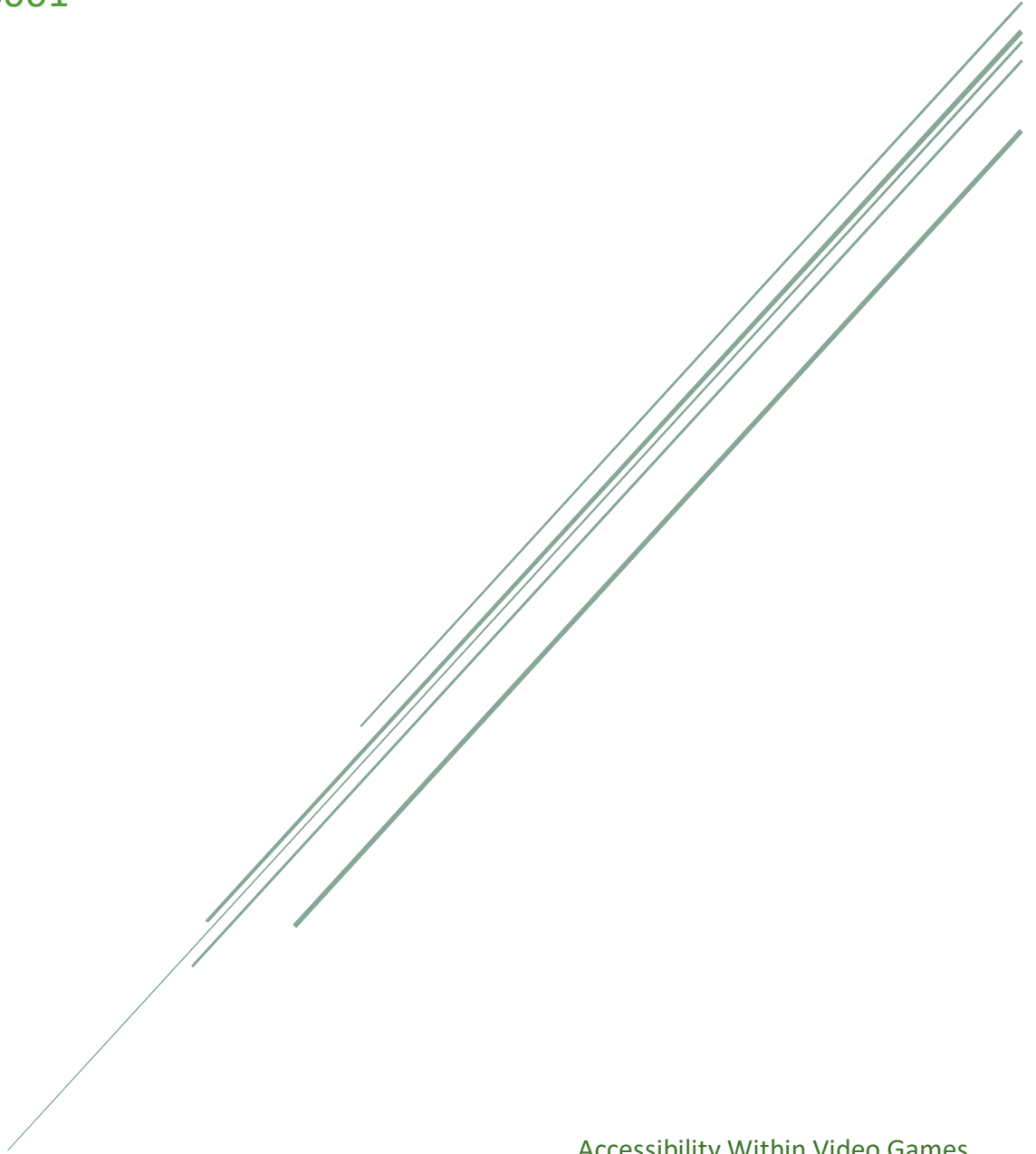


INDEPENDENT INQUIRY

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Accessibility Within Video Games

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ACCESSIBILITY WITHIN VIDEO GAMES

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Abstract

Within this paper there will be research into Accessibility features within Video Games, these features will range from subtitles to audio visualisation to accessibility modes. There will be research across the different types of disabilities that could affect a player, as well as some included features that help with accessing the games. Along side the good, there will be research into the clear disregard for differently abled players and the factors in which this could have happened as well as some of the public's responses.

Language

Within this paper there will be language commonly used within the video games industry, to ease some of the confusion that may occur when reading this document there has been some explanations included within this section.

AAA Title/Game – meaning a large budget, company or corporate game.

AAA Company – meaning a large company or corporate that develops and publishes video games

Map – in reference to a game means the level or stage

Haptic Feedback – in reference to games means the vibrations in the controller based on the action or inputs that react within the game

Visual Cues – in reference to games means the glowing orb or flashing light that tells a player that someone is interactable

First-Person – in reference to a game, this determines how the camera is placed and how the player moves within the space of the level, this would be a point of view camera

Third-Person – in reference to a game also determines how the camera is used, this camera would be positioned behind and slightly above the character allowing the player to see the character while moving them

Remake – in reference to a game is a total start from scratch project to rebuild the original while making improvements

Remaster – in reference to a game is the upgrading of the original material

Inclusivity

What is Inclusivity? Inclusivity as a definition is a wide topic, it can be defined as making informed decisions to include anyone considered marginalised or who could be excluded such as individuals of minority groups like the LGBT+ community or those who have physical or mental disabilities. This could mean any sort of group from wide to small depending on the context making it difficult to use within the aspect of this paper, however there is no better word to explain what is meant within this research.

To specify the use and meaning within this paper, inclusivity is the informed decision to create accessibility options, design choices or increased usability within video games specifically so people with auditory, motor, visual or cognitive impairments are catered for and are not excluded from the experience on offer. The need for this specification is to make sure that the definition best fits the use within the paper as explained earlier, inclusivity encompasses many meanings and uses therefore this clarification is needed.

