), providers need to be mindful of ensuring that their recruitment and project promotion strategies target older

11 Harden A, Sharpe D, Salisbury C, Lombardo C (2020) *Reach, engagement and retention of participants in phase two Connect Hackney projects: findings from project providers and participants (interim report)*. London: Institute for Health and Human Development, University of East London.

residents in need of both digital knowledge/skill development *and* social contact.

In summary, the key message from these findings is that providers' recruitment and promotional efforts, as well as the location in which projects are held, are likely to have an impact on the range of participants they attract to projects. Some groups of participants – for example, men, older residents from Asian and Chinese communities, older people who are already socially isolated and lonely or at higher risk – may need targeted outreach to engage them in these projects.

b) Engagement and retention of participants, and project implementation and adaption

The opportunity to gain digital knowledge and skills was a key driver to join the digital inclusion projects for the older people interviewed in this study, although one interviewee did highlight that the opportunity for social contact by attending the group was a more important driver for them. Interviewees reported wanting to learn from non-family members in an informal environment. Motivations and goals varied according to pre-existing levels of knowledge and skills. Participants with no or very little existing knowledge and skills wanted to build a foundation for learning, whilst participants with some existing knowledge and skills wanted to expand on their skills and often had specific tasks or goals to achieve (e.g. using a particular App or learning a specific function on their phone). These findings are important in light of previous research on ICT use among older people, which has found that motivation and entry level skills and knowledge can influence the effectiveness of ICT interventions for reducing loneliness[12].

The social aspects of the group, whether that was speaking to the facilitator and volunteers, or getting to know other people in the group, were important for engagement of older people throughout the course. The importance of creating a supportive and friendly learning environment was emphasised by both providers and participant interviewees and cannot be overestimated. Kind and patient facilitators, use of humour, tea and coffee, a warm welcome, including unstructured as well as structured time for participants to interact and get to know each other, and working with people's interests and levels of need were all key components. These findings resonate with both anecdotal evidence and learning from digital inclusion projects in other Ageing Better areas[13] which highlighted the importance of informal and friendly provision and tailoring learning content and support to participants' needs and interest, as well as previous research from the Connect Hackney programme,[14] which found that the creation of a supportive atmosphere allowed people to make mistakes, and that tailoring the sessions to participants' needs and unstructured time for socialising helped participants to better engage.

In line with previous research[15,16], this study found that cognitive and physical abilities and skills (e.g. memory problems, fine motor skills) were barriers to using digital devices amongst older people. By attending to individual needs and aspirations within the group setting, keeping things very simple, and introducing the use of a stylus to help with motor skills, a were able to overcome some of these issues. As others have recommended [17], much more needs to be done in terms of ensuring that digital platforms are suitable for older people. Creators of digital platforms (for example, online portals to general practices and local government services) should involve older people in their design to ensure they are fit for purpose for this group. Particular attention should be given to accessibility features (e.g. using larger font sizes or giving the option to increase font size, designing layouts where the options for users are intuitive and clearly signposted; signposting of how to return to previous pages or correct mistakes; and a telephone number to call for further assistance.

Another set of barriers to using digital devices identified in this study and previous research[17] are related to the cost of devices and data packages and the availability of WiFi at home. Although providers did not necessarily assume that participants would own devices or have WiFi at home, it was clear from participant interviews conducted so far that these were crucial factors in

12 Choi, M., Kong, S. & Jung, D. Computer and Internet Interventions for Loneliness and Depression in Older Adults: A Meta-Analysis. *Healthc. Inform. Res.* **18**, 191 (2012).

13 Big Lottery Fund. Connecting through digital technology. in (Big Lottery Fund; Hall Aiken, 2018).

14 Connect Hackney. *Connect Hackney digital learning report.* (2018).

15 Gell, N. M., Rosenberg, D. E., Demiris, G., LaCroix, A. Z. & Patel, K. V. Patterns of Technology Use Among Older Adults With and Without Disabilities. The Gerontologist 55, 412–421 (2015).

16 Sayago, S. & Blat, J. About the relevance of accessibility barriers in the everyday interactions of older people with the web. in (2009)

17 Community Safety and Social Inclusion Scrutiny Commission. *The digital divide.* https://drive.google.com/file/d/1_PD1WLcjqVuwpacLx7nE1w3cchBEZ_9R/view (2011).

determining whether or not older people are able to continue using and developing their digital skills outside of the project sessions.

Findings from this study which have received less attention in the previous literature around the development of digital skills amongst older people are those around optimum group size, length of sessions, and opportunity for follow-up. These findings are, however, in line with the more general literature on adult learning and group interventions.

Both provider and participant interviewees suggested that a group of around eight participants was optimum to create a supportive and friendly learning environment, and a group which could be successfully led by two facilitators and a volunteer. Larger group sizes would benefit from an additional helper. Provider and participant interviewees also emphasise the importance of providing follow-up events or opportunities to continue developing skills.

Participants and providers thought that an 8 - 10 week course was good for foundation learning, and that six weeks was a little short. Even with online access outside of the groups, participants' low levels of existing knowledge of digital technology, accompanied by memory problems, visual impairment and difficulties with fine motor skills, meant that they needed additional supported learning opportunities to practice using tablets and smartphones.

