Leading the Agenda

Everyday technology: A focus group with children, young people and their carers

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1.0 Introduction

Assistive technology is an umbrella term that includes assistive, adaptive, and rehabilitative devices for people with disabilities and also includes the process used in selecting, locating, and using them. These devices improve the quality of life for people with disability through facilitating greater independence and the associated benefits that this brings.

A categorisation scheme sometimes seen in assistive technology literature is ‘low’ verses ‘high ’technology where low technology refers to inexpensive and easy to make devices and high are more difficult, complex and expensive [1].

With the volume production of digital technology, accessibility features are being built into these devices that mean these once ‘high’ assistive technology are everyday items. Technologies such as mobile phones and tablets facilitate use by people with and without disabilities through the embedded accessibility features within them, and the modular aspect to their customisation (e.g. downloading apps).

The aim of this paper is to report on a focus group that explored how children and young people (CYP) with sight loss use everyday technology.

Specifically we aimed to:

- Understand the usage and benefit of everyday technologies and specialised technologies for those with sight loss.
- Identify barriers to adoption of these technologies and how these barriers can be addressed.

2.0 Who attended and how did we do it?

A semi structured focus group outline was used to guide the discussion. The first half of the session asked open questions on everyday technology that the participants come into contact with. The second focused on the new app SeeingAI. This app is specifically designed to support people with sight loss through facilitating orientation with their environment that subsequently leads to greater independence.

Prompts were used to encourage discussion between the participants in the group. The focus group lasted 43 minutes with all members of the group engaged. Carers were able to take part in the discussion but the views of the CYP were the focus (and so we report their demographic information). An outline of the session is shown in appendix A. The session was recorded using detailed note taking.

A total of n=14 children and young (CYP) people attended the focus group. The average age of the group was 11yrs (standard deviation 3.5yrs). There were n=8 boys and n=6 girls. Convenience sampling was used and the participants had all been taking part in a sport activity session prior to the focus group run by Vista's children and young person's team. Carers were present (n=8) and verbal consent was obtained prior to the start of the focus group once a description of the aims and process had been given.

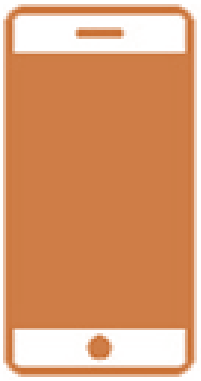
3.0 What did we find?

The results of the focus group are presented in headings that correspond to the guide that was used during the session.

3.1 Technology that is used

The first part of the focus group aimed to understand what participants current perception of technology was. A broad range of technology devices were listed which ranged from assistive daily living devices, through to media platforms that are used for entertainment. The discussion focused on nine items of technology including:

- Mobile phones
- Tablets
- Games consoles
- The internet
- Computers
- Audio books
- Magnifying glasses
- Mobility aids (e.g. stair lifts and scooters)
- Hearing aids



Only magnifying lenses, mobility aids and hearing aids were specifically classed as assistive technologies. When asked how these help, it was repeatedly commented that they help with “independence” allowing members of the group to “go shopping” and carry out day to day activities. Comments were positive overall, but the reliability of the devices were a weakness.

3.2. Do you use digital technologies?

The remaining six technologies were digital. We define digital technology as the practical use of computer devices and systems [2]. The discussion

predominantly focused on tablets and mobile phones, and so we will concentrate on these. The whole group acknowledged that these digital technologies are flexible in their use and offer of multiple application due to the accessibility features built into the software platform. The zoom functions on tablets was very positive along with the ability to change background colours and contrasts. Tablets were commented as most useful, due to screen size. Mobiles phones may not be as commonly used by the group as the mean age was 11yrs. Reading and playing games were activities that participants discussed. Effective use of tablets was given in the school context and how this create inclusive lessons:

[CYP] “In school I can follow the lesson and make the text and work big so I can be with everyone [in the class]”.

Training on effective use of tablets and mobile phones were key. Both CYP and carers made the remarks that it was not clear how to obtain training and that high street shop assistants are often not fully informed as to the needs and requirements of those with sight loss. This was specifically the case for phones where the variety in choice means that there is a need to understand the key features needed to make it accessible to use and suit the users need. Indeed, it was commented that:

[Carer] “There is little to no training on basic use and more is needed to access all the features”.

This is certainly an area where more support is needed, particularly as new technology and improvements in accessibility and functionally emerge. An example of this was that audio description functions on tablets and phones were positive but not all the group were confident in accessing

these and using them correctly. Subsequently there was a lack of uptake in using some of these functions.

3.3. Future technology

When asked about future technology the group revealed an eclectic wish list. Mobile phones or tablets that have a greater range functionality such as thinking (artificial intelligence) were hoped for along with self-driving cars. Industry developments in autonomous vehicles will help shape self-driving cars into a reality and it will be interesting to see how these are made accessible and inclusive for people with sight loss and other disabilities.

4.0 SeeingAI

Microsoft's Seeing AI app [3]**,** helps blind and partially sighted people by narrating the world around them. The app is free and uses artificial intelligence to recognise objects, people and text via a phone or tablet's camera and then describes them to the user.

The app is an ongoing research project from Microsoft**,** and is designed to help people with vision impairments complete everyday tasks and assist with new levels of independence. Because this is one of a number of new tools available for people with sight loss. It was chosen as it is free to access and offers a greater level of intelligence than other similar systems.