Accessibility

What is Accessibility? As a wider definition, accessibility is the ease of use, and/or access within different context; although this does not seem to fit within this paper. For clarity when referring to Accessibility for this paper, it will mean; the options within a video game that allow players that would otherwise be excluded the ability to play the game unaided by external sources.

The reason accessibility is needed within video games is the same reason inclusive designs are needed; players who are deaf or hard of hearing cannot understand information solely portrayed through sound design, players who are blind, colour-blind or sight impaired cannot always intake information solely through visuals, physically disabled players cannot always use the intended controls and players with cognitive disabilities cannot always intake information in the same way as abled players. For all these reasons, video game designers need to consider the vast resources to create accessibility options for them not to lose some of their target audience.

Disabilities

Within this section there will be specific types of disabilities, each categorised into a wide banner this is so when the main body of research within industry is talked about there is a clear understanding of what is meant by each definition and category.

Auditory

This category will be focused on those with Auditory impairments meaning disabilities that affect that person's ability to hear sounds and dialogue within a video game.

Deaf and Hard of Hearing

Hearing loss is referred to under four main stages: Mild, Moderate, Sever and Profound. Each of these comes with their own issues when talking in terms of video games. Mild hearing loss would mean issues with whispering, a clock ticking and normal everyday quite background noises. Moderate would refer to the inability to hear everyday environments and following conversation even in a quiet area can be hard work. Sever hearing loss is where things are very difficult to determine sounds, hearing a phone ring or someone talk without fully shouting would be almost impossible however it can sometimes be helped with hearing aids or lip reading. Being profoundly deaf means, they cannot intake any information through audio as it refers to a total lack of hearing.

Visual

This category will contain information on disabilities that affect a person's ability to see critical information in the context of video games.

Colour-blindness

Colour-blindness is the term used to describe a condition which makes it difficult to tell the difference between some hues due to the inability to see a specific chunk of the colour spectrum because one or more of the receptors in the eye is defective. As this can be caused by multiple factors including neurological or physical damage, as a result this can lead to differences between people. There are four main umbrellas of colour-blindness: Deuteranopia, Protanopia, Tritanopia and Achromatopsia; each of these effect different colours being Green, Red, Yellow and Blue, and the full spectrum. Deuteranopia and Protanopia are commonly referred to together as red-green colour-blindness as in practice they look quite similar therefore use the same sort of filter or changes to help these players.

One set of colours that work across the wide spectrum of colour-blindness is blue and orange as they can be seen clearly against each other for people with the three main types, and with brightness and contrast considered it would work for people with achromatopsia as well. One company that utilises this is Nintendo in *Splatoon* (2015) and the sequel *Splatoon 2* (2017); these games are third-person shooters that use a highly colourful ink in a paintball inspired way. Players must work as a team online to cover the map in their own teams' colours, and to reload the player character needs to swim in the ink they have covered the map in. As there are a huge amount of colour combinations it could be very difficult for someone with colour blindness to access the game, however Nintendo has added in a colour-blind mode where it locks the colours on the individual's console.

"Thankfully Splatoon is one game that everyone should be able to enjoy, colour-blind or not. The digital manual for the recently-released Global Testfire demo states that the game will showcase a "Colour Lock" mode which restricts the ink colours in the game to certain combinations, thereby helping people who suffer from colour-blindness." (Damien McFerran, 2015)

Low Vision and Blindness

Low vision is another visual impairment that can affect a player's ability to enjoy a game, especially when design choices are put before accessibility. Making small scrawling fonts for menu systems and subtitles or low contrasting user interface items can make it almost impossible for some players to distinguish important information on screen. "...the use of clear, easy-to-read fonts. Sci-fi screen text or gothic letterpress or handwritten scribbles might fit the game world, but they can be a nightmare to read with low vision, or from a distance. You don't need to take the personality out of the game, thought simply give the players the ability to read the on-screen text in a standard, sans serif font – like in The Awesome Adventures of Captain Spirit." (Mark Brown, 2018)

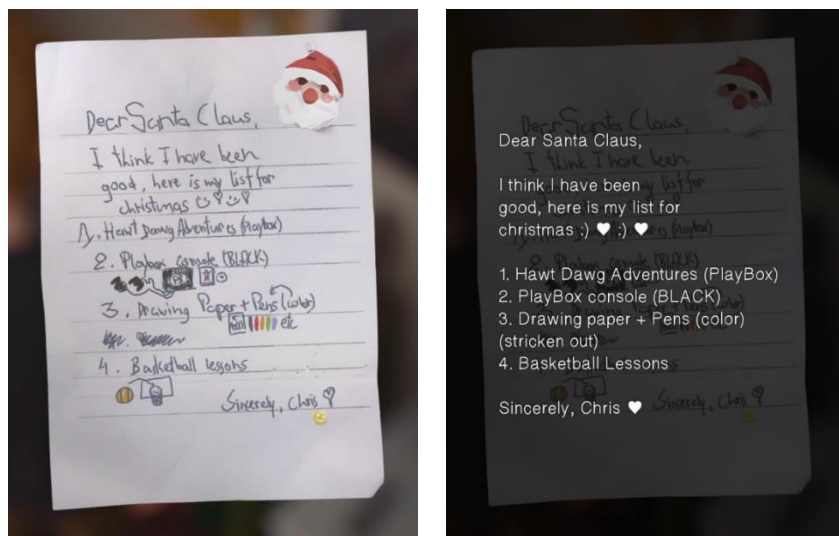


Figure 1

Blindness is the total lack of vision, meaning players who are blind cannot intake any information through visual cues. For blind players this can mean most games are inaccessible as a whole, however one genre stands out as accessible without much need for accessibility options: fighting games. With vivid a soundscape that is detailed covering all important information, and simple environments; fighting games can be played purely through sound.

Physical

Within this category, persons of a motor impairments will be considered when trying to access video games.

