Enabled Players: the value of accessible digital games

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Abstract

It is increasingly recognised that there are many players of mainstream digital games who have some form of disability. It is not known which aspects of games are valued by players, regardless of whether they have a disability. We report on a survey of 71 players from the general game community and 123 players with disabilities asking what makes games important to them. We found established motivations to play such as social connection and escapism but additionally that players find games beneficial and provide artistic experiences. Players with disabilities explicitly referred to games helping them to feel enabled or being on a level footing with non-disabled players. The value of accessible games is not just mere play but playing the same games as everyone else. This implies that achieving accessibility through adapting games is an important approach to provide the valued connection and enablement that games provide.

Keywords: Players with Disabilities; Digital Games; Accessible Games; Player Experience

Introduction

A wide variety of digital games are now important sources of entertainment in our cultural media ecosystem and are played by 2.6 billion people worldwide. The population of players now has an average age of 34, over half playing with friends in a multiplayer environment (ESA, 2018). There is an increasing call for games to be inclusive and representative of the broader population of players, including players with disabilities. There is evidence that there are people with disabilities already playing, or who would like to play, mainstream games along with everyone else. Current estimates suggest that there are at least 46 million potential players who identify as having a disability within the US (Power, Cairns, Barlet & Haynes, 2019). This number is based on the US Census and does not account for all of the people who may have a disability, or those who do not identify as having a disability but may still use accessibility options in games.

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Recently, platform manufacturers and game studios are responding to this potential market by adapting both hardware and software to accommodate diversity in players. In 2016, Sony included a broad set of accessibility options in the operating system on their Playstation 4 console and made them available to developers to use in their games. In 2018, Microsoft released the Xbox Adaptive Controller (XAC), a low-cost, commercial branded product designed specifically for players with disabilities to provide flexible ways to control games (Armstrong, 2018). Additionally, Electronic Arts launched an accessibility portal which houses information regarding accessibility options in their games. Accessible gaming is rapidly evolving, prompting a need for a nuanced look at how we ensure games are delivering the accessible player experiences that players value.

Though there have been calls to make all games accessible to all people (Miesenberger, Ossmann, Archambault, Searle & Holzinger, 2008) and it is possible to make universally accessible games (Grammenos, Savidis, Georgalis & Stephanidis, 2006), the industry has largely adopted an approach where players can personalise games using options. However, this is normally where the discussion of accessibility ends: whether the game has a particular option. Moreover, these options are often described in terms of a broad over-arching guideline of what should be included. For game designers, who are aiming to create great experiences for players (Schell, 2008), there is limited information about how to design options in specific games so that they do not disrupt the experiences valued by players. As a community of researchers, practitioners and players, we have very limited fundamental research as to what players value to begin to frame design discussions and to know when and where there is flexibility in the design of options (Beeston, Power, Cairns & Barlet, 2018) Well-designed accessibility options can open a world of experiences for players with disabilities, but a poorly designed set of options could remove the essence of what games are supposed to be, thus removing their value to players.

Understandably, there is substantial interest in what motivates people to play. Players have been asked explicitly, at least in early work, about their motivations, either in focus groups (Sherry, Lucas, Greenberg & Lachlan, 2006) or through discussions (Bartle, 1996), and there is some work aimed at identifying the values embodied in games (Flanagan, Belman, Nissenbaum & Diamond, 2007). However, only a limited amount of work looks explicitly at what players find important and value in games, with such work emphasising only the attributes of games that motivate consumption and purchasing, rather than games as important in themselves (Lin, Lin & Yang 2017). Also, this work has not explicitly represented players with disabilities. There is therefore a gap in knowledge, both about the what players value in games and, to take a third wave approach to Human-Computer Interaction (HCI) (Harrison, Sengers & Tatar, 2011) what are the distinct values of players with disabilities.

Therefore, the aim of this work is to broaden the understanding of what players value in games and what makes games important to players. We asked players, both with and without known disabilities why gaming was important to them. Naturally, some players referenced motivations similar to those found in previous studies, but we also found three new distinct aspects that

were important to players from both pools. Additionally, the players with disabilities placed an explicit importance on becoming enabled through games. They feel that digital games allow them to be on an equal footing with others, irrespective of disability. This is distinct from the escapism that games can offer to all players which provides a further drive for making games accessible. Games can make players with disabilities feel equal in a major part of modern culture. Moreover, that this distinctive group of players agreed with the other ways in which games were important, suggests that they are not looking for, bespoke or niche games but to engage in the same games as everyone else.

