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“There’s not enough knowledge out there”: Examining older adults’ perceptions of digital technology use and digital inclusion classes

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Abstract

Older adults' definitions of digital technology, and experiences of digital inclusion sessions, were examined using qualitative approaches. Seventeen older adults (aged between 54 and 85) participated in two focus groups that each lasted approximately 90 minutes to explore how older adults understood technology within their lived experience. Interpretative Phenomenological Analysis yielded two main themes: Thirst for knowledge and a wish list for digital technology sessions. A separate content analysis was performed to identify what technology older adults identified as digital technology. This analysis revealed that the older adults most frequently defined digital technology as computers and telephones. The findings support the conclusions that this group of older adults, some of whom were 'successful users', have a wide knowledge of digital technology, are interested in gaining more skills, and desire knowledge acquisition through personalised one-to-one learning sessions.

Key words: Older adults, digital technology, digital inclusion, digital divide

“There’s not enough knowledge out there”: Examining older adults’ perceptions of digital technology use and digital inclusion classes

Over recent years society’s reliance on digital technology has increased prompting what some have termed the ‘digital revolution’ (Weller & Anderson, 2013). Increasingly during the last decade tasks that have historically and routinely been performed through face-to-face means are migrating to the digital world with many companies and service providers only interacting with their customers through virtual modalities. Consequently, this drive for virtual service has meant that members of society are, by virtue of these changes, expected to engage progressively with technology in order to complete countless day-to-day activities. Alongside the expectation to progressively engage with technology, the technology itself is rapidly evolving. Despite the fact that many adults have embraced this evolving world, and older adults are the fastest growing group of internet users (Wagner, Hassanein, & Head, 2010), some older adults are not as comfortable with the growing digitalisation and, as such, face digital exclusion. Health provision and access to information via digital technology about health related matters is one pertinent example of this digital divide in older adults (Hall, Bernhardt, Dodd, & Vollrath, 2014; Hong & Cho, 2016). This resulting digital divide and the need for digital inclusiveness constitute two of the biggest challenges currently faced by service providers (Carvalho et al., 2012; Godfrey & Johnson, 2009) both in terms of how digital technology is defined but also how individuals gain the skills to use technology. The current study examined these issues with older adults.

Currently, there are over 10 million adults aged over 65 in the UK and this figure is expected to rise by 5 million over the next 20 years (Cracknell, 2010) and, as such, the proportion of those who are digitally excluded is likely to increase without appropriate interventions. Although this projected increase in older adults includes many digital aware middle-aged adults, we need to be mindful that the ever evolving and rapid changes to

technology likely necessitate that some of this group may need training to keep pace with technological advances. Moreover, researchers have recently argued the importance of developing flexible skills and technological self-efficacy in order for individuals to maintain their digital literacy (Steelman, Tislar, Urell, & Wallace, 2016).

Digital inclusiveness encompasses the proficient use of a range of media and applications by members of society. Although 77% of adults in the UK reported that they are online, when disaggregated according to age, only 59% of those over 65 reported that they are online (Cabinet Office, 2012). Selwyn, Gorard, Furlong, and Madden (2003) argued that when investigating adults' technology use it is important to recognise the range of technology that they engage with. According to Selwyn et al. the most frequent forms of digital technology utilised by older adults were telephones, terrestrial television, video recorders/players, and radio. However, the research by Selwyn et al. involved participants responding to predefined lists of technology rather than relying on participant driven conceptualisations of technology; therefore, participants' understanding of digital technology may not have been fully captured. Moreover, in the years since Selwyn et al.'s work, the nature of digital technology has continued to evolve. More recent research has reported that, compared to younger adults, older adults use fewer types of technology for a more limited range of activities (Olson, O'Brien, Rogers, & Charness, 2011) and report concerns about using social media (Hope, Schwaba, & Piper, 2014; Jung, Walden, Johnson, & Sundar, 2017). Consequently, the current study was designed to gain an insight in to older adults' conceptualisation of digital technology.

