

Accessible gaming

David Watkins, QToD, provides a helpful insight to an area of interest to many deaf children and young people

A few years ago, the mother of a deaf child came to me with a problem of particular importance. Her child was finding it difficult to hear their friends whilst gaming – not only was their gaming headset not designed to work over their processors but as a result, it was also uncomfortable to use. In addition, whilst the young person could access some of the audio from the game without the headphones, online voice chat was impossible. As the child talked to me about these frustrations during our sessions together, I quickly realised how central gaming was to their social experience. I wanted to find a solution to their technical problems, but as I will explain later, due to a lack of accessibility options at the time I wasn't altogether successful.

You don't have to have any knowledge of video games to recognise that gaming matters to our learners. The UK gaming market in 2023 has been valued at around £7.05 billion. With over three-quarters of all 7–18-year-olds having consistent access to a console and 88% of 16–24-year-olds playing video games¹, accessing video games can pose a challenge for a significant number of the deaf children we support.

Missing out on audio that improves situational awareness during fast-paced online matches can be the fine line between victory and defeat. In which direction should you attack if you can't hear the footsteps of the approaching player? How can you easily discriminate who is saying what and to whom in the group chat when there is no access to lip pattern? Whether it be in the school playground or in the virtual world of competitive gaming, being able to hear your friends matters.

Losing can be profoundly crippling for young gamers, especially when they fail in front of their friends. Not to mention that in the often anonymous world of avatars and usernames, a little under a third of 16–24-year-olds are playing with people they don't know outside of the gaming world². When there is no ability to understand that the person they are playing with is deaf, gamers get easily frustrated with players who are underperforming.

As a non-deaf gamer, who also uses subtitles, I was taken aback this year whilst playing *God of War: Ragnarök* on PlayStation 5 (PS5). Directional indicators suddenly appeared beside the captions to indicate where

off-screen characters were located when speaking. I was captivated by the simplicity of this visual representation of stereo sound. And so, with past experience of how deaf children struggle to access games and gaming technology, I decided to investigate how the accessibility landscape is changing for today's deaf³ gamers.

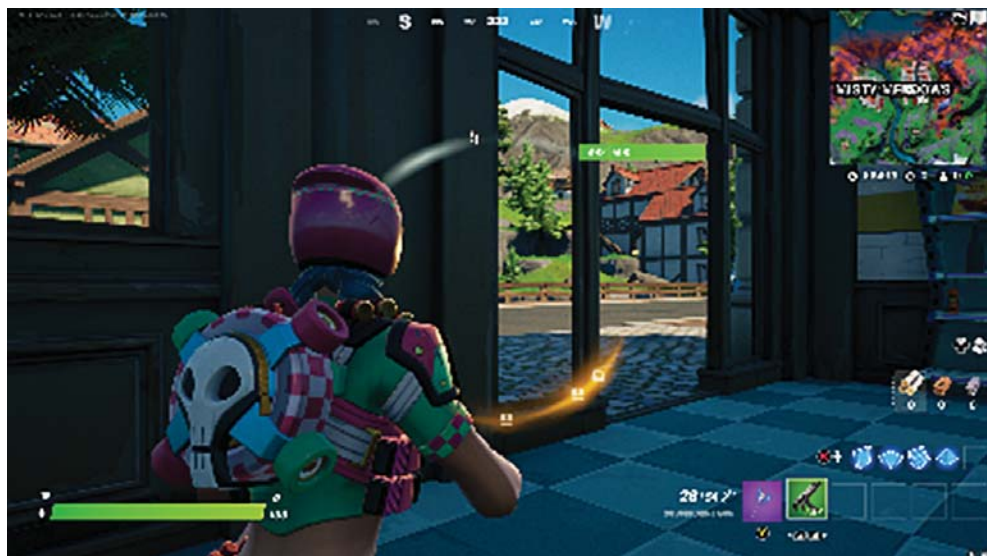
Accessibility

Accessibility in gaming in its most basic form is concerned with making games available to as many people as possible. Early computer games had very little accessibility aside from difficulty levels that made the gameplay easier or harder, encouraging players of all ages and skills to take part. Video game companies later began to develop adaptive hardware to allow gamers with physical disabilities to use and operate controllers. But the increasing sonification of games, where information was conveyed through speech, audio cues and real-time chat, made many games harder to access for those who were deaf or hard of hearing.