Background

To ask about what makes games important is to ask what people value about games (Friedman, Kahn, Borning & Huldtgren, 2013). There has been long-term recognition in HCI that values are important to consider in interactive systems, particularly in relation to designing to reify values in the interaction (Cockton, 2004). This has been called value-centred design, but also value-sensitive design (Borning & Muller, 2012). However, it is recognised that values are not easily defined and can move from what is simply important to people to something more like moral or ethical expectations and principles (Shilton et al., 2018). For our purposes, the importance of games is from the perspective of users and what the players themselves considered to be important. This fits with Kujala & Väänänen-Vainio-Mattila (2009)'s perspective of user values. They list a framework of overarching psychological values of which, the main categories are:

- Social, including relatedness, control, power, status and achievement
- Emotional, including fun, pleasure and other affective states
- Stimulation, including excitement, novelty and gaining knowledge
- Self-actualisation, including creativity and independent thought and action
- Traditional values, including respect, following customs and practices
- Safety values, including security, health, comfort
- Universal values, including tolerance and the welfare of people and nature

When and where these values are evoked depends of course on the system that people are using but is not clear which, if any, of these values are reified in digital games.

Players' values

In the context of games, Barr, Noble & Biddle (2007) identified that games were not amenable to analysis from a task-oriented view in the way that HCI traditionally analysed productivity systems. Instead, games and the interaction they require from players embody a set of values which the players must embrace to play and succeed in the game. For example, many games have a core value of "aggression" and it is only by engaging with such games through an aggressive style, like shooting enemies before they shoot you, can a player succeed and continue to play. Any non-aggressive style of play in such games makes surviving and hence actually playing the game nearly impossible. Some games, such as role-playing games, allow a diversity of styles of play by deliberately exposing a range of potential values, such as "aggression" or "healing others".

Values, therefore, offer a way of thinking about actions in games which can be used explicitly as driving their design. This was the goal of the Values At Play (VAP) project (Flanagan et al., 2007) where designers were encouraged to consider their own values and to make explicit values which they wished to design into their games. Design cards provided a common language and starting point from which to evaluate the cultural and social interpretation of the game interaction.

Both of these perspectives on games are focused on a specific game which is either being evaluated or being designed and, although they both recognise that the values belong to the players and designers, it is the game that players must engage with. Lin & Lin (2011) however, approached MMORPGs from the perspective of what players value in games. They drew on the view that values are what drive players to consume or purchase a game. Building on this work, they considered games more widely on three different platforms, mobile, console and computer/PC (Lin et al., 2017). They arrived at four core values that motivated players consumption of games across these platforms:

- Warm relationships with others
- Sense of accomplishment
- Sense of belonging
- Fun and enjoyment of life

It is worth noting that the first three of these come under the Social values of Kujala & Väänänen-Vainio-Mattila (2009).

The implication in these studies is that there is a purpose behind the values that drive players to purchase and consume games. But not all values necessarily have a purpose and may simply be ends in themselves that do not lend themselves to a possible marketing edge.

Players' motivations

What players find important may not only be articulated as values but also be made evident through their motivations to play. Understandably, there has been substantial interest in what motivates so many people to play and to play such a lot. In particular, Yee (2006) building on earlier work of Bartle (1996), found that player motivations in *World of Warcraft (WoW)* fell broadly across three independent dimensions of Achievement, Immersion and Social.

Sherry et al. (2006) looked to identify player motivations from the perspective of uses and gratifications. This approach recognises the media, genre and culturally specific nature of people's motivations and therefore resonates with our approach in recognising that the context of playing as a person with a disability may lead to different motivations to play. Through a set of focus groups with young American adults, Sherry et al. (2006) arrived at six dominant dimensions of game use. Not surprisingly, these include the three dimensions of Yee (2006) but also that some players are motivated to play to relax, to ease stress (in the colloquial sense) and to simply pass time. This last point is not so much a motivation to play games but a lack of

motivation to do anything else! Conversely, another use they found was to bring about emotional intensity or arousal through the fun and stimulation that games provide.