An eight-week course was enough to provide some foundational learning only. A six-week course was akin to an extensive taster course in digital technology. Both sets of interviewees suggested it would be helpful to have a monthly drop-in or follow-up course that alumni participants could attend to refresh their skills and facilitate continued socialising.

c) Impact of digital inclusion projects and digital skills learnt on participants, and the extent to which any impact is sustained

There is as yet no clear evidence from previous research on the effectiveness of interventions to improve older people's digital knowledge and skills for reducing levels of social isolation and loneliness. A comprehensive overview of 12 systematic reviews found mixed evidence of impact with lower quality studies tending to find positive effects with higher quality studies finding no impact [18]. The interventions evaluated by the studies and included in the reviews varied in their aims, type of technology, length and number of sessions, and setting (nursing homes, community), and there were no obvious patterns in the types of interventions that may be more effective. In the light of this limited evidence from robust quantitative research, qualitative studies like the study described in this report are important to illuminate features of initiatives that may be important to their effectiveness.

Overall, this study found that the use of technology alone is not likely to reduce social isolation and loneliness. Technology enhanced, but did not replace, existing means of communicating for participants who had the desire to use their device and had retained from the groups a basic level of knowledge and skill in using their device.

The findings of this study on the perceived impact on participants of the digital inclusion projects and the digital skills learnt as well as the contextual factors influencing whether or not digital skills were put to use outside of the project sessions provide some, albeit currently limited, evidence on the key mechanisms and circumstances in which technology can reduce social isolation and loneliness amongst older people:

- The opportunity to learn about technology was a common motivating factor amongst the older people interviewed in this study to sign up to the group-based digital inclusion projects. The group learning environment itself, through the active creation of a safe, friendly and attentive atmosphere, was able to facilitate social connections between participants, and between participants and facilitators. Indeed, these social connections were key to engaging older people with the learning on offer in the sessions.
- Social connections within the lifetime of the projects could be strengthened even further with time built in for participants to connect outside of the 'classroom' (e.g. a group trip to a local museum organised partly through technology created a memorable social experience).

18 Chips J, Jarvis M, Ramiall S (2017) The effectiveness of e-Interventions on reducing social isolation in older persons: A systematic review of systematic reviews. J Telemed Telecare. 2017 Dec;23(10):817-827. doi: 10.1177/1357633X17733773. Epub 2017 Sep 29.

- Social connections between participants could be maintained beyond the projects through the use of social network technology. One of the provider interviewees reported that past participants continued to communicate in WhatsApp groups set up during the project. This is likely to only apply when older people have access to devices, and data packages and/or WiFi at home, and have developed the necessary skills to use such technology.
- The development of friendships that continued beyond the life of the project were reported by two participant interviewees. However, technology did not appear to play a role in these developing friendships, which was likely due to low levels of digital skills.
- Participant and provider interviews indicated that the projects had also enabled participants to use and enjoy technology in terms of keeping in touch with family and friends through text, WhatsApp, and Skype, accessing free music and information linked to their interests, and using online resources that could be useful in their everyday lives (e.g. checking bus times).
- The use of technology outside of the digital inclusion project sessions was influenced by an individual's ability to use the device, their personal preferences in engaging with technology, whether they owned a device, or had Wi-Fi outside of the group. For participants with very limited digital knowledge and skills before the class, the projects provided a foundation for learning (pre- beginner level) and the chance to be included in conversations about digital life. Participants with higher levels of digital skills could get more concrete skills from the projects (e.g. learning how to use a particular 'App'), and were able to develop these further outside of project sessions.

d) Conclusion and next steps

Overall, this study found that group-based digital inclusion projects can help older people to feel more socially connected, but the evidence so far suggests that this is primarily through learning about technology together with other older people, rather than the technology itself. The update of this report will analyse additional data, including qualitative and quantitative follow-up data, to explore further the question of whether and how technology can support a reduction in social isolation and loneliness.

Appendix A: Comparison of the digital inclusion projects

	Silver Connections (Groundwork)	@online club (Newham NDP)
Start date of project	20.02.19 (Q4)	19.11.18 (Q3)
No. of groups completed as of August 2019	1. Mar - Apr 2. May - Jun 3. Jul - Aug 4. Sep - Oct	1. Dalston Library – Jan - Mar 19. 2. Salvation Army Hackney Central – Mar - May 19. 3. Stamford Hill – Jul - Sep 4. Hackney Picture House – Sep - Nov.
No. of weeks per group	6	8
No. of participants per group (intended)	15	8 - 10
Estimated % female: male	95:5	60:40
Target group	People who own mobiles but make little use of them.	Over 60s who want to practice going online.
Estimated skill level: % low: low-med	85:15	n/k
Technology focus	Smartphone	Tablet devices
Other differences	Planned outing	Taster sessions used for recruitment. Follow-on support via e-newsletter.
Estimated no. of volunteers as of July 2019	3	3
Estimated no. of new participants as of Sep 2019	56	52

Appendix B: Literature review

Learning from existing research literature

Evidence of effectiveness

It is useful to review the existing evidence of whether digital inclusion projects can reduce isolation and loneliness so that the findings from our pilots can be set in the context of similar projects. Chips et al (2017)[19] conducted a review of systematic reviews to look at the level of evidence on the effectiveness of e-Interventions to reduce social isolation and/or loneliness (SIOL) in older people living in community or residential care. E-interventions were defined as interventions that were delivered via Internet-supported, ICT or other electronic technologies, with or without human support. They found 12 systematic reviews, of moderate quality:

- Four reviews focused on e-Interventions targeting social isolation/loneliness in older people[20,21,22,23]
- Two reviews on e-interventions for older people (i.e. not limited to social isolation/loneliness)[24,25]
- Six reviews on interventions for social isolation/loneliness in older people (i.e. not limited to ICTs)[26,27,28,29,30,31]

The 12 reviews included 22 unique e-Interventions evaluated by studies of sufficient quality to be included:[32]

- *Impact on social isolation:* two reviews conducted a meta-analysis on online activities and computer/internet training in older people, and the results were inconclusive: one review[22] reported a significant decrease in loneliness; one review reported a non-significant decrease in loneliness[20].
- *Internet/computer training:* there was inconclusive evidence to support training and use of internet/computer e-interventions to reduce loneliness: three high quality studies reported no significant decrease in loneliness, four smaller studies, more prone to bias, reported some evidence of decreased loneliness.