Alongside the issue of how older adults define digital technology is the issue of how older adults gain the skills to be proficient technology users. Younger generations have developed their skills either through their formal education, as ICT skills have been part of the national curriculum since 1988 in the UK, through their employment, or through exposure

to technology that is part of everyday life. However, those adults who did not receive such training or who did not routinely experience digital technology in the workplace are likely to be at greater risk of digital exclusion (Barnard, Bradley, Hodgson, & Llyod, 2013).

Consequently, there is growing concern that some older adults experience increasing levels of digital exclusion because they lack the necessary skills to successfully engage with the digital world (Hanson, 2010; Hickman, Rogers, & Fisk, 2007; Mason, Sinclair, & Berry, 2012; McDonough, 2016).

The technology acceptance model (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) provided a theoretical account for an individual's propensity to engage with technology and has subsequently been revised to integrate self-efficacy (Igarria & Iivari, 1995). Empirical research suggests that those older adults who frequently use technology have higher levels of interest in technology, greater self-efficacy for technology, are in better health, and have higher income and cognitive abilities (Wagner et al., 2010). Lee and Coughlin (2015) outlined 10 facilitators or determinants of older adults' adoption of technology: value, usability, affordability, accessibility, technical support, social support, emotion, independence, experience, and confidence.

Godfrey and Johnson (2009) proposed a number of techniques that could be used to ameliorate digital exclusion. For example, enhancing older adults' skill sets, providing supportive learning environments, and utilising social support may together foster inclusion. However, Godfrey and Johnson caution that whilst these techniques can be facilitative for some older adults, for others they may be act as barriers to technology and, as such, serve to widen the divide. Moreover, with the rapid pace of evolution in the technological world, technology users need to continue to refine their skills so that they can maintain their level of engagement with technology. More recently, Wolfson, Cavanagh and Kraiger (2014) advocated that digital technology training for older adults should "(1) be highly structured,

(2) provide feedback and adaptive guidance, (3) include metacognitive prompts, (4) incorporate principles derived from cognitive load theory and cognitive theory of multimedia learning, and (5) include a user interface that is simple and consistent throughout the course” (p 26). However, whilst these recommendations were based on a comprehensive literature review, it is not clear how they translate to what older adults themselves regard as important for learning about digital technology.

Researchers have also sought to examine effective training methods to enhance older adults' digital technology skills using quasi-experimental designs (e.g., Hickman et al., 2007; Nair, Czaja, & Sharit, 2007). Understanding the prerequisites of effective delivery is important for three reasons. First, a greater understanding may go some way to address the digital divide that some older adults experience. Although there is guidance available for teachers about recognised good practice in delivering digital technology skills to children and young people (e.g., subject professional development materials: ICT, Ofsted, 2012) and in teaching publications (e.g., Davis, 2003; Lindahl & Folkesson, 2012; Reynolds, Treharne, & Tripp, 2003; Watson, 2001), the guidelines for delivering such sessions to older adults are less refined and only recently emerging in the academic literature (e.g., Wolfson et al., 2014). Second, a greater understanding of the needs of older adults would enable effective provision to be offered that was more focused on their specific needs. Third, engaging with computers enhances positive attitudes towards them (Wagner et al., 2010).

Focusing on providing successful digital technology tuition, Cody, Dunn, Hoppin, and Wendt (1999) argued that individuals must be able to access the required technology and also receive appropriate training for their needs. Recently, Mason et al. (2012) argued that peer tutoring amongst older adults offered an effective mechanism to reduce the digital divide. Mason et al.'s other recommendations were more focused on the possible mechanisms to enhance older adults' engagement with digital inclusion sessions rather than the actual