Cerebral Palsy

A physical disability is the limitations of a person's physical functions such as stamina, dexterity and mobility. One of these impairments is Cerebral Palsy, which is in itself an umbrella term of permanent movement disorders that can appear in early life, each person can experience these symptoms differently.

Cerebral Palsy can affect gaming through a multitude of issues, with some symptoms being tremors and dexterity issues games without mappable controls can make a game inaccessible as some buttons are not possible to be pressed or held down due to being differently abled. Cerebral Palsy affects as many as "30,000 children" with "incidence rate is around 1 in 400 births" (Pace, accessed 2019) within the United Kingdom, meaning that it is a high contributor to physical disabilities.

Other factors of video games such as haptic feedback in the form of vibrations through the controller can cause major issues for someone with Cerebral Palsy as it can be painful or can make them drop the controller during a crucial moment in the game. Making small modifications to design choices or toggle options within the menu system can make a game accessible for someone with motor impairments whereas else it would be inaccessible without external help.

Cognitive

With this category, cognitive disabilities will be considered when talking about accessibility options within video games.

Dyslexia

Dyslexia can affect gaming when there is dialogue without a visual representation or subtitles and blocks of text without accompanying audio as it can be difficult to understand. This can be viewed as a similar experience of a dyslexic student in a lecture who is shown a text-heavy presentation without the lecturer talking through the information being presented, details will be missed by the student. Although this only one example, dyslexia is an umbrella term for a cognitive impairment and can affect people differently.

Dyslexia is a condition that affects as many as 15 per cent to 20 per cent of the population, according to the International Dyslexia Association. It's a language-based learning disability that involves many different symptoms. While it can't be cured, it can certainly be treated, and the type of treatment an individual receives depends on the kind of dyslexia they're experiencing. (Higuera 2018)

The findings of a report Dr Andrea Facoetti from the University of Padua into the positive affect gaming can have on Dyslexia, which was featured in an article featured on the BBC website: "The researchers found those who had played the video games had better attention skills than before... they were able to read faster without losing any accuracy, the team from the University of Padua reported." (BBC, 2013) this shows a positive impact that video games had on dyslexic individuals.

Inclusive Case Studies

Within this section research into intuitive, useful and creative designs and choices by video game developers to create their game accessible for those differently abled.

ChromaGun (Pixel Maniacs, 2015)

ChromaGun (Pixel Maniacs, 2015) is a first-person shooter that involves puzzle elements; the game requires the player to colourise the walls of the test area with a special gun to complete tasks and puzzles to progress. Some of the puzzle elements include mixing colours the same way in which colour theory is taught to early learners in school.

ChromaGun (Pixel Maniacs, 2015) has a clear inclusive design choice for its colour-blind and arguably cognitive impaired players; to cater for those players a mode had been devised by the developers of *ChromaGun* (Pixel Maniacs, 2015) that uses a clever symbol system; this system allows for someone who has achromatopsia (someone who only sees in greyscale) can even play the game. The symbol system devised shows a clear concise visual representation of colour that allows for primary colour symbols to combine to create secondary colour symbols the same way in which the colour mixing works.



Figure 2

Pixel Maniacs, *ChromaGun's* (Pixel Maniacs, 2015) developers effectively chose to expand its user base by appealing to those that they had originally disregarded; through feedback from the community they were able to make the design decision to include a colour-blind option within the game. "we're effectively cutting out 8% of the world population" (Pixel Maniacs, 2016) this could be interpreted as the developers creating more sales to people that would've otherwise been overlooked the game as it was something inaccessible to them.

Although this case study is on *ChromaGun* (Pixel Mainiacs, 2015) it would be naive to say that this game is the only one to make improvements for those players who are colour-blind, *The Outer Worlds* (Obsidian Entertainment, 2019) is an action role-playing game developed by Obsidian Entertainment and published by Private Division. Obsidian's Designer Director publicly announced that it did not require a colour-blind mode due to the game never solely displaying information through colour. "PSA: The Outer Worlds does not have a colorblind mode because it was designed to be playable without color information. I.e., color information is redundant with other indicators. Tim Cain (one of the directors) has a form of colorblindness that approaches monochromacy." This shows clear thought into the design because there was a person with that disability considered within the design process. Although, *The Outer Worlds* (Obsidian Entertainment, 2019) got this right for its user base, however as stated in a games radar article "Fans of the game responded to Sawyer's tweet celebrating his statement, but couldn't resist mentioning the small font size." Showing that although they helped people with colour-blindness, they maybe didn't consider those with sight loss.