Projects varied in aim, type of technology, length and number of sessions, and setting (nursing homes, community), and there were no obvious patterns in the types of projects that may be more effective. Qualitative studies may illuminate features of initiatives that may be important to their effectiveness;. In section 1.4, anecdotal evidence on the key attributes of DI projects from Ageing Better projects so far are summarised.

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20 Bornemann, R. The impact of information and communication technology (ICT) usage on social isolation including loneliness in older adults. A systematic review. (Magdeburg-Stendal University of Applied Sciences, 2014).

21 Chen, Y.-R. R. & Schulz, P. J. The Effect of Information Communication Technology Interventions on Reducing Social Isolation in the Elderly: *A Systematic Review. J.* Med. Internet Res. **18**, e18 (2016).

22 Choi, M., Kong, S. & Jung, D. Computer and Internet Interventions for Loneliness and Depression in Older Adults: A Meta-Analysis. *Healthc. Inform. Res.* **18**, 191 (2012).

23 Khosravi, P., Rezvani, A. & Wiewiora, A. The impact of technology on older adults' social isolation. *Comput. Hum. Behav.* **63**, 594–603 (2016).

24 Khosravi, P. & Ghapanchi, A. H. Investigating the effectiveness of technologies applied to assist seniors: A systematic literature review. *Int. J. Med. Inf.* **85**, 17–26 (2016).

25 Morris, M. E. et al. Smart technologies to enhance social connectedness in older people who live at home: Smart technology and social connectedness. *Australas. J. Ageing* **33**, 142–152 (2014).

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

27 Cohen-Mansfield, J. & Perach, R. Interventions for Alleviating Loneliness among Older Persons: A Critical Review. *Am. J. Health Promot.* **29**, e109–e125 (2015).

28 Dickens, A. P., Richards, S. H., Greaves, C. J. & Campbell, J. L. Interventions targeting social isolation in older people: a systematic review. *BMC Public Health* **11**, (2011).

29 Franck, L., Molyneux, N. & Parkinson, L. Systematic review of interventions addressing social isolation and depression in aged care clients. *Qual. Life Res.* **25**, 1395–1407 (2016).

30 Gardiner, C., Geldenhuys, G. & Gott, M. Interventions to reduce social isolation and loneliness among older people: an integrative review. *Health Soc. Care Community* **26**, 147–157 (2018).

31 Masi, C. M., Chen, H.-Y., Hawkley, L. C. & Cacioppo, J. T. A Meta-Analysis of Interventions to Reduce Loneliness. *Personal. Soc. Psychol. Rev.* **15**, 219–266 (2011).

32 Studies had to have a comparison group where the link between the intervention and SIOL could be assessed

Evidence of facilitators and barriers to ICT use among older people

As mentioned in section 1.1, having the right tools to get online – access to online devices and broadband – can affect usage. Motivation is also important: older people can choose whether or not to be digitally engaged. People's entry-level of ICT skills and knowledge, as well as socio-demographic factors, have been found to influence the effectiveness of DI projects with older people. For example, computer-mediating social support was increased when older adults spent more time using the Internet, had more knowledge of the Internet, were of a lower age group and were women.[xxii] Difficulty in obtaining technical support is also a known barrier. Technology use decreased significantly with greater limitations in physical capacity and greater disability.[33] Vision impairment and memory limitations were also associated with lower likelihood of technology use.[33] Older people can have difficulties in remembering task-related steps, understanding technical words, and using the mouse, despite their willingness. Simpler screens and reduced functionalities were key aspects in the design of email systems for older people[34].

The local policy context

The legacy of the digital inclusion projects may be important to continue to meet the access, knowledge and skills gaps of Hackney's older residents. Although Hackney Council is currently consulting on their digital connectivity strategy, unlike other councils it does not have a digital inclusion strategy. In February 2019, the Mayor Phillip Glanville posted a vision document on his blog[35]. The document emphasised the crucial role of digital connectivity to the economic wellbeing of the borough and focuses on affordability for all residents, but it did not single out older residents as a group with particular needs[36]. There are no plans at Council level to create a digital inclusion strategy around the needs of ageing residents, leaving a gap in provision that the voluntary and private sector could meet. In 2011, a report on 'The Digital Divide' by the Community Safety and Social Inclusion Scrutiny Commission[37] highlighted a number of barriers to digital inclusion for older Hackney Residents. These included: problems with accessing services, for example, the prohibitive cost of mobile devices and broadband (and the requirement for a good credit rating), and residents' lack of skills and confidence. It also highlighted specific social, cultural and educational barriers unique to Hackney, for example, the use of the internet by orthodox religious groups like the Charedi community, and use among black and minority ethnic groups where English is a second language. The Council's executive response to the scrutiny commission's recommendations[38] was that original primary research to map out digital exclusion would be too costly, equality impact assessments would be carried out as needed in relation to migrating services online, and ICT training would continue to be available from community halls.

Evidence from Ageing Better so far

Anecdotal evidence from Ageing Better projects to date can highlight key features of projects that may be crucial to their success in reducing SIOL. In November 2018, the Ageing Better Conference[39] asked members to discuss how – and if – becoming digitally connected helped to reduce social isolation and loneliness, and about their views on the effectiveness of their DI projects:

- *The Healthwatch Project* in Torbay helped older people to book GP and hospital appointments online and order repeat prescriptions. Older people were then inspired to use IT in other areas of their lives. People preferred to have an informal drop-in, over formal training sessions, so they could ask for support relevant to their immediate needs. Some GP surgeries now hold sessions in their waiting rooms to help patients get online.