Both approaches take an essentially bottom up approach starting with players of games and finding out how they can account for why they play. Another dominant approach to player motivation in digital games is the application of a distinct theory of motivation, self-determination theory (SDT), applied to games (Przybylski, Rigby & Ryan 2010). Within self-determination theory, people are intrinsically motivated to act to address three fundamental needs:

- Autonomy: the need for personal agency under voluntary control
- Competence: the need to feel effective
- Relatedness: the need to be connected to other people

There is a plausible argument that modern digital games provide for these needs *en masse* (Rigby & Ryan, 2011) which is why people play games. Furthermore, that games can provide for people's psychological needs means they should also bring about improvements in players' wellbeing and mental health. However, while players may play to fulfil a need, this happens within a social context and in relation to the content of the games as well.

To incorporate situational factors, de Grove, Cauberghe & Van Looy (2014) proposed to use Social Cognitive Theory (SCT) to frame investigating player motivations. This approach not only considered outcomes internal to the game, but also external outcomes and it further allows for the fact that, over time, playing digital games can become a habit. Interviews with players led to the identification of 9 outcomes that consciously motivated players to play along with habit as a less conscious motivation. The 10 distinct dimensions are therefore:

- Performance: achieving, possibly personal, goals in the games
- Agency: acting according to player's own preferences
- Status: gaining respect from others
- Sociability: non-competitive social interactions arising from play
- Believability: coherence and believability of the game world often through attention to detail
- Involvement: becoming involved in the narrative or characters in the game
- Escapism: leaving behind the real world and doing what may not even be possible in the real world
- Moral self-reaction: contrasting in-game norms with own real-world norms
- Pastime: killing time by playing
- Habit: starting to play without really thinking about it

As a set, these motivations conceptually encompass the motivations derived in the other approaches and the core values identified by Lin et al. (2017).

Summary

Regardless of the approach taken to determine what makes games important to players, there seem to be some persistent themes. Socialising through and around games is clearly a very important motivation, as is the sense of achievement and effectiveness. Moreover, these are seen

as values that players espouse specifically in the context of games and are also part of the more general framework of user values.

Games can draw people away from the real world and into a new and different world where they can do what they want, to some extent. Furthermore, people have a habit of playing: a player may play as much as someone else might read books. These motivations are not seen in the values as such, whether game specific or more general. Conversely, some values such as traditional values and self-actualization are not seen in the motivations to play. It may be that games cannot offer fulfilment of such values or that they simply are not motivations to play.

Whether the importance of games derives from values or motivations, both approaches emphasise the need to consider the context in which people are playing (de Grove et al. 2014; Kujala & Väänänen-Vainio-Mattila, 2009). Players' culture, environment and social norms influence why they play and to understand the importance of play we need to address the potential plurality of values as we look at different cohorts of players (Harrison et al., 2011).

Methods

The aim of this study was to identify the values that players place in games. When thinking about adapting games for players with disabilities, we wanted to identify what aspects of games were more important to retain across such adaptations in order to maintain their value. As values in games have not been explicitly considered in this way at all before, we decided to ask both players with disabilities and those without disabilities disclosed to us at the time of the engagement about what they find important in games. This was for two reasons. First, as there is no clear framing of the value that players generally find in games, this would be a useful contribution itself. Secondly, if we were only to find the values of players with disabilities, there is a risk that somehow the values would then be considered special to that cohort and used to emphasise their difference or "otherness" from players more generally. In understanding the different contexts of people, it is important to remember not only the ways in which people differ but also the ways in which they are similar despite their contexts.

Accessing people's values can be difficult. The previous research into player motivations used a range of methods including interviews, focus groups and closed surveys targeting specific pre-established facets of player motivations. A closed survey seemed inappropriate in this context because we have no established basis for what players might find important in games. This suggests interviews and focus groups could be useful but, firstly, there is a real challenge of identifying players with disabilities within a reasonable geographic area to attend such sessions. Secondly, disability covers a range of conditions and situations and we wanted to reach a large number of players to provide confidence in representing a diverse but distinct population of players.

To this end, we adopted an open survey approach. We recruited participants in two ways. Players with disabilities were recruited through the AbleGamers Charity Player Panels (Beeston

et at., 2018). In volunteering to become part of the panels, players sign up to be approached to take part in research around digital games, whether from the games industry or elsewhere. Secondly, a broad group of players without disabilities disclosed to us at the time of engagement were recruited from attendees at the PAX East 2018 games festival. These were intended to be representative of the broader player community, though they might therefore be expected to include players with disabilities. The point of the festival is to engage in activities that contribute to the wider community of players and games. Therefore, there were many people who could be approached to respond to the survey.

