

Key Words

- Inclusivity
- Needs
- Universal Design

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Proposed question for Independent Inquiry: How can we promote Accessibility as a core component of Computer Games Design?

Introduction

Game Design offers unique challenges to Accessibility. Games by nature require an active participant. This interactive nature means that accessibility options need to cover four broad categories relating to disabilities; Visual, Auditory, Motor and Cognitive. These categories do not necessarily reflect how individual disabilities express themselves but provide groundwork in understanding how design choices in games can impact a player. Currently, true accessibility guidelines for games design are minimal to non-existent. Therefore this proposal will discuss Accessibility in Games through the keywords of Inclusivity, the Needs of the Disabled, and Universal Design.

For people with disabilities, the world is full of invisible barriers that the able-bodied cannot easily see. This is not due to a lack of empathy, but a lack of understanding of how hurdles that have little to no impact on the able-bodied can prevent someone from using a product. From a CODAs (Child Of a Deaf Adult) perspective, the barriers that allow the able-bodied to use a product but prevent the deaf can be much clearer to see. For example, a lack of subtitling and sign language interpretation. Building from this perspective, wider empathy can be given for those who experience other disabilities. People with disabilities are often seen through the lens of what they can't do instead of the opportunity, they pose in developing better designs for all.

Inclusivity

Why is accessibility important? Accessibility allows a product's environment to be inclusive through providing equal access and equal opportunity to people of different abilities. Inclusivity prevents people from feeling restricted by who they are. Video Games are built to reach a wide variety of people so by and large this should ensure that those with disabilities have the means of being able to play through games. Games built to be accessible ensure the player is immersed in the gameplay experience, not in how poor design choices; such as a lack of subtitling, unfriendly colour choices, poor UI and many other features can hold them back.

Accessibility options for Audio, Visual, Physical and Cognitive disabilities also widen the potential market of players. According to the Papworth Trust's 2018 report, there are 13.3 million disabled people living in the UK alone. At roughly 20% of the population, that is a large pool of potential players that developers could be excluding.

As the industry grows more established, the demographic of those who have grown up with games and play into adulthood is steadily growing. Over time, it is likely that older demographics will increasingly play video games. When it comes to digital mediums in general, Mieczkowski and Clarkson (2012) state that "Older people are the most rapidly growing market." This is crucial where accessibility is concerned as while people of all ages can be disabled, disabilities tend to become more common with age. 44% of pension age adults are disabled compared to 18% of working-age adults according to the Papworth Trust (2018).

Able-Bodied individuals could also benefit from improved Accessibility options. Strong support for this can be seen with subtitling options in games. "97% of players in Far Cry: New Dawn didn't turn off the subtitles that were automatically enabled and a similar number can be found in Assassin's Creed Odyssey with 95% of players never turning the subtitles off. In The Division 2, a game that's far less reliant on its narrative, 75% of players turned subtitles on during their time with the game." (Lang, 2019).

These numbers show that the vast majority of players prefer to have subtitling enabled - even if they aren't Deaf. The Benefits for subtitling could help players focus, be able to play the game in a loud environment or even just let them focus on the gameplay rather than dialogue. As a consequence of data like this, the vast majority of recent video game releases now provide some form of subtitling or captions to their player base. The widespread adoption of subtitling in games could suggest that other accessibility features exist which could have wide appeal in games.

Needs

Who do we exclude when we design a product? Often, the first question asked when a product is proposed is who our audience is - The demographic who will want our game or console. Knowing the audience is key to developing an experience they will want to play. However, little initial thought is given to what will exclude someone from being able to play a game or use a console. "Inclusion also needs to be at the heart of the brief, not treated as a separate issue." (Mieczakowski and Clarkson, 2012). Neglecting to consider accessibility early on can hurt the quality of the product. This is due to how more time and money may have to be spent late in the project to develop features that may never be as effective as solutions built into the game from the start.

Colourblind accessibility options can be a good example of this. Colourblindness of any kind causes the individual to struggle distinguishing certain colours from each other. This can be a problem in games design where colour is often used to distinguish important information. Colourblind filters are one option to help with this that can more easily be added late in development. However, filters such as these can fail to distinguish key game elements from each other. Therefore colour filters often do not solve the problem they are built for. However, if considered early on in development; shapes, symbols, contrasting tones, or even smart colour pallet choices can all be used to distinguish key game elements from each other without excluding people with Colourblindness.

For those with Disabilities, Accessibility features need to cater to their needs. If the feature does not allow the player with disabilities to play the game, then it is not useful. A method of ensuring accessibility works for people with disabilities is through asking individuals what features work for them, and what stops them from being able to play a computer game. Knowing what people need from a product, whether through large-scale surveys or one-on-one discussions with disabled individuals is key to developing effective solutions to accessibility problems. Furthermore, knowing what accessibility options and standards already exist elsewhere can allow an understanding of how to put the needs of the disabled into practice. Disability activists, Charities and people working to provide accessibility; such as in official subtitling, should also be considered.

Console Developers have a large responsibility to encourage accessibility. As the makers of the platforms games are played on, Companies such as Microsoft, Sony, and Nintendo have a large influence on what games enter the market. "In many cases, poorly designed technology is not a result of limited understanding or ability among designers and developers, but a lack of company structure that would promote inclusive design." (Mieczakowski and Clarkson, 2012) Therefore, if these companies were to create and enforce accessibility options and standardisations, they could increase their potential market of users, which could have a snowball effect on the rest of the Computer Games Industry.

Furthermore, as console developers, these companies have a direct impact on console designs - From how accessible console designs are, to their interface to whether they support modified and purpose-built controllers. According to Szykman, Gois and Brandão (2015) "A high percentage of the reported limitations in games for rehabilitation, though, refers to the design of the user interface." Therefore it is the responsibility of the console developers to create user interfaces that work for people with disabilities.