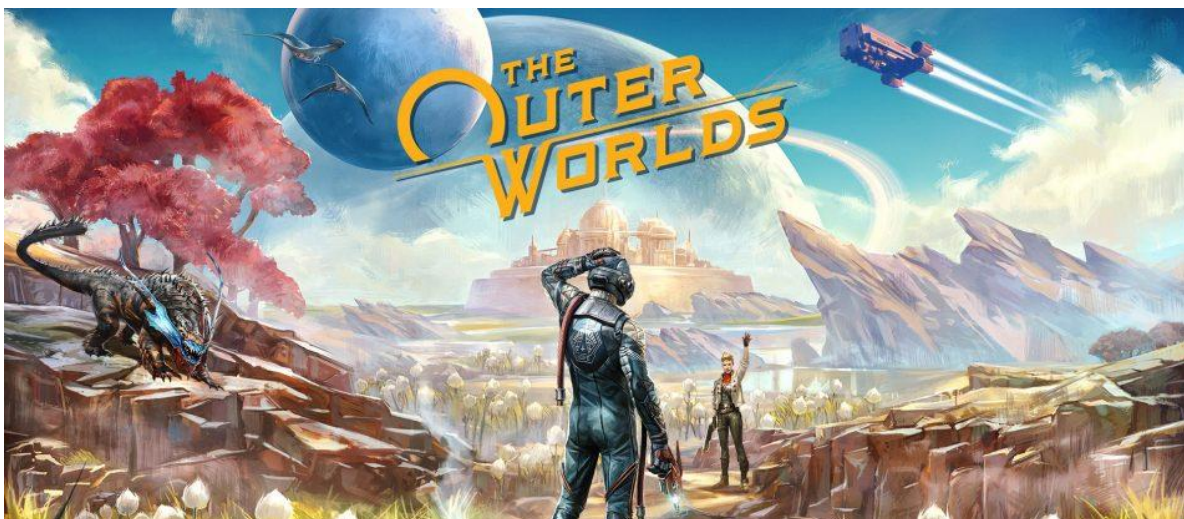


Figure 3

With those responses from fans, it's clear to see that Obsidian understands the need for accessibility options as just over a month after release, it corrected the font size within *The Outer Worlds* (Obsidian Entertainment, 2019). Within Obsidian's 1.1.1.0 patch notes it states "Toggle to increase the font size (found in the UI tab under Settings). Increases font for conversation text, cinematic subtitles, bark subtitles, and terminal text." This shows a clear admiration for their player base and making accessibility options available is one of Obsidian's top priorities.

Fortnite (Epic Games, 2017)



Figure 4

Fortnite (Epic Games, 2017) is an online shooter game that has three distinct game modes: save the world which is a survival cooperative shooter, creative which allows players to create worlds and arenas, and finally battle royal which is a free to play online battle royal where 100 players are dropped into the arena and the last to survive wins. *Fortnite: Battle Royal* (Epic Games, 2017) is the most common game mode as it is free to play, meaning this is where most online players congregate. Fortnite has been developed for many platforms including PlayStation 4, Xbox One and IOS/Android.



Figure 5

Fortnite (Epic Games, 2017) on mobile has an intuitive design for hard of hearing and deaf players, important sound effects are displayed as icons in a ring around the character which allows for clarity around what is happening and where in relation to your character. This has

since been implemented for pc and console players, however, the need to play in silence to turn the mode on seems exclusionary for people that are hard of hearing and just need a little bit of help.



Figure 6

This form of audio visualisation is something hugely needed within an online multiplayer game for those with auditory impairments as it allows those players to stand on equal footing with the information, they are receiving to those that can hear.

“Over and over again, we would criticize the same things. Make your subtitles legible, provide sound captions, size options please, and give us a background option for the text. Most games got one or two things right yet continued to fail at something that made the game a more difficult or vastly different experience for players who rely on subtitles and captioning.” This shows that not all games get it right, and *Fortnite* (Epic Games, 2017) hasn’t completely hit the mark either, with its introduction from mobile to their other platforms to play with this accessibility feature you are required to play the game mute. For hard of hearing players this means that even if they can hear some of the soundscape, to see vital information they may miss is now a choice between straining to hear or playing without any audio.



Figure 7

Another game that has made some needed improvements for sound visualisation is *Minecraft* (Mojang, 2011) with its sound effects being shown at the bottom of the screen with arrows indicating the direction it has started to make its vivid soundscape start to be explained to its hearing-impaired players.

Celeste (Matt Makes Games, 2018)

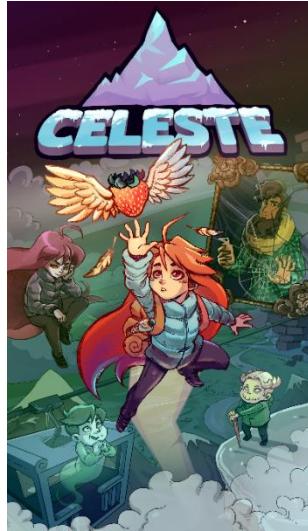


Figure 8

Celeste (Matt Makes Games, 2018) is a 2D platformer game that is narrative-driven with a single-player adventure feel. The playable character Madeline is tasked with climbing to the summit of a mountain while facing hardships caused by her mental health. With its compelling story and easy to learn controls, *Celeste* (Matt Makes Games, 2018) has had good reviews across the board. “Celeste is a surprise masterpiece” 10/10 IGN. The game has been created for many platforms including Nintendo Switch, Xbox One, PlayStation 4 and PC.

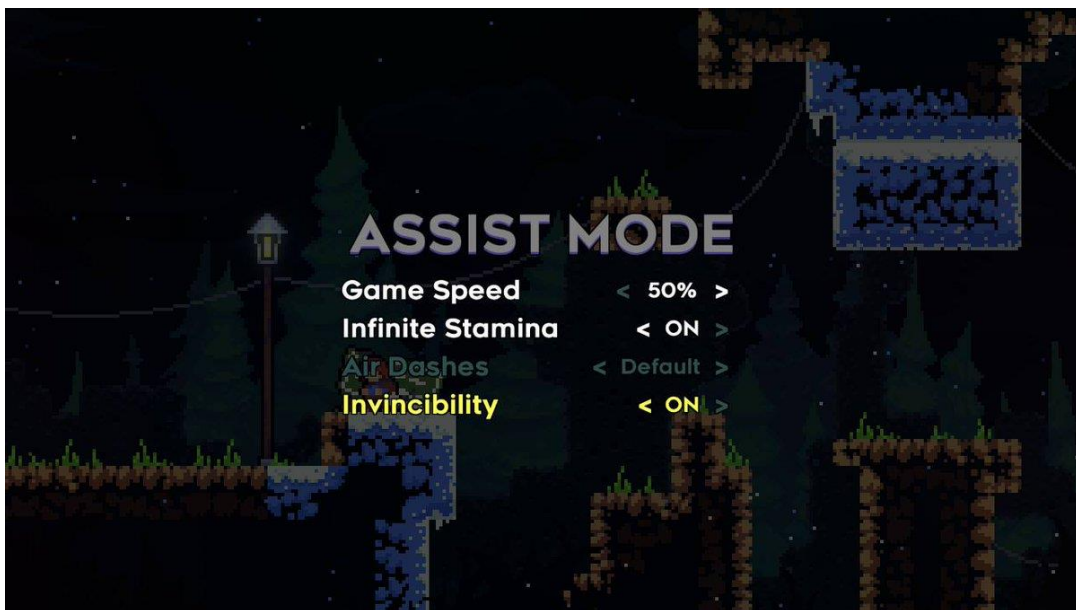


Figure 9

Within the options of *Celeste* (Matt Makes Games, 2018) there is a specific section designed for people with disabilities, to allow them to access parts of the game that would otherwise make it impossible for them to play. When you first load the game it clearly expresses that changing with these options is “not what the developer intended” and that everyone should try to play the game without changing the settings at first. It clearly expresses that the options are for people who physically are prevented from progressing through the game because of disabilities, not for when the game feels difficult and you want an easy time.