Survey content

The survey asked two open questions "Why is gaming important to you?" and "Why is gaming important to community?". It is the analysis of the first question that is reported here. The question was deliberately intended to admit a broad interpretation so that respondents could bring out any aspect of games or importance that they felt appropriate. The hope was to elicit the underpinning values that led people to find games important rather than to focus on particular games or aspects of playing.

Procedure

The two groups of participants were recruited in different ways. The participants from the Player Panels were first pre-recruited via The AbleGamers Charity to take part in an online survey. This consisted of the survey itself and a second part which was a player experience questionnaire made up of 30 closed Likert items. The player experience items were about the felt experience of uncertainty while playing (Power, Cairns, Denisova, Papaioannou & Gultom, 2018), and unrelated to player values. Those who agreed to take part were sent a link to an online questionnaire. The online survey was left open for two weeks after which it was closed and those who took part were entered into a draw for 20 Steam vouchers worth £20 each. Demographic information was obtained via the Player Panels.

The participants at the PAX East festival were opportunely recruited as they circulated through the exhibition hall. They were asked the two survey questions with their answers recorded on video. Because of the public nature of the venue, they were not asked to provide demographic information.

All data collected formally belongs to The AbleGamers Charity and was covered for use in this research by the agreement between AbleGamers and the participants. The use and analysis of this data was approved under the ethical governance of the University of York.

Participants

We elicited 123 responses from the Player Panels of which 122 had provided answers to the first open question. These respondents had a mean (standard deviation) age of 32 (7.8) years and had been playing games for 24 (8.2) years. There were 33 women and 76 men with the remaining 13 not identifying as either or not wishing to say. Respondents classified themselves as having a wide-range of disabilities: hearing loss (18), sight loss (24), cognitive or learning

disabilities (32), disability due to mental health (37), lower limb disability (65) or upper limb disability (72). Many, over 80, had multiple classes of disabilities.

For the PAX East participants, 71 people volunteered to respond to the survey. Though we do not have formal demographics, the videos show that the respondents were mostly young adults (18-30) with North American accents. There was no obvious gender bias.

Method of analysis

The videos were transcribed and near verbatim notes were made into Microsoft Excel, omitting only linguistic markers ("you know" and "like") and dysfluencies (tripped words, hesitations etc).

Because the goal was to identify what makes games important to players, thematic analysis was used to provide a descriptive account of the concepts represented in the data (Braun & Clarke, 2006). The initial analysis was done by the first author. After an initial review, open coding was conducted on the Player Panels data to produce a tentative set of codes that could be applied to all the data. These were then aggregated into more consistent codes and a coding dictionary was drawn up for them. The PAX data was then reviewed, and these codes applied to that data. This revealed that some of the codes had ambiguous definitions or lacked a unifying coherence and the codes were reorganised to give 11 revised codes.

The second author reviewed the codes both in terms of relevance to the data and to identify potential omissions in the analysis. This led to the addition of one further code that was only present in the PAX data. The second author also highlighted how some of the codes were about the nuance or emphasis that people placed on the importance of games. Where codes differed in this way, they naturally suggested themes and combining codes led to the final set of 8 themes that were applicable to almost all the data. Only one response of "Not so much" was excluded as it could not contribute to the goals of this study.

Reflexivity

We are aware of the risk that doing research with players with disabilities could be seen as persisting a notion of disability as a tragedy or even oppression (Stone & Priestley, 1996). However, we strive towards Stone & Priestley's principles of emancipatory research. We aim to hear and present the voices of players with disabilities without attempting to claim a privileged position as academic researchers. Indeed, our research is integrated with the aims of an organisation run by and for people with disabilities, some of whom are authors on this paper.

Results

Across the Player Panels and the PAX participants, there were 8 themes that emerged in their accounts of why gaming was important to them:

- Connecting: a way of bringing people together both as friends and family but also to build communities.
- Diverting: a distraction from problems and a way to relax and unwind from day-to-day stresses and to enter different worlds.
- Beneficial: playing games can bring about benefits to players outside of the world such as developing skills or learning about the world.
- Art: games are of intrinsic value to players because they are a form of creative expression for both developers and players.
- Fun: games are to be enjoyed.
- A way of life: players play games because that's something that they have always done and always want to do.
- Universal: players felt that games have something for everyone.
- Enabling: for the players with disabilities games were a way to be on an equal footing with everyone else.