Microsoft and Sony have already made some strides to encouraging accessibility from a system level. Both companies allow for console remapping at a system level which allows people with physical or motor disabilities to adjust key inputs to places they can access. "Remappable Controls allow players to move functions around the input device - to a place they can reach more comfortably."- (Game Maker's Toolkit, 2018). This is vital as while remappable controls are common to find on PC Games, it is far rarer to find them in console games. Therefore this stop-gap measure helps cover for games which have neglected to incorporate this feature. Building on from this, Microsoft has also developed the adaptive controller, providing a hub for specialised input devices, which is vital for those who cannot use a traditional controller setup.

While wider adoption of these practices is needed, "Getting past Hardware Barriers can often mean finding more barriers in the games themselves"(Game Maker's Toolkit, 2018). Because of this, games also need to include accessibility features. For example, system-level control remapping "Does not account for things such as different control schemes for different modes or characters" (Game Maker's Toolkit, 2018) and so ideally accessibility features such as this should also be included within game titles themselves. These features need to cover the range of difficulties a player could face that prevent them from being able to play a game. Motor disabilities may require the ability to adjust settings related to reaction times or the bypassing of quick time events. Visual and Auditory disabilities may require information to be conveyed in more than just one way. The ability to adjust the amount of sensory information, such as flashes, could also help those with sensory processing disabilities. The goal of accessibility is to enhance the experience held by the player and so accessibility features in games should reflect this.

Universal Design

Design Principles such as Universal Design can aid in providing a framework for building a product in a way that is Accessible. According to the Irish Disability Act (2005), One definition of Universal Design is the "means, in relation to electronic systems, any electronics-based process of creating products, services or systems so that they may be used by any person." This definition may be vague but fundamentally captures the core of this design principle. Products should be designed as much as is possible so that any person may use it effectively regardless of physical, sensory, cognitive, ability, or disability.

The first principle of universal design is that it must be Equitable. An equitable product is one that is usable and marketable to people of diverse abilities. To this end, Games must be able to provide an identical experience to all players, or at the very least an equitable experience. Players should also not feel excluded or stigmatised for their disability. By allowing a product to be usable by people with a wide range of abilities the game or console becomes marketable to a much broader range of players.

Flexible use is the second principle of universal design. Products that provide a flexible means of use accommodate a wide range of individual preferences and abilities. It allows the user choice and is adaptable to their needs. Difficulty sliders, the ability to adjust the user interface and remappable controls are all examples of how games can encourage flexible use. However, These options can detract from the intended experience. Therefore it is the duty of the designer to communicate effectively the purpose of these modes. Celeste's Assist mode is a good example of this. The mode allows adjustment of difficulty sliders and creator, Matt Thorson, stated that "From my perspective as the game's designer, Assist Mode breaks the game... But ultimately, we want to empower the player and give them a good experience, and sometimes that means letting go." (Klepek, 2018)

The third principle is that products should be Simple and Intuitive. This design principle states that a product should avoid unnecessary complexity. This is to ensure the product is easy to understand and avoids feature creep.

Following on from this is the fourth principle; Perceptible Information. This principle states that features should communicate information in a way that is perceptible to the user. The user should be able to play a game regardless of their sensory abilities or the ambient conditions around them. Subtitling and sound effects are key examples of how games can do this. With good captions and subtitling, a player can understand the gameplay even if they cannot hear or are in a busy room. Conversely, clear sound effects during key moments of a game can aid those who are visually impaired understand what is happening in a game. The core of this principle is that no one method alone should be used to convey important information.

The fifth principle is that there must be a Tolerance for Error. Motion Controls and Quick time events are two areas in games where this principle is extremely necessary for those with motor disabilities. With motion control "If you can't shake the device - or can't stop shaking the device those games just aren't going to work" - (Game Maker's Toolkit, 2018). For a game to have tolerance for error, it must minimize the adverse consequences for accidental or unintentional actions. For any game mechanic that requires fine motor movement, options like adjusting sensitivity, the speed of the on-screen character or avoiding quick-time events entirely can all aid in providing a better experience for the player.

The ability to use a product with Low Physical Effort is the sixth principle. This is to ensure that a product can be used effectively and comfortably while minimising fatigue. Chronic fatigue, physical disabilities and cognitive disabilities can all benefit from these options. If a player is required to be constantly active, or is unable to use a controller in a comfortable position they are more likely to be forced to stop playing due to the discomfort the game or controller is causing. If a player cannot use a product comfortably, then they are likely to not purchase or use it.

Finally, the last principle of Universal design is that appropriate Size and Space for Approach and Use is provided. This design principle focuses on the ergonomics of the product and so is primarily important for console designers to consider. Important design elements should be accessible and visible from a comfortable position. Designs should accommodate a range of sizes and provide adequate use of assist devices, such as specialised control systems.

By building a design around key principles such as universal design, it can enable the designer to think about how a game experience can be improved for the user. Design choices that help those with disabilities are often also easier for able-bodied people to use.

Conclusion

To conclude, It is clear that the Computer Games have several areas in which they can improve regarding accessibility. While being inclusive can widen the potential market of players substantially, accessibility has the potential to benefit all players not just those with disabilities. Accessibility needs to be included from the foundations of a product. This is because accessibility can inform key design considerations that impact the entire gameplay. To provide accessibility that works, the disabled community must be involved in the design and development of a game. Both Computer Games and Console developers need to encourage accessibility in their products. And Finally, Key design principles such as universal design are crucial in developing a framework to approach design. As we have discussed the importance of accessibility, the needs of the disabled community and the frameworks that could exist to develop accessible design, the question this essay then poses is how can we promote Accessibility as a core component of Computer Games Design?

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