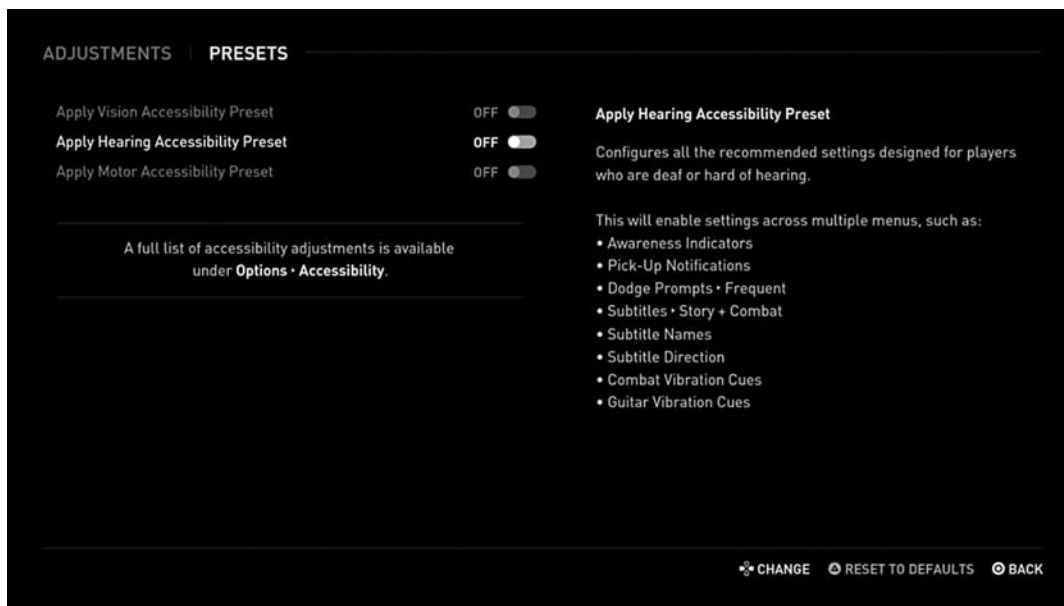
"I have no access to the voice-chat conversation the rest of my team are having over my head", says one Deaf gamer. "A profoundly deaf person has no access to voice chat at all, and someone with moderate hearing loss, like me, will get snatches of conversation, and most of what I hear, I'll probably get wrong."

Many games rely on immersive soundscapes to create tension and atmosphere; the crunching of footsteps on snow, the howl of a creature in the wood, or the creaking of an open door behind the player. Without visual cues that accompany these sounds, the gaming experience can be diminished or confusing.

Chris Robinson is a prominent Deaf advocate speaker for



The direction and threat level of sound is visualised in Epic's Fortnite on a radial indicator. (gamespot.com)



The Last of Us II included a 'Hearing Accessibility Preset' as well as allowing each feature to be individually adjusted. (icanplaythat.com)

gaming accessibility for Deaf and hard of hearing gamers for DeafGamersTV. He consulted on God of War: Ragnarök, a follow up to 2018's hit God of War, and one of the biggest releases of 2022 for PlayStation. He explains how he advised the developer Santa Monica Studios to make its product more inclusive than the original 2018 release.

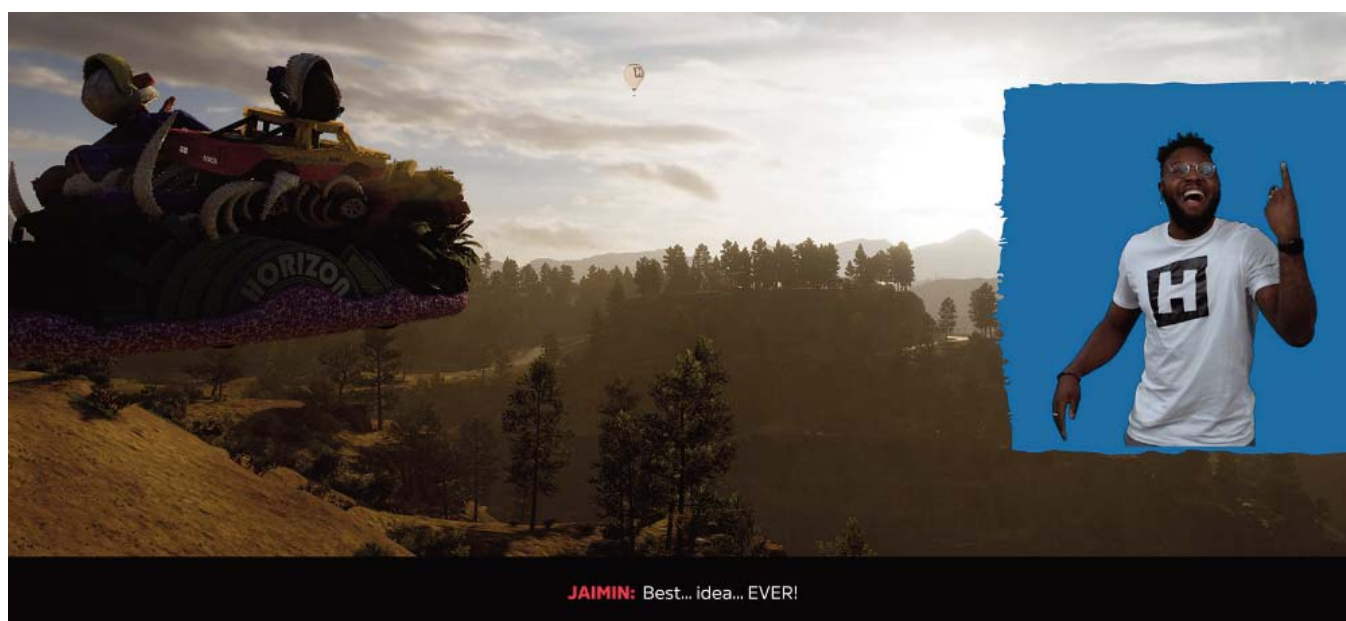
"In the 2018 version the subtitles were very small for my liking and felt like you had to stay up close to your computer monitor to play the game ... So, I suggested bigger subtitles and options to turn on the background so that it doesn't have white fonts over a bright background that'd make it annoying to read ... I always believed having that much control over many options can help try to make the game playable for you".