content of the sessions per se. For example, (a) the inclusion of visual images of older adults in promotional material of the companies and organisations that offer training, (b) the government and private sector offering 'champions' for technology to provide support, and (c) that greater investment should be made by the government and the private sector to support adult learning if the motivation to move to digital means is a money saving initiative. Consequently, it is clear that there is a recognition that older adults need to be taught appropriate skills to engage with digital technology but guidance concerning best practice for digital inclusion sessions is less forthcoming. Therefore, the current study also examined, from the perception of older adults, what constitutes effective training provision and what their learning ambitions were with regard to digital technology. Authors have made significant gains in establishing how older adults use digital technology and how they engage with technology (Mitzner et al., 2010; Mitzner et al., 2008). The unique contribution of this paper is twofold; first, it seeks to establish a current definition of digital technology according to older adults. This reflects the technology they use, are aware of, and define within the context. Second, rather than seeking to establish the prevalence of perspective training needs as previous papers have done, we seek to understand the ideographic lived experience of training programs post-training. In this way a more experienced older adult who has received training on digital technology is uniquely qualified to advise on how their journey in to and through digital technology training could be enhanced for others. Further, the approach we adopt here addresses the finding by Schreurs, Quan-Hasse, and Martin (2017) that older adults who use digital technology often have a specific set of skills pertaining to specific activities which may have the unintended consequence of creating a skills deficit in particular areas of digital technology use, thus creating a barrier to further engagement with digital technology.

Through the use of focus groups with older adults, the current study aimed to examine: (1) what older adults' defined digital technology to be, (2) what older adults' perceive their training requirements to be, and (3) what was considered to be best practice in the delivery of training sessions to support digital inclusion.

Method

Interpretative Phenomenological Analysis (IPA) responds to the meaning making nature of the research questions and, therefore, was selected as the most appropriate method for this research. The method of IPA was developed to understand the subjective experiences of individuals, including the cognitions and emotions that underlie their views about particular subjects. It involves an in-depth analysis of similar cases to try and understand the lived experiences of individuals, how those people make sense of their experiences, and the meaning these experiences have for a person. However, IPA also acknowledges that there is an element of the analysis that is dependent upon the researcher's own conceptualisation of the data, but that this interpretative activity is needed to make sense of another person's experiential world. The data for the present study was collected through focus groups, creating a forum that would provide a containing and stimulating setting in which the older adults would feel empowered to express their views. Willig (2001) states that focus groups provide an interaction among participants that creates a source of data, with the researcher taking the role of mediator, gently guiding the discussion. Whilst the application of IPA to focus group data is less common, participants' phenomenological accounts can still be captured via a modified IPA approach (see Palmer, Larkin, De Visser, & Fadden, 2010). The analytical processes outlined in Palmer et al. were closely followed when analysing the data for the present study.

In addition to exploring older adults' subjective experience of digital technology training the present study examined how older adults define digital technology (research

question 1). This was achieved via the application of deductive content analysis to the focus group data. The content analysis was used simply to define the subject matter (what digital technologies older adults defined as digital technology). This was performed separately to interpretative phenomenological analysis and consequently sat as a separate analysis.

Participants

IPA requires purposive sampling, such that participants can provide a meaningful perspective regarding the topic (Reid, Flowers, & Larkin, 2005). The focus of this method is on understanding older adults' ideographic experiences of digital technology use. The research therefore recruited 17 (10 female and 7 male) older adults through a regional Age UK (a UK based charity concerned with the needs of older people), with all participants having previously attended digital inclusion classes. These are a suite of classes run by Age UK, aimed at helping older adults develop and improve their use and understanding of digital technology. The classes are based around different levels of knowledge, familiarity, interested and function of digital technology. The first focus group comprised 10 people aged between 55 and 80, with a mean age of 68.7. The second focus group comprised 7 people aged between 54 and 85, with a mean age of 81. All participants were white. Although not formally recorded, the participants commented during the focus groups that they were single, widowed, and married. Some of the participants also commented during the focus groups that they were from rural areas of the county that had limited internet connections, with a few participants commenting that they only just had broadband in their village.