33 Gell, N. M., Rosenberg, D. E., Demiris, G., LaCroix, A. Z. & Patel, K. V. Patterns of Technology Use Among Older Adults With and Without Disabilities. *The Gerontologist* **55**, 412–421 (2015).
34 Sayago, S. & Blat, J. About the relevance of accessibility barriers in the everyday interactions of older people with the web. in (2009).
35 Glanville, P. *A vision for digital connectivity in Hackney* https://blogs.hackney.gov.uk/hackit/a-vision-for-connectivity-in-hackney (2019).
36 Hackney Council. Improving digital connectivity in Hackney, for everyone. Our vision. (n.d.).
37 Community Safety and Social Inclusion Scrutiny Commission. The digital divide. https://drive.google.com/file/d/1_PD1WLcjqVuwpacLx7nE1w3cchBEZ_9R/view (2011).
38 The Deputy Mayor of Hackney. Executive response to Community Safety and Social Inclusion Commission Scrutiny Review into the *Digital Divide.* (2011).
39 Big Lottery Fund. Connecting through digital technology. in (Big Lottery Fund; Hall Aiken, 2018).

- *Age UK Isle of Wight* found it was important to tailor learning to participants' needs and motivations rather than prescribing fixed learning activities and help to grow people's confidence.
- *Lai Yin Association* in Sheffield ran taster sessions to help older Chinese people connect to friends and family using their smart phones, then delivered training to six groups using peer coaches and student volunteers. Sustainability came from participants using the skills and knowledge developed to form their own online and offline support groups and activities. They also found tailoring support to participants individual needs, skills and motivations was essential. People also responded positively to interactive engagement.
- *Good Things Foundation* in Sheffield. They found good provision to be informal and friendly, where the project can find a personal hook for an individual and find something online which is of clear personal value to them. They also found it was good to leave the door open for more engagement at the end of the course so people can come back if they want to refresh their skills. Projects that give too much information can put people off and solidify the impression that going online is not for them. Some people are happy to not be online. They understand the benefits and they are making an informed choice not to participate. DI support needs to be embedded into wider support services so that people can be encouraged to take up training opportunities.

Connect Hackney produced a digital learning report from Phase 1[40]. Many of the key findings mirrored those of other Ageing Better DI projects:

- Participants had very different levels of ICT skills and knowledge. Focusing on the personal benefits of ICT and tailoring approaches to participants' needs and motives helped people to engage with the projects.
- Smartphones were the most common devices to which people had access; some participants had tablets or computers at home but required support to use them.
- Health conditions were often a barrier to participating, and for participants who engaged who had physical or cognitive impairments, a trial-and-error approach was needed to get the right sort of assistive technology in place. Navigating the keyboard, and double-clicking, could be challenging.
- Creating a supportive atmosphere which allowed for people to make mistakes, and having some unstructured time for socialising, encouraged participants to engage.
- Use of the non-roman alphabet needed specialist equipment and translation technology.
- Participants enjoyed using WhatsApp, Skype, taking photos, playing music through Youtube or Spotify, and carrying out their own reading/research.
- Participants that were interviewed were largely uninterested in accessing services online.
- Social bonds developed between the participants in the projects which lasted beyond their engagement. Some participants went on to become volunteers, sharing their new-found skills with others.

40 Connect Hackney. *Connect Hackney digital learning report.* (2018).

Appendix C: Indicative operational research questions and lines of inquiry for fieldwork topic guides

a) (Reach): How do participants find out about the projects?

- How do providers promote the projects?
- How is access related to socio-demographic factors like gender, ethnicity, age, and English as a second language?

b) (Engagement): Why do participants join the projects? What are their expectations and/or goals?

c) (Retention): What features of the projects encourage participants to stay for the length of the course?

d) (Implementation): Were the projects implemented as intended?

- Was the course pitched at the right level and pace for participants' needs?
- How do providers assist participants who have physical or cognitive impairment?
- What do participants and providers view as the best aspects of the projects?
- What do participants and providers think could be improved?

e) (Outcomes and mechanisms): Did the use of technology help to reduce SIOL? What are the key mechanisms?

- How did the projects aim to use technology to reduce SIOL? (theory of change)
- Did the projects improve participants' confidence in using technological devices?
- Did the projects improve participants' skills in using technological devices?
- What are participants using their smartphones/tablets for? e.g. Keeping in touch with family and friends (locally and abroad), meeting new people, navigating services (e.g. council services, health services, travel services), finding leisure and social activities.
- Did the projects reduce participants' SIOL?
- Which devices were most used by participants, and why? Were there any functions, and/or apps which were particularly popular/successful/any unpopular?

f): (Sustainment) Are the outcomes of the projects sustained?

- Did participants continue to use ICT after the project ended?
- Did participants form lasting relationships with other people in the group?
- Do participants feel that ICT had an impact on their family and friendships? On their contact with other people? On their knowledge of local activities?
- Did participants go on to show others how to use devices?
- How do participants go online outside of projects?
- Do participants have access to broadband at home?
- After the project, who do participants talk to if they need help with their device?
- Are participants receiving more contact from others due to their increased confidence/use of ICT?