The seeds of this consultation with the Deaf community

and combat vibration cues. That same year, the game won seven awards at the 2020 Gaming Awards, including 'Game of the Year' and the 'Innovation in Accessibility' award.

Other companies have also invested in improving experiences for deaf gamers. Epic Games introduced visualised sound effects in Fortnite that helped players locate the sources of sound by highlighting areas on a radial around the player. Accessibility features in Apex Legends by Respawn Entertainment enabled one deaf gamer to enjoy his favourite multi-player game again.

"[Apex Legends] has the best deaf accessibility I've seen ... It provides an option to convert voice chat into text, which changes my life. It also has the most comprehensive ping system in the e-sports [electronic sports] world. My teammates can tell me where things are, alert me to



Forza Horizon 5 introduces sign language support throughout in-game scenes – Source (microsoft.com)

enemies, and more – a complete lifesaver for anyone playing without voice chat.”

Despite the growing importance that accessibility has found in the gaming industry, some features can be notoriously difficult for some Deaf gamers to adapt to. If you have tinnitus, playing games without background noise or music can make it worse, and for those who are native signers, subtitles and speech-to-text features are also problematic.

Cameron Akitt, a Teacher of the Deaf and Accessibility Consultant in London, talks of the frustrations he and his Deaf friends have when reading subtitles in games.

“For them, it’s a really tiring experience, not being able to access your first language. We should be able to access the same story beats and narrative components. Otherwise, we’re only getting half the picture and not getting the full experience. Including sign language is about enabling more deaf and hard of hearing people to have ownership over their gaming experience.”⁴

Recently, Playground Games’ Forza Horizon 5 made headlines by offering users American Sign Language (ASL) or British Sign Language (BSL) during in-game cinematics via a picture within picture display.

However, Playground Games are an outlier in this field. An inconsistent use of subtitles stubbornly remains the only option for accessing the speech of characters for the vast majority of signing gamers. For single player, narrative driven games that feature scripted character interactions, there is flexibility for a more imaginative use of subtitles or captioning. In 2020’s Amnesia: Rebirth, Frictional Games used symbols in the subtitles to highlight different modes of speech. When characters spoke their dialogue out loud, the captions looked normal. When characters thought or communicated on radio, then < > were used. In-game sound effects were captioned with the use of asterisks. In addition, the transparency of the subtitles changed according to the distance of the speaker from the player.

In 2023 Naughty Dog returned to the accessibility arena with the The Last of Us Part I for PS5, a remake of the original 2013 title The Last of Us. This time the game included haptic feedback from the newly redesigned PS5 controller during dialogue. Haptic technology uses vibration, force, and motion to stimulate physical sensations. It can also be used to represent sound. “That way,” says Matthew Gallant, Game Director, “a deaf player can feel the way a line is delivered, can feel the emphasis, along with the subtitles to give some sense of how that line is being delivered”.⁵



Hailey, played by actress Natasha Ofili, uses ASL in Insomniac’s “Marvel’s Spider-Man: Miles Morales” video game. (Sony) (latimes.com)

However despite this, written language still can’t quite translate the power of speech as effectively as sign. It can’t convey the emotion, subtlety and depth that sign does. And small accessibility improvements in subtitles can sometimes feed into a misguided assumption by game developers that simply offering better captioning options is a panacea for Deaf accessibility.

There are also current technical issues on some platforms that affect the popularisation of sign support.

Meryl K Evans, a Speaker and Accessibility Marketing Consultant and a cochlear implant user says, “Some virtual reality apps allow the user to sign. It’s not perfect because they have to make sure their headset can see their hands. It will miss out on facial cues and signs that occur around the face.”