Procedure

Each focus group lasted approximately an hour and a half and aimed to discuss the participants' awareness and usage of digital technology; the impact of digital technology on the participants' wellbeing and the technical and non-technical gains of attending a digital inclusion class. Our research funding was secured in collaboration with the regional Age UK

charity and ethical approval was given (No. 2012/26). The organisation approached individuals who had attended at least one digital inclusion class, passing on an invitation to take part in the research at a pre-arranged time at the premises where the digital inclusion classes had taken place.

The focus groups were facilitated by the researchers. One researcher took the lead in facilitating the discussions, another took on the role as note taker using a flipchart; this was to aid the discussions so that review and reflection questions could be asked towards the end of the focus groups using those notes as discussion aids. The discussions were digitally recorded and then transcribed verbatim with pauses timed in seconds and recorded in parenthesis.

The focus group transcripts were analysed using the IPA analytic process (Smith, Flowers, & Larkin, 2009). To permit the experiential and interactional elements of analysing focus-group data, further guidelines as outlined in Palmer et al. (2010) were also used. The analytic process was completed with one researcher taking the lead, whilst the other two researchers reviewed the analysis to check for process and academic rigour.

Separate to the IPA process, to explore how participants defined digital technology within their talk, a content analysis was completed on the transcripts.

Results

Content Analysis

To access the participants' definition of digital technology a content analysis was carried out on the transcripts from both focus groups. In total, participants mentioned 57 different types of technology or technology aligned words and, across both focus groups, these words were used 348 times. The most frequently mentioned form of technology was computer (97) followed by telephone (55). However, the participants also mentioned Skype,

Facebook, Kindle and iPad 10 or more times during the course of the focus groups (see Figure 1).

Insert Figure 1 about here

The content analysis was also used to establish self-defining categories. Figure 1 indicates that digital technology was most frequently defined as computers and telephones (including smart telephones) which are separate physical technologies or facilitators to host the programmes. Skype, Facebook, and the Kindle were then another clear cluster. Together, these were differentiated as activities or programmes that are used on computers. We then have a low frequency group of iPad, television, twitter, printer, and email each of which were mentioned less frequently by participants. These frequencies suggest that participants are not grouping digital technology as the literature does in to computers, functions, tasks, and programmes (e.g., Olson et al., 2011), the definitions suggest a more nuanced grouping based around an applied use. Instead the participants were clustering digital technology around activities performed. For example, “digital books” include the Kindle, the computer, and the iPad. However, each of these technologies also host different programmes/applications and which then allow a range of tasks to be performed within those programmes or applications.

Qualitative Analysis

The analysis yielded two main themes: Thirst for knowledge and, through the analytic process, a wish list for digital technology classes soon became clear.

Thirst for knowledge. Participants’ talk was clear in their perception that older adults are not only knowledge hungry regarding digital technology, but they also regard digital technology use as an absolute requirement in order to participate fully in today’s society:

“I mean in REGION for example 30% (0.4) of the population in our part of REGION can be testified for as an older person, and that’s a heck of a percentage, [Sparky: It is, isn’t it] and it should be a reminder and remembered that all these people have got the vote, and they’re like to use it (0.8). But these are the people are that, you know okay, a percentage of that 30% have been bought up here and work with a computer, but there’s a, a residue (0.4) at least 10% who haven’t, and who are not computer literate and need to be communica-, they need to have communications” (Foxglove, Focus Group 2)

“this is a summer edition of AgeUK, if you look through there, there are seven cases where they could tell you to get more information, and the only way you could get it is to use your computer. They will, no alternatives, no address, no phone number, but (0.2) go to this website, and that’s at AgeUK” (Sparky, Focus Group 2)

This prospective digital divide has been discussed and explored in further detail by the authors (see authors, 2015); however, the question then becomes how to facilitate older adults in their use of the internet:

“I think technology is great, but it’s just how, how are we going to be taught how to use it?” (Eve, Focus Group 2)

In response to this knowledge hunger, data yielded clear directions as to how to support and provide learning for this age group. One aspect of their experiences that they wished to keep was the role that Age UK occupied as digital technology gatekeepers and facilitators. Participants talked about the value of a safe learning environment where they could learn about digital technology in an accessible, appropriately paced, and inclusive manner.