Appendix D: Data collection mapped onto research questions

Research questions	Data
How do participants find out about the projects?	Participant and provider interviews
Who participates?	Anonymised participant data
Why do participants join the projects? What are their expectations and/or goals?	Participant and provider interviews
What features of the projects encourage participants to stay for the length of the course?	Participant and provider interviews
Were the projects implemented as intended?	Provider interviews
Did the use of technology help to reduce SIOL?	Anonymised participant data Participant interviews Observation of sessions
What are the key mechanisms?	Participant interviews Observation of sessions
Are the outcomes of the projects sustained?	Participant interviews

Appendix E: Observation schedule

Date:		**Location:**	
Time of observation (start to finish):			
Researcher initial:			
Focus		**Comment**	
1. Description of space and equipment set up			
2. Number and description of facilitators			
3. Arrival of participants • *Include how participants are welcomed, whether missing participants are followed up, how participants behaved while waiting for class to start*			

4. Number of participants in the group Include: • *no. of men/women;* • *ethnic diversity;* Number of group members with: • Low support needs (LS), Moderate support needs (MS), High support needs (HS) • No. using their own phone/tablet in class	
5. Clearly communicated aim and objective of session/workshop/training or meeting?	
6. Description of group structured time (i.e. teaching) *- describe quantity, nature, content, resources/ handouts)*	
7. Description of group unstructured time (i.e. informal assistance, socialising) *- describe quantity, nature, atmosphere*	
8. Nature of interaction between users *- social butterflies, dominant/quieter group members, first/last to leave*	
9. Quality of facilitation *- including efforts to engage each group member, clarity and warmth in communication, guiding group discussion, encouraging group member to share experiences*	
10. Other	

Appendix F: Interview guide for providers

INTRODUCTION

The interview should take about 1 hour 30 minutes. We will ask you questions about promoting and engaging participants in the project, how the project may work to reduce social isolation and loneliness, and the successes and challenges of running the project. We will feedback the results of this evaluation to Connect Hackney and the national Ageing Better Programme.

If you do not want to answer a particular question, you don't have to, and if you feel uncomfortable, we can stop the interview at any point.

Do you agree to take part? We need you to fill in and sign a consent form. Is that OK?

Are you happy for me to record the interview?

Have you got any questions before we start?

BACKGROUND INFORMATION

Can you tell me what your involvement in the project has been?

Have you run similar projects with technology and older people in the past?

Prompts:

If yes, can you tell me more… What are some of the key things to take into account when working with an older age group?

If not, have you run similar projects with other age groups? What are some of the key differences when working with an older age group?

Were older people involved in the design of the project?

Prompts:

At what point?

Now that the course has started?

REACH AND ENGAGEMENT

1. How have you publicised the project?

Prompts:

Challenges for promotion?

2. What features of the project did you promote to encourage people to attend?

3. What have you found to be the best ways to get participants to come to the first session?

Prompts:

(Retention) And to keep them coming?

4. What have you found to be the main barriers to getting participants to come to the first session?

Prompts:

(Retention) And to keep them coming?

5. Why do you think that participants attend the project at the start?

Prompts:

Considering investing in smartphone/tablet?

Learning to use phone?

Friendship?

Free activity?

THEORY OF CHANGE

6. What have been the main benefits for participants attending the project?

(For each outcome) Can you give me an example?

Prompts for possible outcomes:

Knowledge, confidence, skills in using smartphone/tablet?

Using apps to stay in touch with family/friends?

New friendships?

Staying in touch with community and wider world?

7. How does participants' motivation for attending affect the benefits they get from the project?

8. Do some participants benefit differently from the project than others?

Prompt:

Have benefits been the same for:

a) no smartphone use vs a bit/some smartphone experience?

b) all age groups? (60-74; 74+)

c) all ethnic groups?

d) all levels of mobility?

In what ways have they been different?

9. We are very curious about how the learning sessions reduce the risk of social isolation and loneliness. How do you think learning to use technology has helped participants to stay in touch *with other people*?

Prompt:

Can you give an example?

10. How do you think learning to use technology has helped participants to stay in touch with the world around them?

Prompt:

Can you give an example?

Using navigation apps?

Searching for activities in local area?

IMPLEMENTATION

11. What is it about the way your organisation implemented the project that made a difference to how it worked?

12. What are the major barriers participants have faced in learning to use digital skills and applying them independently?

Prompt:

Can these barriers be overcome?

What techniques have helped to overcome these barriers?

13. Have you had to adapt the course from the project you originally planned?

Prompt:

If yes, Why?

14. If there was anything you could change about the project to make it work more effectively, what would it be?

Prompt:

If yes, what and why?

SYSTEM CHANGE

15. Can you tell me what involvement you have had with the Learning Network?

16. Do you feel being part of the network has impacted your delivery or approach?

Prompt:

In what way?

Signposting to other projects?

17. Have you developed any new or existing partnerships through implementing the project?

Prompt:

Involvement with primary care?

Involvement with businesses?

18. Has performance monitoring had an impact on keeping the project on track?

Prompt:

If yes, in what way?

19. What more support would the project like from Connect Hackney?

20. Is there anything else you would like to tell me about the project that you think is important, that we haven't already spoken about?

Thank you!

Appendix G: Interview guide for participants

INTRODUCTION

The interview should last about 25 mins. We will ask questions about how you found out about the project, and what you hoped to get out of taking part. We will also ask some questions about what you have liked and what could be improved, and how using technology has impacted on your social life (if at all). We will feedback the results of this evaluation to Connect Hackney and the national Ageing Better Programme.

If you do not want to answer a question, you don't have to, and if you feel uncomfortable, we can stop the interview at any point.

Do you agree to take part? We need you to fill in and sign a consent form. Is that OK?

Are you happy for me to record the discussion?

Have you got any questions before we start?

WARM UP AND REACH

1. How did you find out about the project?

2. Can you tell me a little bit about yourself –

Have you lived in Hackney most of your life?

Are there any activities that you do routinely each week? e.g. social club, gym, volunteering, seeing a friend or relative.

Do you live by yourself or with others?

REACH AND ENGAGEMENT

1. What were your reasons for joining the project?

Prompts:

Considering investing in smartphone/tablet?