Within these options it is easy to see how they could help a magnitude of people, from changing the speed of the game so there is more time to react, to adding infinite amount of stamina to be able to dash continuously; all of these options can help a differently abled player without the need for assistance from someone they rely on.

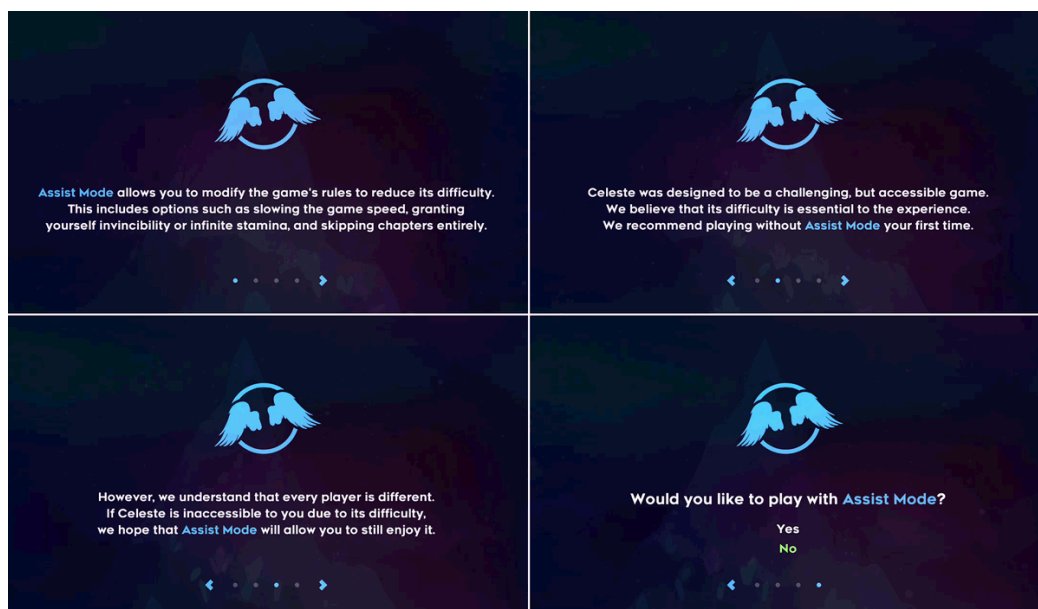


Figure 10

In the Polygon article about *Celeste* (Matt Makes Games, 2018) Allegra Frank states “The game doesn’t actively encourage or discourage these handicaps; there’s a constant reminder to play *Celeste* the first time through without any assistance. But there is also a pleasant sense of acceptance on the part of the developers, who seem to know that this game could push those with a limited amount of time or patience away.” (Allegra Frank, 2018) Although they suggest that these options can be used by those with limited time or patience, it also applies to those who are differently abled. So the clear acceptance that these options are needed and the way in which it is explained to the player is clear that the assist mode is not something to be ashamed of.

Some other titles such as *Wolfenstein: The New Order* (MachineGames, 2014) choose to go out of their way to chastise the player for choosing an easier difficulty. Chastising the player for choosing an easier difficulty because of a disability sounds too much like discrimination, however it seems the developers didn't take into account who would be choosing this option when naming it.



Figure 11

Pokémon Sword and Shield (GameFreak, 2019)



Figure 12

Pokémon Sword and Shield (Game Freak, 2019) are new entries into the long running roleplaying series published by The Pokémon Company and Nintendo. With it being the eighth generation, many fans have been waiting for the next instalment with anticipation, however for those long-time fans with disabilities it was a mixed with some trepidation as with *Pokémon Let's Go Pikachu and Eevee* (Game Freak, 2018), there were forced motion controls.



Figure 13

Although there were issues with the previous entry, *Pokémon Sword and Shield* (Game Freak, 2019) has included casual controls which moves all the controls onto one joy-con meaning players can play one handed. "Casual Controls option doesn't make Pokémon Sword and Shield easier, it does make the game more accessible for those who can't use

both hands to play. Casual Controls mode disables the right analog stick that controls the camera, and the view will adjust automatically toward wherever you are running. Also, it's an easy feature to disable if you want more control.” (Sara Gitikos, 2019) This shows that Game Freak have thought about their audience who would use such accessibility options, the controls seem to be thought out and tested to receive the praise above.



Figure 14

Another game that has implemented one-handed play is *Overland* (Finji, 2016) a small strategy game by Finji which can be played by individual inputs such as a mouse, keyboard or controller. Meaning that it is accessible to those who can only use their motor dexterity in a specific way.

Inaccessible Case Studies

Within this section, the case studies chosen will contain a clear disregard for differently abled players or show that inclusive options and design choices are more of an afterthought or tokenistic effort.

DOOM (id Software, 2016)



Figure 15

Doom (id Software, 2016) is a first-person shooter developed by id software and published by Bethesda Softworks in 2016. With this game being the fourth in the series it marks a Reboot for the story; players take control of the character shooting through waves of enemy forces from hell, it's a fast-paced shooter where the levels are more open-ended.