“I mean the good thing about it is they talk to you in a language that you understand” (Minni, Focus Group 1)

“it’s nice that it breaks it down, you can understand, you’ve got the time, I think that’s the element and it, and you can go over it again and again” (Minni, Focus Group 1)

The data were also very directive that facilitation and support should be delivered one-to-one in order to personalise the digital technology to the individual and how they choose to use it. The support offered to participants in the learning and maintenance of the technology was also valued due to the non-judgemental delivery style and approach by facilitators.

“I come to a thing called computer club here once a month and urm, and that is very good, its urm, it's a it's a it's a time where you can either raise an-any queries you have, and this is where its useful you know, I tried to do this but I can't do it, how do I do it? And you get told, and that's brilliant” (Sparky, Focus Group 2)

“the initial course was very good, and you can one-to-one lessons, which...is a trans-advantage” (2606, Focus Group 2)

Experiences of other facilitators at other providers of digital technology classes had been isolating and insulting. Data commonly highlighted a pace that was too quick, judgemental attitudes, and inaccessible jargon. When classes were not streamed, based upon ability, older adults found this hindered their ability to engage with the content. These barriers to learning were recognised throughout the data as doing more damage than good to both the older adult's confidence and their use of digital technology; producing negative outcomes for the older adult:

“Yes I find college teaching is quite poor, I I find that the teachers they can't get around 10 or 12 people, and you can just learn (0.4) absolutely nothing at the end of a session” (2606, Focus Group 2)

“There were no hand-outs at all, you you know, uh I expected to have... we got none of that but I find that one-to-one with your own (0.8) with your own computer, laptop and (0.5) alright” (Lakes, Focus Group 2)

“There's some people that seem to know everything, and you seem to wonder why they're there and others who are, like myself know very little and you feel embarrassed sometimes to

ask single, simple questions, and that does want to be put right... it want's to be perhaps a beginners group, and uh a more advanced group" (Sparky, Focus Group 2)

This exclusion established through pace, terminology, or delivery style was also a recurrent experience when seeking help from other sources outside the education setting but within the digital technology sector. This included customer service helpdesks or enquiry helplines:

"and I totally panicked when I got onto the plusenet bloke who said 'Oh just follow the instructions'" (Maria, Focus Group 1)

"Before I was a bit overwhelmed because you ring up those guys at the help centre and that's it's a bit like talking to a (0.4) digital voice you know pre-recorded and urm you, you feel as if it's the human aspect that needs bringing into it, cause you're vulnerable and you've got vulnerabilities but these guys in call-centres and help places they they're obviously wiz kids at it and that you know, they've got loads of patience but you feel a bit embarrassed (0.6) if you get lost" (Charlotte, Focus Group 1)

Data suggested that this exclusion from being able to understand processes and join in/operate the digital technology decreased confidence and interest. This decrease in interest of digital technology is counter to the hunger for knowledge regarding its functions.

Participants' desire for knowledge was not only to learn about how their digital technology could work for them and enable their activities, but also a desire to know more information about other digital technologies. Data reflected participants' value and relish that the opportunity Age UK provided to inspire them to use other forms of digital technology and become informed consumers:

"I mean it's that decision, it sort of lets you see what is available; I mean Skype I saw first here, so I went out and got urm (0.5) the camera and sorted out what we saw with you know, it could be useful you know" (Minni, Focus Group 1)

“So it gives you an opportunity to look at things before (1.2), before having to buy it” (Minni, Focus Group 1)

They were also keen to learn about new technological methods and devices, what their scope was, how they operated, and the ways in which it could fit in to their lifestyle. This provided an important platform to keep them informed, but also to see whether new technologies would be a sensible investment for them. This impartial ‘learn and experience before you buy’ opportunity was greatly valued by participants.