Learning general skills in using phone/tablet?

Improve confidence in using phone/tablet?

Keep in touch with family and friends?

New friendships?

Free activity?

Use phone/tablet to find out information?

Use phone/tablet for practical purposes e.g. online shopping?

2. When you first read about, or was told about the project, how was it described to you?

3. Why do you think mostly women join the project?

4. Did someone from the project discuss your personal needs and reasons for taking the course either before it started or at the first session?

5. The first time you attended the course, what were your first impressions?

Prompts:

The journey to the building?

The room?

The facilitators?

The objectives or content of the course?

THEORY OF CHANGE

6. What goals did you have at the start of the project?

EXERCISE. *Each given envelop with the goals below written on individual cards, plus some blanks. Participants asked to select or write down which goals are true for them. And then stick them on a piece of paper in order of importance. Then we'll compare them.*

Prompts:

Considering investing in smartphone/tablet?

Learning general skills in using phone/tablet?

Improve confidence in using phone/tablet?

Keep in touch with family and friends?

New friendships?

Free activity?

Use phone/tablet to find out information?

Use phone/tablet for practical purposes e.g. online shopping?

Romance/online dating?

7. Did you achieve the goals that you had?

Prompts:

Can you tell us more…

8. We are very curious about whether learning to use technology can improve social connections and relationships. How do you think learning to use technology has helped you to stay in touch *with other people*?

Prompt:

Can you give an example?

Family and friends in UK

Family and friends abroad

Meeting new people

9. Do you think learning to use technology has helped you to stay in touch with the world around you?

Prompt:

Can you give an example?

Using maps

Using services, e.g. health, travel, council

Finding out about local activities

Reading news

Doing shopping online

IMPLEMENTATION

10. Have you experienced any negative sides to using the technology to connect with other people?

Prompt:

Can you give an example?

11. Would you recommend the course to a friend?

Prompt:
Can you tell me more…?

12. What features of the project encouraged you to keep coming to the sessions?

13. If there was anything you could change about the project to make it better, what would it be?

Prompt:
If yes, what and why?
Level of one-to-one support?
Pace of the course?
Content of the course?

14. Is there anything else you would like to tell me about the project that you think is important, that we haven't already spoken about?

Thank you!

Appendix H: Missing data analysis

Completion rates for social isolation and loneliness at entry to projects were as follows: 66% DJG scores, 75% UCLA scores, 68% social contact with family and friends, 64% social contact with non-family members, and 58% well-being scores. Completion rates for participants (n=84) with both entry *and* follow-up data was: 40% DJG scores, 57% UCLA scores, 37% social contact with family and friends, 64% social contact with non-family members, and 32% well-being scores.

The percentage of participants who provided data (response rate) at entry was greater across all outcome measures for participants aged 50 to 69 years than participants aged 70+. One participant did not record their birth year, so the total sample is 83.

Response rates at follow-up were lower for participants aged 80+ for all measures except the UCLA score, where missing data was similar between those aged 70 to 79 and those aged 80+. For participants aged 80 and above, all measures, except for social contact with non-family members, had response rates of 50% or less, with response for wellbeing scores and social contact with family as low as 17% and 25% respectively.

Response rates for each outcome measure by age

	50 to 69 (n)	70 to 79 (n)	80 plus (n)
DJG score entry	81.8% (18)	59.5% (22)	62.5% (15)
UCLA score entry	95.5% (21)	70.3% (26)	66.7% (16)
Social contact with family/friends entry	90.9% (20)	59.5% (22)	62.5% (15)
Social contact with non-family entry	86.4% (19)	59.5% (22)	54.2% (13)
Wellbeing entry	77.3% (17)	48.6% (18)	58.3% (14)
DJG score follow-up	50.0% (11)	40.5% (15)	33.3% (8)
UCLA score follow-up	86.4% (19)	45.9% (17)	50.0% (12)
Social contact with family/friends follow-up	59.1% (13)	32.4% (12)	25.0% (6)
Social contact with non-family follow-up	86.4% (19)	59.5% (22)	54.2% (13)
Wellbeing follow-up	45.5% (10)	35.1% (13)	16.7% (4)

Appendix I: Socio-demographic and baseline outcome profile for digital inclusion participants

a) Socio-demographic profile of participants

Table 1 describes the socio-demographic profile of participants who completed a CMF questionnaire at entry to the two digital inclusion projects under study (first column in table 1). The majority of participants were female and aged 70 or over. The majority were also from a 'Black' or 'White' ethnicity and described themselves as 'Christian' in terms of religion. Over half of the participants were living alone and over a half had a long-standing physical or mental illness or disability. A fifth of participants reported themselves to be a carer (NB: Details are not reported on LGBT+ due to low numbers in some of the categories).

Connect Hackney projects overall are attracting a greater proportion of female participants than male and, as might be expected, a greater proportion of participants at the older end of the over 50 aged group (second column in table 1). These trends are even more marked amongst the participants in the digital inclusion projects.