The functionality of the app was demonstrated to the group, starting with scene and text recognition. This allowed the group to experience functionality and capability to inform their initial impressions of the app.

4.1. Initial impressions

None of the group [CYP or carers] had heard of the app or seen a similar digital technology. Although all were impressed with the capabilities of the app the initial feedback was that it would only be partly useful. Participants had sight impairment (none were registered severely sight impaired) and the CYP commented that it may not be useful to them specifically. The participants in the group can go about daily living without the level of detail and support that the app provides. Environments where there are low light level and where contrast is reduced were areas where the app would be useful for them.

Participants had concerns with accessing the technology and commented that they “would need to understand how to use a phone properly first”. This is an important point as the ability to effectively use the app is governed by the proficiency of the user with technology. It may be that CYP expect to be able to use technologies with minimal training (learning through trial and error) rather than having tailored training to support the use of such devices. Other concerns included the audio description being loud resulting in other people being able to hear what the app is telling the user, limiting privacy for them.

Carers also offered their views on the app. Although impressed there were concerns with the usability of the app:

[Carer] "…It's ok, but not perfect. It is good for the tech literate and the blind but there needs to be context".

[Carer] "My son is partially sighted and he is able to manage ok so I cannot see the relevance".

Others worried about the need to speak closely to the phone and that this may make the user feel "more vulnerable". Rehabilitation was important. CYP hope there would be a range of technologies that could be used to support daily activities and relying on one device may not be best which is important for effective rehabilitation and habilitation.

Despite these reservations the members of the group who had access to a compatible technology platform said they would explore using the app. A key point to take away is that the digital literacy and confidence of use is a significant component supporting the adoption of new technology and these feeling were echoed in the group during the discussion.

4.2. Similar technology

The adoption of other technologies was explored. Specifically, the Amazon Echo and other voice activated home automation devices were explored, directed by the discussion of the group. Essentially these technologies are smart speakers and the devices connect to a voice-controlled intelligent personal assistant service online. Both CYP and carers commented that these help with independence in the home.

[CYP] "It helps with independence in the home but you need to have confidence in it's answers".

Carers had concerns about privacy and children's security when using the devices, particularly around inadvertently accessing unsuitable services. Clear speech is needed for the systems to work reliably, and this may cause usability issues for people with more complex needs which was picked up in the group.

[Carer] "I do have concerns over where the information is going"

[CYP] "You have to speak clearly or you don't get accurate answers"

5.0 One final question

As a final question the group was asked if they would rather use technology to assist in daily living or rely on their intuition and instinct. Three CYP said they would rely on technology with the remaining 11 stating they would rather rely on intuition and instinct. Indeed, one carer commented that their concern with technology was "that [he] won't develop his own skills" if relying on technology.

Although from a small sample this, along with the comments above, begin to evidence the importance that rehabilitation services have in providing holistic support of the individual and supporting them to learn from the cues and sensory input that they experience for themselves.

6.0 Final remarks

The focus group was successful in capturing the views of CYP towards everyday technology; both technology they use and those that are

emergent. From the results it is apparent that digital technology offers a means to engage in activities independently they may have otherwise required more one to one support (e.g. support in school lessons). More traditional assistive technology like magnifying glasses still have a use and all of the group currently make use of them. What is apparent is the need to improve skills and confidence in using new technology along with effective sign posting to the most appropriate technologies available.

Vista's new digital buddy project is a volunteer-led technology support service to help people with digital skills, offer advice and guidance that meet the needs of the individual, and improve people's confidence. Findings from this report help support the need for this service. Supporting people across age ranges is important along with the support of carers in understanding the capability of technology so on-going support can be provided.

Admittedly this focus group is a small sample of CYP. However, the responses to the final question revealed most would like to rely on intuition and instinct for their independence. We must not view the enhanced capabilities of technology as a substitute for rehabilitating a person with sight loss to use as much of their natural ability as possible. Technology must be enabling and allow the user to feel empowered for it to be fully effective and adopted by people with sight loss.

References

1. Fok, D., Polgar, J. M., Shaw, L., & Jutai, J. W. (2011). Low vision assistive technology device usage and importance in daily occupations. *Work*, *39*(1), 37-48.
2. Oxford English Dictionary. (2018). URL: https://en.oxforddictionaries.com/definition/digital [accessed 20.3.18].
3. Microsoft Seeing AI. (2018). URL: https://www.microsoft.com/en-us/garage/wall-of-fame/seeing-ai/ [accessed 20.3.18].

Appendix A – Focus group discussion schedule

Aim

- To understand the usage and benefit of everyday technologies and specialised technologies for those with sight loss.
- To identify barriers to adoption of these technologies and how these barriers can be addressed.

Guiding questions

- When we talk about technology what comes to mind? What do you think about?
- Tell us what piece of technology do you use most? It can be any technology
    - Why do you use it most?
    - What is good about it?
    - What could be better about it?
- Do you use digital technologies? (e.g. phone, computer, tablet)
    - If so, which is best?
    - Why?
    - What do you use it for?
    - How could you improve it if you could?
- If you could design any piece of technology to help you live more easily or to do things you enjoy what would it be?

[Demonstration of SeeingAI]

- What do you think about this piece of technology? Do you think it would help you?
- What similar things to this might help you?

END.