The Universal theme was only expressed by the PAX participants and the Enabling theme was very common amongst the Player Panel participants. For the PAX participants, Enabling was much less common and when it did occur it mostly referred to a disability the participants said that they had.

Below, we outline the themes in more detail and, where appropriate highlight the overlap with existing descriptions of player motivations or values. Quotes will be attributed with a unique ID for each participant where PAXn means a participant from the PAX festival and PPn a participant from the Player Panels online survey.

Connecting

In common with all the previous work on player motivations and values, players wanting to socialise or connect with other people through games was a very commonly occurring theme across our participants. Sometimes this was simply expressed as "meeting new people" (PP7) or a "way to connect with other people" (PAX68). Some would give more about how the connection came about through common purpose in the game:

"Gaming is important to me because I am able play and connect with friends and family." (PP22)

"It gives me both an opportunity to be social, and an environment in which I find being social with other people much easier." (PP122)

"Played constantly with 3 brothers. That's [all] they did. Bonded. Played constantly." (PAX20)

Some people have bigger views and use the term community to represent the connection with others, implying a greater depth to the sense of connection:

“For me, gaming is a jumping off point for social relationships between myself and others who might enjoy the same game.” (PP105)

“Because of the communities that they create […] it's the shared experience that you gain through playing a game. Through playing, like, a really intimate experience that you can only really get with the games that brings people together.” (PAX64)

Diverting

Games were very important to players to help them “relax”, “de-stress” and “let off steam.” This however contrasts to de Grove et al.'s notion of Pastime which was to kill time or Sherry & Lucas's sense of avoiding stress by playing. Here, playing games was important because that de-stressing was valuable. Some players specifically referenced it helping to deal with stress or anxiety:

“[It] helps me wind down after a hard day's work” (PP38)

“When I'm feeling anxious or nervous, I play video games for stress relief.” (PAX59)

And games were also a distraction from everyday life or problems, “an outlet to escape the real world full of adulting” (PAX17)

In some cases, particularly for some of the players with disabilities, this theme captured opportunities to provide outlets when constraints of the real world prevent participation in other endeavours, and in some cases the distraction was from more serious problems such as persistent pain:

“Gaming takes my mind off of stuff, for example being trapped in a wheelchair.” (PP32)

“Allows travel to different world that extra-nice [sic] when it is hard to go out in real life. Relieves sameness of sitting in a chair all day.” (PP36)

“My mobility is often restricted by my disability and sometimes I am in a lot of pain. Gaming provides an escape if even for a few hours. Through games I can explore different worlds, meet different people and experience different ways of thinking, even when I am stuck inside.” (PP46)

As seen in this last quote, for some players, the diversion was not just away from a real-world issue but actively towards the new worlds and activities that games can offer, and as another player aptly put it: “the chance to live another reality” (PP47). This is often expressed in terms of the stories that games tell and comparisons are made with books or movies.

It would be easy to frame the above quotes as someone attempting to escape their disability or erase that part of themselves in games when they cannot in real life. However, this theme is present in the PAX group as well, for example:

"Gives people a way to explore places they've never been without having leave their own eg snowed in, can't leave house, too young to explore everything." (PAX 31)

"They're some other world you can jump into and allow you to experience many different lives that you would never be able to experience in the real world." (PAX62)

As a result, we believe the aspects of Diversion to be shared values among the broader gaming population, and reflects common motivations seen in the previous studies such as Exploration, Fantasy, Escapism and Competence.

Beneficial

As well as presenting a diverting alternative to problems in the real world, participants also felt playing games could be of specific benefit for real world matters. Games are referenced as a way of learning or a form of education, sometimes generically but also specifically:

"They help me work on my problem-solving skills." (PAX2)

For players with disabilities, some of these skills were needed to overcome or counteract effects of their disability for instance as "a way to improve my fine motor skills" (PP87) or, for one participant with multiple sclerosis, helping "my memory and cognitive function" (PP5). Several of the PP participants also mentioned that games helped with pain. It was not clear how games specifically helped though a small number mentioned distraction.