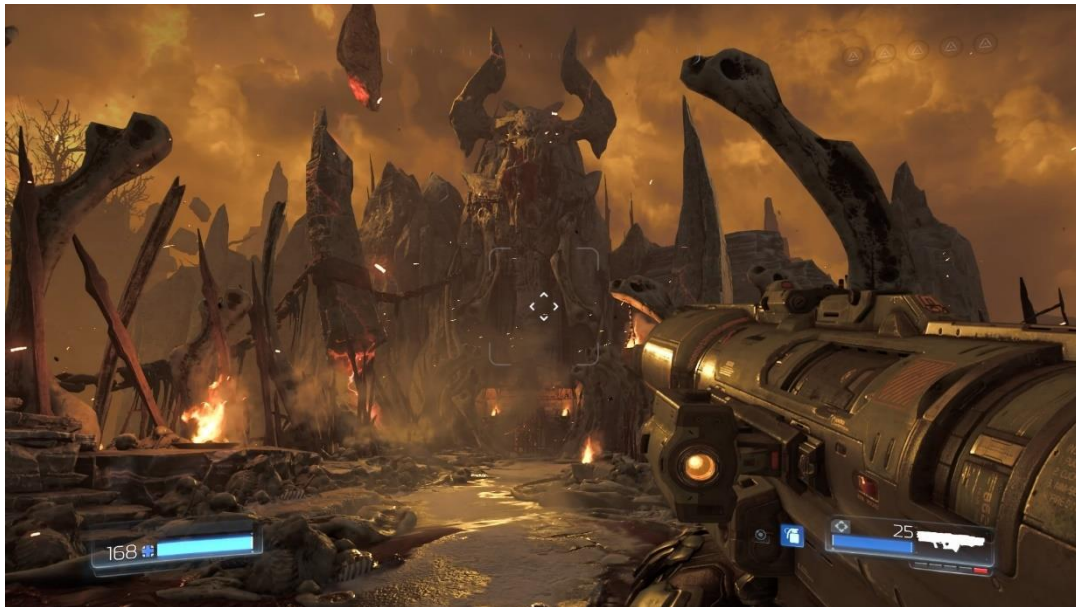


Figure 16

“...Doom, which somehow managed to include a filter that actually simulates the effects of being colour-blind, rather than help them. Chuck on deuteranopia mode, for example, and it just shows you what the game would look like if you had that form of colour-blindness. How this ended up in the final game is beyond me.” (Mark Brown, 2018)

This seems like a huge oversight from the developers and for a AAA Title Game it really shows that it was just included as an afterthought, if the developers had included testing for colour-blind players, this would never been released with this mode.

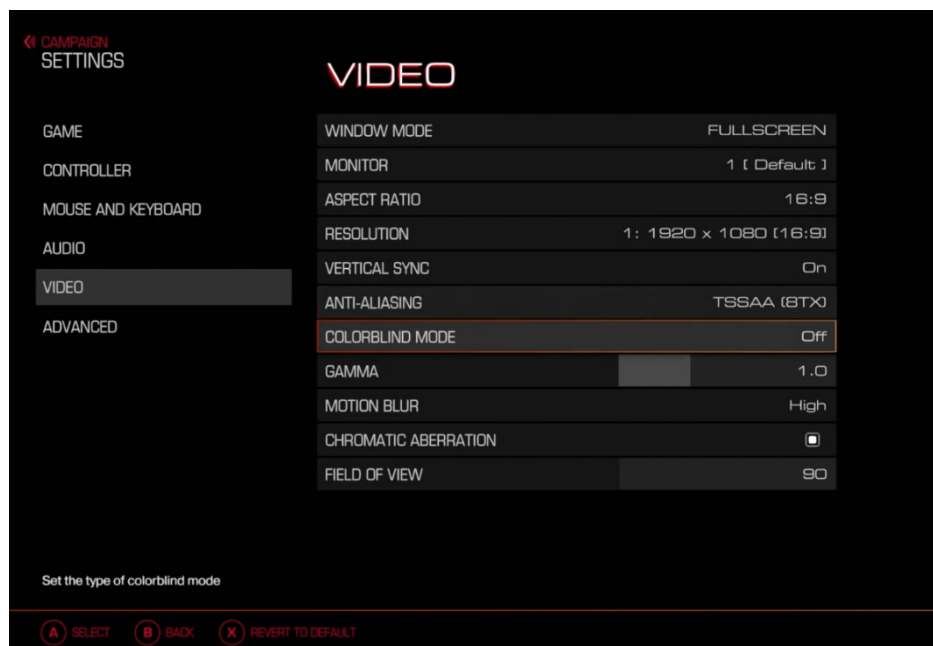


Figure 17

Spyro Reignited Trilogy (Toys For Bob, 2019)



Figure 18

Spyro Reignited Trilogy (Toys For Bob, 2019) is a 3D platform game that includes combat and puzzles. This game is a remaster of the first three games in the Spyro series, *Spyro the Dragon* (Insomniac Games, 1998), *Spyro 2: Ripto's Rage* (Insomniac Games, 1999) and *Spyro: Year of the Dragon* (Insomniac Games, 2000). As this game is a collection of three remasters, it was highly anticipated by its target audience, however on release all major cut-scenes had no subtitles. This meant that hard of hearing and deaf players had major issues when playing through upon the release of the game. In an article on the Game Informer website, Hunter Wolfe expresses "It's taken four months, but developer Toys For Bob is finally adding subtitles to *Spyro Reignited Trilogy*, which were contentiously excluded at launch." (Hunter Wolfe, 2019) This shows a clear disregard for audio impaired players as it took four months for the developers to correct their mistake originally, meaning accessibility is, once again an afterthought.



Figure 19

In the same article Mr Wolfe also iterates the need for subtitles in games and how Spyro had some negative feedback from players when they found out that none had been included in the game.