Lastly within this theme, the data identified a thirst for knowledge regarding the productivity of digital technologies. Participants wanted to know how it could be used to complement their hobbies and tasks.

“I think if somebody would tell me more about them, and explain to me, okay what they are and what, what function they, they they serve. Then I, I might, I would be interested, but at the moment I don’t know enough about them to be able to use them” (Foxglove, Focus Group 2)

“More knowledge is needed, as perhaps to use this uh new devices” (2606, Focus Group 2)

Demonstrations of the flexibility of the technology, how it could be adapted to their own lifestyle, and use was identified as being beneficial. Once again one-to-one demonstrations of new, and maintenance of existing, digital technologies were regarded as enabling participants to access the empowering aspects of digital technologies (as outlined in the theme above) and avoid the disempowered position within the digital divide (authors, 2015).

Wish list for DT classes. The second theme developed from data focused on what the needs of older adults were in order to learn, their learning ambitions, and what had and had not worked for them in the past. When analysed, this provided clear direction of wanting both learning and the digital technology itself to be personalised to their abilities and preferences.

The theme was clear that a supportive environment was crucial as well as ability streamed classes, clear instruction, and demonstrations.

Charlotte “It moves you forward. Yes you you come up to a brick wall and you think oh I can't do this and what to do I do now (0.8) but it I mean then you get help and as you said one-to-one.

Maria: Yes, yes.

Charlotte: and and you you if can't work it out, then they'll stick with it until you've got it (0.7) which is marvellous I mean you couldn't get that over a help line or a telephone” (Focus Group 1)

“provide some continuity after the basic course for people who want to go onto other things... I think that keeps people's sort of keen to (0.3) go on and learn more and more” (Belinda, Focus Group 1)

By ensuring a positive experience the classes developed the digital technology related skill sets of the older adults. Through establishing this safe learning environment, learning was facilitated within older adults due to their perception of self-efficacy. Self-efficacy was also identified in data surrounding trust in digital technology both in terms of reliability, but most importantly for participants in terms of their trust in online activities.

“There's not enough knowledge out there (0.6) as in it it it, they're given who to cross a road and how to drive car but there is no actual place where you can actually pick up general knowledge about computers about safety on it” (Charlotte, Focus Group 1)

“Well I, I would want to know that (0.7) there to, far too intrusive they don-, people will find out things about you which (1.0) which you don't want them to do, you know” (Lakes, Focus Group 2)

With this lack of trust in online activity, data yielded a focus on education for the older adults on this issue. Alongside knowing the functionality of different technologies and

mediums, they also wanted to be taught about the ways to ensure their data, identity, and sharing could be kept secure. This included computer security but also forms of social media and emails (relating to email scams and viruses). For providers it is therefore important to consider delivering best practice to facilitate safety and security of the process or function being explored within the class content.

The older adults talk consistently defined themselves as motivated learners, but ones who were too apprehensive to learn by investigating themselves; they wanted clear direction and then to practice using the digital technology in a safe environment with experts on hand for guidance if they required it. They felt that providing this environment would scaffold their learning and afford them the opportunity to develop their skills in using digital technology.

In summary, the main benefits identified by the older adults of digital inclusion classes were to: increase their confidence of using digital technology by simplifying digital technology to become accessible and demonstrate the potential and relevance of digital technology. Further, an assessment of personal digital technology needs which was scaffolded by providing more advanced digital technology skills was also recognised as important for successful digital inclusion classes.