Games also broaden people's horizons both culturally:

"I started studying English when I was a child and now I'm studying Japanese because of games." (PP56)

"[Games are a] really safe place to explore different facets of yourself and different elements of life that you wouldn't normally do." (PP12)

Such broader educational possibilities of games resonate with Gee's view of the educational possibilities of digital games (Gee, 2004).

Several participants also referred to having difficult or isolated childhoods, partly due to social anxiety or disability. In this context, games were not just beneficial because they allowed people to have fulfilling social relationships. Games were specifically and explicitly beneficial because they structured the social interaction.

"[…] great way for me to hang out with people in a controlled environment because I kind of know what's happening [in the game]. That's important to me because I have a hearing loss." (PAX2)

"[…] I was going through probably one of the worst depressions that I ever experienced […] I couldn't really leave the house […] Playing this game and having friends come over and be on watch was the only thing that was keeping me there."
(PAX6)

Games provided spaces where they could safely develop socially in a more controlled way because of the constraints imposed by playing a game. In this regard, the social aspects of games were also beneficial in reducing isolation, combatting depression and building supportive communities.

This theme, therefore, contrasts with existing player motivations. Yee's concept of Achievement is primarily about in-game achievement and while SDT holds that fulfilment of the needs is good for people, in the context of games there is no discussion of what the specific benefits are. These extrinsic benefits did not appear in the value structures specific to games either (Lin et al., 2017), although knowledge gain is a component of the user value of Stimulation. Also, it is possible that in using games to work around personal or contextual constraints, games are supporting the need for Safety partially in the form of improving health and well-being.

Art

Though not strongly represented, some participants in both contexts did mention a view of games that is consistent with considering them as works of art. Sometimes this is only with comparison to stories and books and the effects they can have on you but sometimes it is very explicit:

"As cultural enrichment. Games can have beautiful, touching, or clever stories which I love. The art in games is often just as inspiring as any art in a [museum]." (PP87)

Related to that is an appreciation of the creativity of developers but also that games can be an opportunity for players to be creative, a specific part of the self-actualisation value:

"It gives me an outlet to express creativity but also experience the creativity that other people decide to create." (PAX33)

Fun, Way of life, Universal

These three themes though not widely represented in the responses from the participants are clearly expressed by some participants.

Many of the players reference fun, entertainment and enjoyment resulting from playing games. Interestingly, previous studies into motivations did find this but often players presented this apologetically. This fits with other accounts of adults excusing themselves for playing (Deterding, 2018). Our participants, possibly because of how they were recruited, seemed to feel no need to excuse their enjoyment playing games: after all, they are "just a lot of fun" (PAX38).

Some participants referred to playing games as a hobby, something they have done since childhood or simply "it's a way of life" (PP11). The implication is that, for them, playing games is just something that they do, and this fits well with de Grove et al.'s perspective on playing as a habit.

Finally, a few of the PAX participants saw games as something universal that everyone could get something out of. There was a degree of idealism about this, in the sense that it is not always obvious in the wider world of online trolls that "[e]veryone is super-inclusive in the gaming community" (PAX24). It perhaps reflects the Universal value that these participants felt ought to be true of games and in their experience was one of the important aspects of gaming.

Enabling

Unlike the previous themes, the enablement of players is a theme that was distinct to Player Panel participants. It reflects the sense that, through playing games, the participants were able to do things that were otherwise closed off to them. This contrasts with the escapism aspect of Diverting as, in many cases, enablement referenced being able to do what others can do:

"Honestly, growing up if it weren't for video games I don't know if many of the able-bodied kids my age would have given me a chance." (PP4)

"When I play games, I feel […] like everyone…" (PP22)

"Gaming gives me barrier free worlds where I can be equal with friends instead of being held back by my disability."

"It has allowed me to feel included in my social circle and like I am capable of being myself still." (PP33)

"[Overwatch] is one of the first games that puts me on the same level as my abled friends." (PP48)

For some, though, that equality came from games providing anonymity, and thus avoiding people's preconceptions about disability, allowing them to reveal their identity on their own terms.

Games being enabling is not necessarily just about equality but also about feeling independent and capable of doing things that their disability prevents:

"[Games are important] because of my limited mobility. I'm able to go places and do things that I can't do in reality." (PP67)

"It's also something I can do on my own, without the help of anyone else." (PP123)

In this sense, the importance of games for players with disabilities is about feeling a sense of accomplishment and autonomy. Interestingly, though these motivations frequently appear in various forms in the literature, they were not mentioned by the PAX participants. Enabling itself was also rarely mentioned by them. Moreover, when they did, it was only mentioned in reference to some limiting or constraining aspect of their own life, including mental health issues and communication problems.