"Subtitles are a crucial feature that make games more accessible to players with disabilities, so Toys For Bob got some heat (pun intended) from players for its exclusion, stating to British gaming outlet GamePitt that during the process of creating the trilogy, "certain decisions had to be made." (Hunter Wolfe, 2019)

Although there is a clear need for subtitles for hearing impaired players, many people choose to have subtitles on for various reasons such as clarity for dyslexic players when audio information is difficult for them to understand, ease of use for able players and simple preference of using subtitles. In a study by Ubisoft it showed "just over 60% of their players" (Ian Hamilton, 2019) used subtitles when player *Assassins Creed Origins* (Ubisoft, 2017), meaning that subtitles without the thought of accessibility options should be included for the average player.

"Assassins Creed Origins actually tracked usage data on how many of their players played with subtitles turned on and it was average across all platforms, just over 60% of their players" (Ian Hamilton, 2019)



Figure 20

Although video games would clearly be enriched by more and better subtitles, there seems to be a lack of understanding of how to create clear, easy to understand, legible subtitles. In television and applications like Netflix have set rules for subtitles such as large text, clear fonts and easy to digest lines, making it easy to read and understand for people with audio impairments. In the gaming industry, there seems to be a lack of clearly defined rules in terms of how to produce and implement them. Looking at games like *Borderlands 2* (Gearbox Software, 2012), *Metal Gear Solid V: The Phantom Pain* (Kojima Productions, 2015) and *Hellblade: Senua's Sacrifice* (Ninja Theory, 2017), all developed and/or published by AAA companies, however each have issues with clear subtitles.

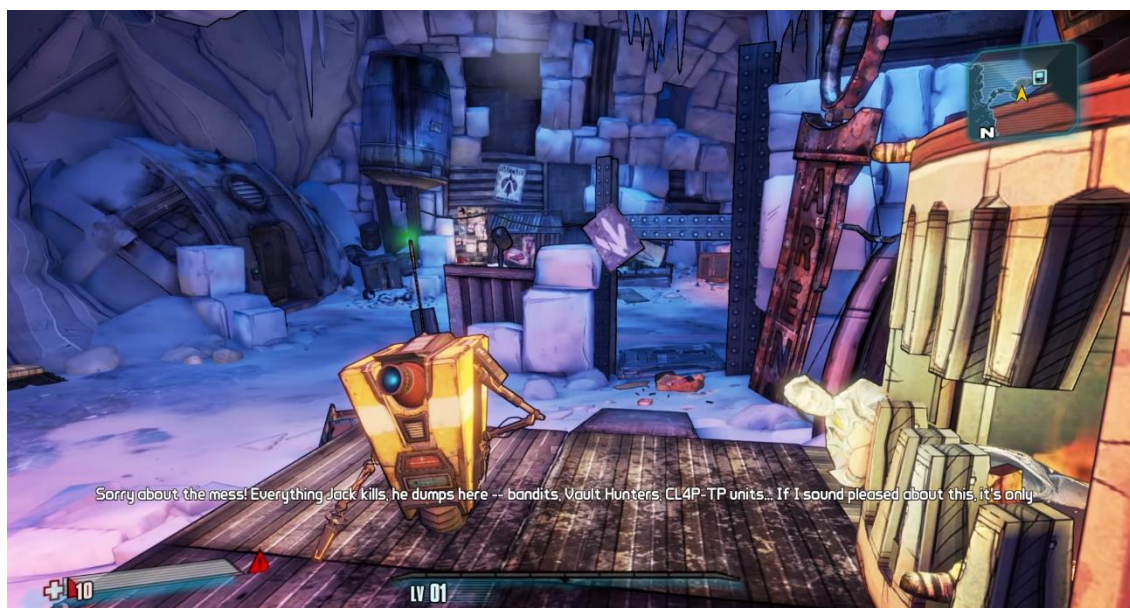


Figure 21

Borderlands 2 (Gearbox Software, 2012) with its paragraph of text that doesn't stand out against the background, with no indication of who is speaking and a design that blends into the background. This can make it almost impossible to read, for those with dyslexia and vision deficiencies.

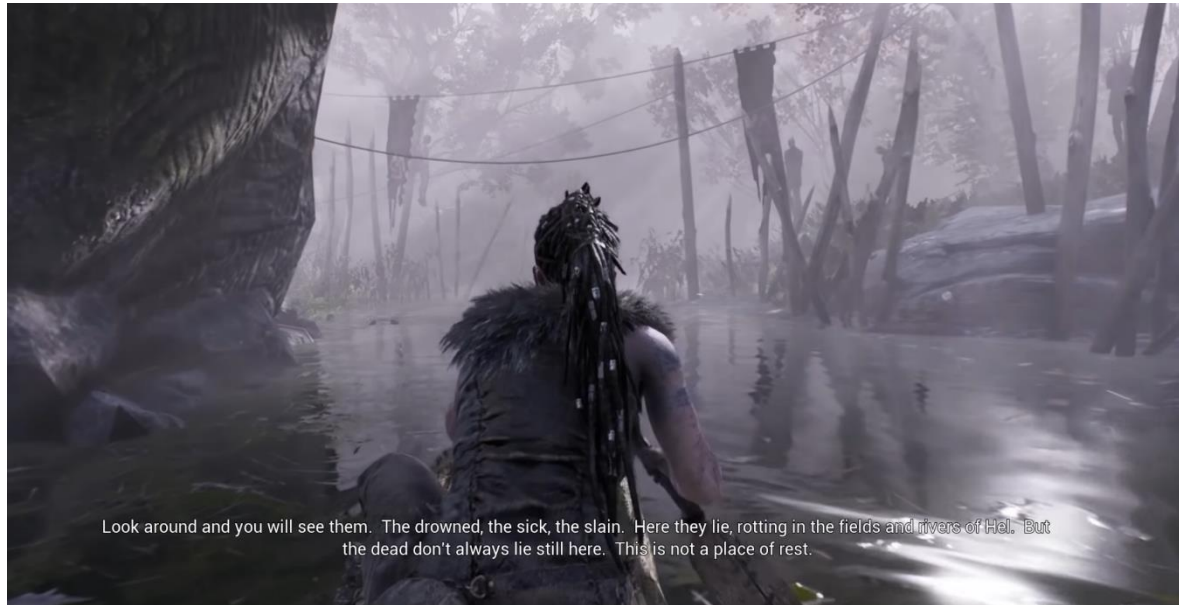


Figure 22

Hellblade: Senua's Sacrifice (Ninja Theory, 2017) with the same issues however the font is quite clear with some parts still blending in with the background, however the main issue here is that the text scrawls across the length of the screen making players read across the entirety when they need to focus on combat or other pressing game play.