Recently games developer Insomniac included a Deaf character (Hailey) who uses ASL, in their critical hits Marvel’s Spider-Man: Miles Morales and Marvel’s Spiderman 2. However, despite other characters in the game using ASL to communicate with Hailey, there was no accessibility option for a signed translation of spoken word for players who use ASL. Visibility does not necessarily equate to accessibility.

Cameron Akitt, who also advised on Forza Horizon 5, feels that part of the problem is how sign support is seen as an accessibility feature of translation rather than one that requires localisation. He points to a lack of infrastructure that could enable a wider application of signed support in games,

“If you wanted to translate a game into French, there are companies you can contract to do that; there is no equivalency, yet, for signed languages.”

In addition, there is also no agreed lexicon of gaming-related signs, something that Cameron hopes to address

with his latest project: a British Sign Language Gaming Glossary (BSLGG).

Hardware and connections

Accessibility features in software need to be matched by improvements to hardware. For the child on my caseload who couldn't hear their friends whilst gaming, subtitles didn't solve the problem of their ill-fitting headphones. And in-game directional indicators didn't stop the degraded and muffled sounds of their friends on voice chat. At the time, the advice to improve their experience of sound was to plug their radio aid transmitter into their console controller using a male-to-male 3.5 mm audio lead. The transmitter then streamed game and chat audio directly into their processors. However, without their headphones, there was still no mic support – and no participation in team chat. This was something so crucial to their gaming experience as to make the workaround pointless. And despite there being an option to use the mic built into the PlayStation camera, at an additional cost of £80, it wasn't cheap.

Nowadays, assistive listening technology connects directly to devices such as phones, laptops, and computer speakers. However, the two major gaming platforms for competitive play, Xbox and PlayStation, still do not offer this functionality in any of their models. As such, access to voice chat for implant and hearing aid users remains tied down to headphones that are designed for non-deaf players.

Body-worn devices that create physical sensations to represent sound cues are just starting to change the way gamers experience what is happening on screen. But their mainstream popularity is hampered by a steep price tag. The Woojer Vest 3 is worn around the shoulders, back, chest, and waist and contains haptic oscillators that vibrate against the skin in accordance with sound. It also costs £634. The smaller Feelbelt' weighs in at just over £200.

As for headsets, some modern variants come with the ability to adjust the frequency of the sound, allowing deaf gamers to boost frequencies of those that they are missing. For users with unilateral deafness, games can feature settings that disable stereo sound. There are even single-sided headphones made up of two speakers that provide stereo sound in one ear.

I contacted the major manufacturers of hearing aids and cochlear implants to ask what their provision was for hardware accessibility. I received replies from Phonak, Oticon, and Advanced Bionics. Each of these

manufacturers advise that hearing aids or processors can be connected to consoles via their proprietary equipment, eg streamers or receivers, and in some cases using additional Bluetooth adapters. Some manufacturers also include settings in the processor to aid use with conventional headphones, for instance, Advanced Bionics have T-Mic Detect, which will automatically detect if the T-Mic is covered or not and route sound accordingly. For details about the various devices and technical workarounds that are offered, please do contact me.

Game on!

Video games rely heavily on sound and hearing to increase immersion. They provide mainstream social contexts in which young people make and develop friendships, increasing self-esteem and developing confidence. Adapting the auditory experience and increasing accessibility of spoken word in games for deaf users can improve the quality of their gaming experience and performance, whilst providing healthy opportunities to socialise. As such, educating our deaf learners on their options for accessible gaming in their leisure time, is as important as making sure that they can hear their friends at school.

As with films, games are subject to age restrictions, which are clearly labelled under the game's title.

Notes

- 1 Online Gaming Statistics 2023 Report – Online Gaming Facts and Stats ([uswitch.com](https://www.uswitch.com))
- 2 Online Gaming Statistics 2023 Report – Online Gaming Facts and Stats ([uswitch.com](https://www.uswitch.com))
- 3 I use 'deaf' to describe any type of hearing loss, and 'Deaf' to describe the Deaf community or an individual who identifies as culturally Deaf.
- 4 Forza Horizon 5 introduces sign language support throughout in-game scenes [Forza-horizon-5-introduces-sign-language-support-throughout-in-game-scenes/](https://www.microsoft.com/en-gb/forza-horizon-5-introduces-sign-language-support-throughout-in-game-scenes/) – Source (microsoft.com)
- 5 The Last of Us Part I: full list of accessibility features [The-last-of-us-part-i-full-list-of-accessibility-features/](https://www.playstation.com/en-gb/news/2023/10/27/the-last-of-us-part-i-accessibility-features/) – PlayStation.Blog



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