Discussion

The content analysis revealed that older adults had a wide and varied knowledge of digital technology. However, clear categories emerged with digital technology most frequently defined as computers and telephones which is counter to the earlier findings of Selwyn et al. (2003) who identified telephones, terrestrial television, video recorders/players, and radio as the most frequent forms of technology that older adults engaged with. The increase value associated with computers identified in the current sample may reflect the evolution of the available technology and the increasing digitisation of society. Further, the

participants also defined digital technology according to activities or programmes with a clear cluster emerging of Skype, Facebook, and the Kindle.

The qualitative analysis revealed that the participants had a real thirst for knowledge of digital technology and clearly recognised the many benefits that were afforded by engaging with technology. Part of the motivation for this thirst for knowledge was the recognition that many services and often further information can be accessed through the internet. Whilst this finding reflects the increasing digitisation of society, it also reflects the previous research that reports that many older adults use the internet as a means of finding out further information (Erickson & Johnson, 2011; Hall et al., 2014). However, it was also evident that the participants in our study also used digital technology for a range of functions and were keen to use it to facilitate their hobbies.

Emerging from the focus groups was a second clear theme encapsulating the participants' wish list for digital technology classes and their learning ambitions. The participants clearly articulated a motivation to learn about digital technology but also for sessions to be relevant to their needs and to build their confidence. This finding supports the previous research that has identified the importance of self-efficacy for enhancing engagement with digital technology (Hsu & Chiu, 2004; Igarria & Iivari, 1995) and learning (Chiu & Tsai, 2014). A potential barrier that was identified by participants in their development of self-efficacy was a lack of trust in online activity and concerns about wanting to keep personal data secure. Previous research has identified trust as a key variable in digital technology use (Kelton, Fleischmann, & Wallace, 2008), internet use (Harris, Sillence, & Briggs, 2011; Suh & Han, 2002), and engaging with internet banking activities (Martins, Oliveira, & Popović, 2014) and online purchasing (Escobar-Rodriguez & Carvajal-Trujillo, 2014). Therefore, when designing digital inclusion sessions it is important that providers consider how information pertaining to safety and security can be embedded in to the content.

One of the practicalities of this thirst for knowledge that the participants readily identified was the need to ensure that their training needs for digital technology were met. From the data, it is clear that the participants desired personalised learning on a one-to-one basis. The findings suggest that some of the older adults found group sessions a barrier to engaging with digital technology and this is consistent with the argument that Godfrey and Johnson (2009) advanced that whilst for some older adults digital inclusion sessions facilitate inclusion for other older adults they enhance exclusion. Friemel (2014) also reported that some older adults preferred private learning sessions over professional courses. Therefore, it seems that for digital inclusion sessions to be effective they must be targeted and personalised for the needs of the learner. Parallels were also drawn by the participants between digital inclusion sessions and customer service helpdesks and helplines which were sometimes also regarded as prohibitive encouraging digital inclusion. This finding echoes the recommendations made by Mason et al. (2012) who advocated that companies should include images of older adults successfully using technology.

The findings of the current study have implications for how training on digital technology is delivered to older adults to ensure that it is effective in enhancing both their knowledge of the technology but also their sense of self-efficacy when using the technology. In particular, the findings suggest that areas for providers to consider in their design and delivery of digital inclusion classes include:

- The level at which the group would like to perform
- The level of ability at which the group is currently operating
- The time frame, ensuring that there are plenty of opportunities for covering tasks
- The dissemination of hand outs to the class
- Ensuring the class has the opportunity to complete the tasks as well as having access to the explanation

- To offer an assessment of each learner's digital technology needs
- To ensure that security and trust surrounding online opportunities are covered as well as the functional process of the task