Discussion

We asked our participants "Why is gaming important to you?" with the aim of understanding the specific aspects of games that players with disabilities find important, both in common with other players but also in contrast with other players. We found that there is broad commonality and representativeness of the themes across both groups of participants and with previous studies. This reflects that, mostly, games are important to all players for the same reasons. Social connection, diversion and escape from daily concerns, and fun are the reasons why people play, whether disabled, a game festival goer or from the other populations of young adults, older players or children represented in the literature. These seem to be a large part of why everyone plays games. And having developed a habit of playing games then there is a natural expectation to continue to play, one way or another.

Interestingly, several diverse studies found that people with disabilities gained similar value from engaging with Virtual Worlds such as *Second Life* (Stendal, 2012). In this sense, games could be understood as a social space like a Virtual World. This may, in some cases, be due to having a virtual game world, but more commonly our players referred to having presence in the social rather than virtual space.

However, there is another important constituent represented in the responses of the Player Panel participants in that games can enable players with disabilities to achieve goals within a game and make those players feel like everyone else. This has some resonance with the notions of autonomy and competence that underpin SDT. It is notable, though, that these needs are not strongly represented in the PAX participants even though SDT provides such a coherent account of intrinsic motivations. It may be that, for those without disabilities, fulfilment of these needs is not such an important aspect of why they play games. Yes, games may satisfy those needs, but players are not seeing them as important for that reason. It may be because these other players are able to feel autonomous and competent in other ways and so games are not

specifically important to fulfilling those needs. Or it may be that the experience of needs fulfilment to these players is unconscious, though nonetheless satisfying and important.

However, for players with disabilities, it is different. In the social model of disability (Shakespeare, 2013), to have a disability is to be excluded from the activities that others can freely take part in due to the mismatch between the individual and their abilities and the designed world. Games are enabling for some because they remove the barriers of disability that limit other aspects of their lives and this is felt both as the ability to do what the game requires and the ability to do what others do in the game. The move out of the physical world and into the virtual worlds of games gives players with disabilities the same challenges that everyone else has. Of course, without care in the design of games, it is possible that games could effectively reconstruct disabilities in the digital realm (Carr, 2010), or create new unanticipated barriers, however because of the question in the survey, we did not identify whether some games could also remove the enablement that others experienced.

Note that Enablement is not equated with escapism seen in player motivations and represented here in the theme of games being Diverting. Games can be escapist and diverting on their own terms. The emphasis in Enablement is more of a comparison. Players talked about games being Enabling in contrast to what they are unable to do on their own and in line with what others without disabilities can do. For those with a disability, games bring about an equality of experience on a par with those without a disability.

Two further themes arose in this study that have not been strongly identified in previous games research. First, playing games is seen as beneficial. This benefit can be simply a form of relaxation and de-stressing, and as such, games are a diversion extending the basic idea of games as fun and entertainment. Though games as diversion has been seen in the uses and gratifications approach (Sherry et al., 2006), it is not well represented in the other approaches to motivations. It was identified as part of a means-end chain in the context of playing MMORPGs (Lin & Lin, 2011) but was not an end-value in itself. However, other research has identified the potential for games to cope with day-to-day stresses. Collins & Cox (2014) found that people who played games after work showed more signs of post-work recovery and so were better equipped to face a new day. Evidence is beginning to emerge that playing games could be a coping strategy when faced with other problems like stress and social anxiety (Kardefelt-Winther, 2014). From our study, it seems that players are aware of this benefit and so digital games are an important factor that helps them to manage their stress.

Games can also have much more explicit benefits that players value such as learning new things, like languages or about other people, or improving skills needed for life. This was particularly seen with the players with disabilities for whom games could be a way to practise skills that were diminished by their situation. And across both groups of participants the ability to connect with others in the controlled constraints of a game helped specifically with social problems and improving social skills outside of the game.

The second new theme was that players recognise that games are a form of art and are important for that reason. It would be out of place here to discuss whether games are really art (Smuts, 2005). But our participants made the explicit link between games and storytelling and how exploring stories, sometimes literally in a game, is an important activity. Further, they recognised the creative elements of both making and, in some cases, playing a game. It seems therefore that games were appreciated as art and that, for some, that was why they were important.