Table 1: Socio-demographic profile of participants

	@Online and Silver Connections (%)	All Connect Hackney projects (%)	Hackney Census data (%)
Gender			
Female	90	62	52
Male	10	38	48
Total N[41]	84	291	-
Age[42]			
50 to 64	15	36	61
65 to 69	12	16	12
70 to 74	24	13	10
75 to 79	21	14	8
80 and over	29	21	9
Total N	**83**	**281**	-
Ethnicity			
Black	46	43	26
White	40	42	56
Asian	6	6	9
Other[43]	8	9	9
Total N	**81**	**286**	-
Religion			
Christian	75	64	58
Jewish	9	7	6
No religion	7	14	18
Other[44]	9	15	18
Total N	**75**	**266**	-
Living arrangements			
Living alone	64	71	24
Living with others	36	29	-
Total N	**69**	**62**	-
Carer			
Yes	20	17	17
No	80	83	93
Total N	**56**	**60**	-
Disability			
Yes	62	60	38
No	38	40	76
Total N	**55**	**58**	-

41 Total participant numbers (Ns) for each characteristic vary as not all 84 participants answered all questions.
42 Age bands are structured in line with local dashboard. Categories '50 to 59' and '60 to 64' have been combined due to low numbers in band '50 to 59'.
43 Due to small numbers, 'Other' was combined with 'Mixed ethnicity'.
44 Due to small numbers, 'Other' was combined with 'Muslim', 'Hindu', 'Sikh' and 'Buddhist'.

Digital inclusion projects, like all Connect Hackney projects, are attracting a higher proportion of black participants than might be expected from Hackney census data (46 and 43 per cent shown in the first and second columns of table 1, compared to the 26 per cent shown in the third column). Compared to Hackney residents and all Connect Hackney participants, participants in the digital inclusion projects were more likely to report their religion as Christian, and there were less participants reporting 'no religion' or 'other' types of religion. Compared to the local picture overall, participants across all Connect Hackney projects, as well as those participating in the digital inclusion projects, were more likely to be living with a long-standing disability or illness (62 and 60 per cent respectively compared to 38 per cent). The higher rates of participants with a long-standing disability or illness is likely to reflect the older age range of the participants (the majority of participants were over 70 years old).

We compared the socio-demographic profile of *Silver Connections* and *@online* participants (data not shown in table 1). There were no differences between *Silver Connections* and *@online* participants in gender, their living arrangements, whether they had a long-standing health problem or disability or were a carer. However, *@online* had more older participants than *Silver Connections*. There were also differences in ethnicity– 65% of *Silver Connections* participants were black compared to 32% of *@ online* participants; 53% of *@online* participants were white in comparison to 21% of *Silver Connections* participants. Only *@online* had Jewish participants.

b) Social contact and participation at baseline

Table 2 describes digital inclusion participants' scores on measures of social contact and participation at project entry (baseline) (first column in table 2). These are compared to all Connect Hackney participants, residents taking part in the Hackney baseline profile, and the national picture. Digital inclusion project participants reported a higher average level of social contact with their immediate social circle of family, and friends compared to Connect Hackney project participants overall.

Table 2: Baseline social contact and participation

	@Online and Silver Connections (%)	All Connect Hackney projects (%)	Hackney Baseline profile (%)	National Picture (%)
Social contact with children, friends and family				
Mean score (0 to 5)	3.7	3.2	-	-
Total N	**57**	**211**	**-**	**-**
How often speak to anyone other than family				
% saying everyday	54	49	47	63
% saying at least once a week	41	35	37	33
%saying at least once a month or less often	6	16	16	4
Mean score (0 to 8)	7.2	6.8	-	7.36
Total N	**54**	**255**	**354**	**1630**
Participation				
% member of a club, group or organisation	94	73	39	71
Total N	**52**	**248**	**354**	**5881**
Volunteering[45]				
% volunteered in past year	52	47	10	33
Total N	**42**	**231**	**354**	**5881**
Perception of whether do more or less social activities				
% saying less than most	34	46	40	44
% saying about the same	33	25	40	37
% saying more than most	33	30	20	19
Total N	**52**	**254**	**354**	**1630**

Participants in the digital inclusion projects had a slightly lower mean level of contact with anyone other than family compared to older people at a national level (fourth column), but a higher mean level than participants across all Connect Hackney projects (second column). The slight difference compared to the national picture reflects a higher proportion of digital inclusion project participants reporting contact of at least once a month or less often.

Around 12% had little social contact with family and friends (scoring two or below), and around 4% had little social contact with non-family members (scoring 3 or less). Conversely, around 35% had high social contact with family and friends (scoring 4.5 or above), and 54% had high contact with non-family members (scoring 8).

c) Social isolation and loneliness and wellbeing at baseline

Participants in the digital inclusion projects were more lonely than older people nationally and in Hackney as a whole, but were less lonely than Connect Hackney participants overall (Table 3). Participants' level of social isolation and loneliness was similar across projects (data not shown in table 3).

45 Particpants were asked "In the last 12 months have you given unpaid help in any of the ways shown on this card…". A range of activities were shown on the card (e.g. raising or handling money/taking part in sponsored events; leading a group/member of a committees; befriending or mentoring people)

Table 3: Social isolation and loneliness

	@Online and Silver Connections (%)	All Connect Hackney projects (%)	Hackney Baseline profile (%)	National Picture (%)
De Jong Gierveld				
% scoring 6 (severely lonely)	9	18	6	2
% scoring 5	6	14	5	3
% scoring 4	11	15	8	5
% scoring 3	24	16	16	9
% scoring 2	11	13	15	18
% scoring 1	11	9	20	26
% scoring 0 (not lonely)	29	16	31	36
Mean score (0-6)	2.3	3.2	1.9	1.4
Total N	**55**	**225**	**354**	**1630**[46]
UCLA loneliness scale				
% scoring 9 (most lonely)	5	8	5	2
% scoring 8	0	4	3	1
% scoring 7	6	13	4	3
% scoring 6	22	22	8	11
% scoring 5	10	14	11	11
% scoring 4	18	9	11	17
% scoring 3 (least lonely)	40	29	58	55
Mean score (3-9)	4.6	5.3	4.2	4.0
Total N	**63**	**249**	**354**	**5881**[47]

However, there was a lot of variation between participants, some with much greater difficulties than others. On joining the projects, 15% of participants reported high feelings of loneliness based on the DJG score (a score of 5 or 6), and around 11% of participants reported high loneliness according to the UCLA (a score of between 7 and 9). Conversely, 29% of participants were not at all lonely based on the DJG and 40% of participants were not lonely according to the UCLA.