Whilst the current study explored with older adults their perceptions of digital inclusion sessions and overcame some of the limitations associated with quasi-experimental designs and misattribution of causality (Dickinson & Gregor, 2006), the participants in the current study represent a relatively homogenous and self-selecting sample. In particular, it is likely that the sample comprised a number of participants who could be described as 'successful users' (Selwyn et al., 2003). By researching with 'successful users' we can learn what worked in capturing and developing their interest and use in digital technologies. This learning can then be applied to increase interest and decrease attrition of older adults who are not yet successful users. Consequently, future research should try to capture the 'unsuccessful non-users' (Selwyn et al., 2003): Those older adults who have either attempted to engage with digital technology and have not continued or those who have not engaged with digital technology. The participants in our focus groups gave us some insight in to why some individuals may not continue with learning how to use digital technology; specifically, because of reasons associated with the pace, pitch, and level of digital inclusion session delivery. It is also important to be mindful that older adults report having negative attitudes towards so called 'gerontechnologies' that are specifically targeted at older adults and contain stigmatizing images (Wu, Damnée, Kerhervé, Ware, & Rigaud, 2015).

In summary, through the use of qualitative methods, the content analysis found evidence that older adults have knowledge of a wide range of digital technology which extended beyond that identified in previous research (Selwyn et al., 2003). The interpretative phenomenological analysis suggests older adults also recognised the benefits of digital inclusion sessions but recommended that they should be personalised for the individual

learner's needs, accessible, and demonstrate the potential and range of digital technology available to ensure that they are inclusive. Adopting such an approach may go some way to reducing the digital divide.

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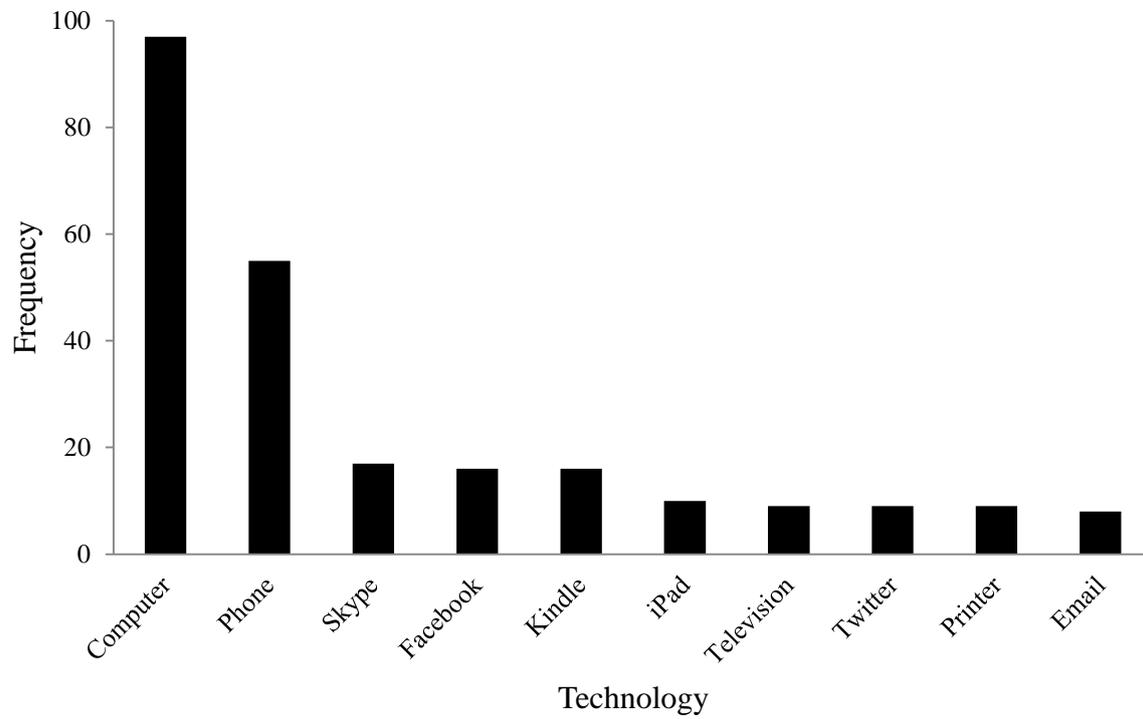


Figure 1: The frequency of technology related words derived from the content analysis of the two focus groups