Finally, *Metal Gear Solid V: The Phantom Pain* (Kojima Productions, 2015) with its unclear font that makes it difficult to read at the best of times, a clear sans serif font would have been best suited here as explained by Mark Brown "this is not the time to keep up your brand identity, this is the time for clarity" (Mark Brown, 2018)



Figure 23

One way that video game developers could improve their subtitles is by following the BBC, Netflix or movie guidelines when creating their own. This could make a difference to players across the board, not just those with hearing disabilities.

Link's Awakening (Grezzo, 2019)



Figure 24

Link's Awakening (Grezzo, 2019) is a AAA title developed by Grezzo and published by Nintendo; this game is a remake of the Gameboy game of the same title. It is an action-adventure game that uses a top down perspective set in a diorama type world however it does include some side-scrolling platforming sections. The mechanics take inspiration from the original released in 1993 such as, grapple, jump and magic.

With *Link's Awakening* (Grezzo, 2019) being one of the main line series published by Nintendo, it was long expected by fans, however for differently abled players; especially those with motor impairments it could be completely unplayable. To start the game initially the player is required to press "L+R" simultaneously and to some players it can be physically impossible, one video game journalist who specialises in accessibility reviews stated "Unless someone stays by my side after setting up the console, I am physically unable to play. This obnoxious feature is not new, as numerous titles within the Switch library come equipped with this mandatory component" (Grant Stoner, 2019)



Figure 25

This suggests Nintendo's disregard for physically disabled players due to it being impossible to play without help from another person, while a simple fix for this would be to simplify the start screen to one button press it hasn't been implemented. Moving on however, *Link's Awakening* (Grezzo, 2019) only gets worse in terms of accessibility from there; as it has a set control system there is no way to remap important controller inputs meaning that if a required item or mechanic is "Y" then to progress the player needs to press that button. In most other games being released this year, mappable controls are becoming more common and to a lesser extent one handed play options. Such a simple fix that is being utilized by indie and AAA alike was ignored by this publisher making others feel much like how Mr Stoner has eloquently put "As a long-time fan of the Zelda franchise, I was thrilled to jump into a remodelled classic. However, rather than enjoy my time, I left Link's Awakening frustrated, and more importantly, defeated by an inaccessible title." Unless these AAA companies start their own research into these accessibility options and start implementing them, abled players should stand with their differently abled counterparts to allow for an inclusive and enjoyable games, who knows when someone might need them.



Figure 26

Although *Link's Awakening* (Grezzo, 2019) is an inaccessible nightmare to those with motor impairments, it has made leaps and bounds in terms of showing information through more than just colour. With the use of symbols on enemies and specific cracks on floor tiles to show how fragile they are, no information is given solely to the player through colour alone. This allows for players with colour-blindness to traverse the world of *Link's Awakening* (Grezzo, 2019) without the feeling of frustration due to being differently abled.

Staying on the theme of controller remapping, *Resident Evil 2* (Capcom, 2019) offers a few pre-set controller options, although this is more than *Links Awakening* (Grezzo, 2019) as explained by Mark Brown "Not bad, but not good enough." Meaning developers could do more to be accessible for those with motor impairments in the future.

Video Game Industry

As discussed in previously many AAA and indie games have included accessibility options and many have disregarded them, it would be unfair to brand these developers as ignorant. Many factors determine the plausibility of a games development and breaking this down into simplified categories would be cost, plausibility and public reception for all involved within development.

Plausibility

EA Games are a leading games company who has many factors to consider within their games which promote inclusivity “We believe in the potential of every human being. We celebrate diversity of thought, cultural differences, lifestyle, age, background, experience, religion, economic and social status, gender identity and marital status. Building a culture of inclusion allows us to create experiences for our people, culture, and community.” (EA Games, 2019) Although this takes a wide stance on the term of inclusivity for the first time in their game series Sims specifically *Sims 4* (Maxis, 2014) they have included robotic replacements, although this is going into representation territory which is not what this paper is focused on, it shows that developers are considering other factors when being inclusive.

As AAA companies such as EA are including multiple approaches to being inclusive and other indie developers such as Matt Makes Games and Pixel Maniacs it is safe to infer that plausibility for including accessible features is high.

Public Reception

In a recent survey carried out by EA's Global Consumer Insights team, the survey discovered only a small number of players had a negative attitude towards inclusive features, while a far higher number welcomed the inclusivity and 61% were concerned about the 'toxic' environment created by some players within the gaming world. It is suggested that some players have a negative or 'toxic' reaction to inclusivity in games design, which could impact on games designers' decisions to include or prioritise inclusivity in their design features. Jenny Sho of the Global Insights Team is quoted as saying: "While backlash against efforts to be inclusive in gaming can seem loud at times, it comes from a minority of players...These findings should validate and encourage game developers to incorporate inclusive content in their games." (Sho in Sinclair, 2019) "...one-third of men and one-third of women both replied that tackling disruptive behaviour and toxicity would do the trick." (Sinclair, 2019) The report continues with the results from the survey regarding the inclusion of features making the game more accessible to all, stating: "...45 % saying it made them more likely to play a game, 48% saying it had no impact and just 7% saying it made them less likely to play a game." This clearly demonstrates the actual number of people who have no opposition to or are supportive of inclusivity in gaming significantly outnumbers those who do not support it. It would be safe to conclude that developers including accessibility features, designs or options would not bring back bad public reception, it would do quite the opposite with more players being inclined to play their developed games.

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