Though the goal was not to explicitly reveal player motivations, there was an expectation that all motivations to play might be raised as important. However, this was not the case. Particularly absent from the PAX players was the notion of competence, framed elsewhere as achievement or status. Even competition was only mentioned once and then as part of a list of things. Competing, particularly on an equal footing with others, was more important to the PP players and Enabling did have elements that would align with the notion of Competence but not necessarily in the sense of being better than others and so accruing status. Thus, across all participants, achieving and outperforming others did not emerge as important to players. While players might be motivated to play to achieve and perform well, it is only important in that it enables people to be like everybody else.

The limitation of this study is that the players who engaged with the study perhaps are not representative of all players. The Player Panels and the PAX players were all recruited under the aegis of AbleGamers which might mean they have specific attitudes and values that they feel AbleGamers represents. This does not invalidate the current findings because the fact that players have expressed these values means that they are potentially relevant to a much wider player-base, although that would need to be investigated further. Rather, it also suggests that if players were asked more widely about what they value in games then there may be other findings that are not currently covered in the player motivations or values literature.

Another limitation is that, this study is talking to players who are already playing. It may be the case that some have tried to play games but due to basic issues of accessibility have been unable to play and what they might value in games is not represented here. It might also be that for some people with disabilities, they have tried playing and not found any value in it. We simply cannot know. It would be very useful to see the effect of helping people who could not previously play to become players. The hope would be that they would accrue the benefits of playing that others enjoy but it would also be informative to see how the value of games develops over time, if indeed it does.

Conclusions

Game developers and the games industry more broadly are moving towards making games more accessible to players, largely by adding options that adapt the games and so provide access to them. But adaptations could change games in ways that remove the value that players

place in playing the games. Thus, in considering how to make games accessible, this work puts the emphasis on what makes games important to players.

One approach to making games accessible has been to produce games that are specifically for players with particular disabilities. That is, instead of adapting games to make them accessible, make games that are accessible to a certain audience from the outset. For example, some games have been made that are specifically for people who are blind (Miller, Parecki & Douglas, 2007) or who are only able to use single-switch interfaces due to physical limitations (Lopez, Corno & Russis, 2017). Though there may be situations in which these games are enjoyable, they do not reflect the values of players more widely. Games are important for Connecting people and not just with people who are the same as themselves. Games which are just for disabled players remove them from the important social connections that they, and other players, seek. Moreover, players with disabilities are Enabled by playing, and playing well, in the games that everyone plays. It is not that we should simply be providing some games that players with disabilities *can* play but that mainstream games should be accessible to as many people as possible in order to achieve the social connection and enablement that players with disabilities value. The principle of adapting games to make them accessible is key to delivering their value.

In addition, whether socially played or not, games provide benefits including de-stressing and learning experiences that are important to the well-being and improvement of players. Players are recognising that games could be a significant, informal vector for well-being. We currently do not know whether it is specific attributes of games that make them beneficial or whether it is more generally the engagement in play that brings about these benefits almost incidentally. Therefore, in this early stage of knowledge, while there is the possibility that any and all games provide a social good to all players then we should look to make the ecology of games as widely accessible as possible, so everyone can game, at least in principle.

As this work provides evidence of what players value in game, it may now be possible to take a value-sensitive approach to informing how digital games can be adapted to make them accessible. Some adaptations, such as removing multiplayer for people with disabilities, would remove the important value of connecting. However, it is unclear how other adaptations, for example, adjustments to the level of challenge or changes to the density of visual information, might influence the benefit, artistry or even enablement that players experience. There is a potentially important strand of work to develop a clear understanding of what we might call value-preserving adaptations. Where values cannot be preserved, and compromise is needed, it would be useful for designers to have insights about the potential impact on what players value.

Overall, a focus on values suggests that the goal of making games accessible is not just "nice to have." It is not enough to say that there are some games for players with disabilities, so your game does not need to be accessible. The value of games to all players is that they can play and connect with each other. A "disability ghetto" in digital games, of especially built games just for people with disabilities, divides people and so removes much of what is valued by players.

Furthermore, when games are made accessible, players generally can gain benefits from playing and for players with disabilities, being Enabled is a benefit that is distinctive to digital games when compared to many activities in modern life. Digital games, perhaps, occupy a unique position in being Enabling in this way.

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