Table 4: Well-being

	@Online and Silver Connections (%)	All Connect Hackney projects (%)	Hackney Baseline profile (%)	National Picture (%)
Wellbeing (SWEMWBS)				
Mean score (7 to 35)	24.0	21.1	-	25.2
Total N	**49**	**195**	**-**	**Tbc**

In relation to wellbeing, around 10% of participants had low wellbeing scores (scoring 18 or less) and 18% had high wellbeing scores (scoring 30 or more). There was a trend for lower wellbeing scores at entry for *@online* participants (22.4 for *@online* versus 25.5 for *Silver Connections*, p<.069) (data comparing the two digital inclusion projects is not shown in table 3).

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Appendix J: Descriptive analysis of changes in digital inclusion participant outcomes between baseline and follow-up

Outcome data on participants' improvement in loneliness and wellbeing described in this section should be interpreted with a high degree of caution due to low sample size and low completion rates. Entry and follow-up data on loneliness was available for 34 participants for the DJG scale (40% response rate) and 48 participants for the UCLA scale (57% response rate). There was insufficient data available to give outcomes by project, particularly given differences in participants' demographics that are likely to have an impact on outcomes, for example, increased age for *@online* participants.

There was no difference in loneliness scores or measures of social contact between entry and follow-up. Loneliness scores were higher at both entry and follow up than the average scores for older residents in Hackney (see figure 4.2). At follow-up, 32% of participants had improved loneliness scores based on the DJG, and 35% had improved scores according to the UCLA. 43% of participants had improved social contact with friends and family, and 15% had improved social contact with non-family members. 36% had improved wellbeing scores (see figure 4.3).

Figure 4.2: Changes in participants' loneliness scores from entry to follow-up

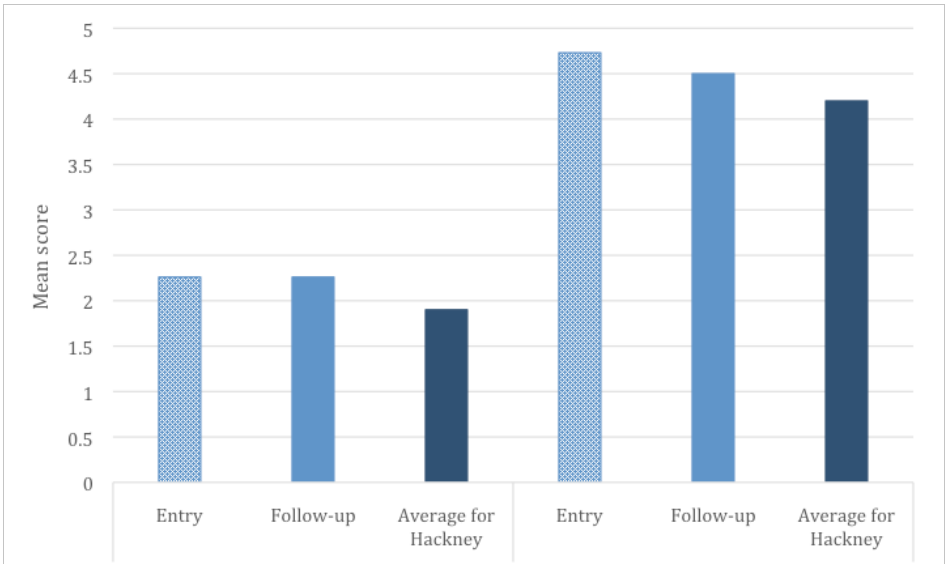
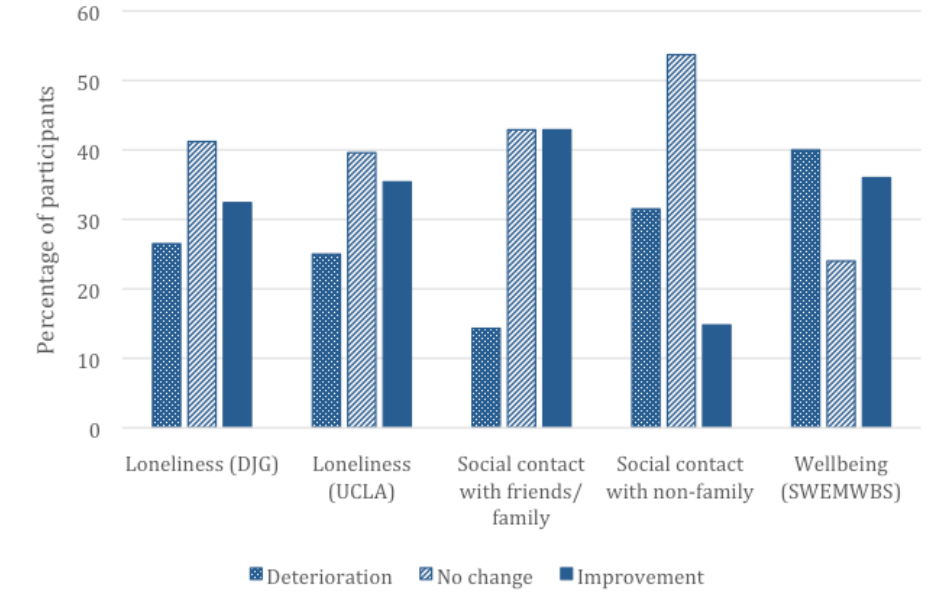


Figure 4.3: Improvement and deterioration in participants' outcomes from entry to follow-up



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