Disability Interactions in Digital Games: From Accessibility to Inclusion

A note on language
In this paper we use the identity-first language 'disabled gamers' instead of the person-first language 'gamers with disability'.

Identity first language is preferred in the UK by Disabled People's Organizations.

In identity-first language, 'disabled people' is used to refer to the way in which society disables people with impairments, for instance by adding steps to a building.

In contrast, the person-first language implies ownership of the 'problem' by the individual.

Throughout this text, the UK approach has been used, recognizing that this is contested and important.

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Abstract
Digital games are a hugely popular activity enjoyed for the diverse experiences and relationships that they offer players. In 2019, games are more accessible to an increasingly diverse audience of disabled players through both new gaming technology and in-game options that allow people to tune their experiences. As a significant cultural medium, it is also challenging perceptions of disability in how characters are depicted. In this workshop, we aim to understand better the research challenges in making games for and with disabled players. We explore opportunities in games and disability through the lens of the new Disability Interaction (DIX) manifesto.

CSS concepts
• **Social and professional topics → People with disabilities** • **Applied computing → Computer games** • **Software and its engineering → Interactive**

Author Keywords
Disability Interaction; Disability; Accessibility; Digital Games; Game Accessibility.

Background
The human-computer interaction and games research community offer a growing body of research on accessible games. Broadly, existing work falls into games for rehabilitation, bespoke games or adaptations

Organizers

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Christopher Power is an Associate Professor at the University of Prince Edward Island; he is an accessibility researcher with a focus on the design and evaluation of accessible player experiences in games. He is also the Vice President of the AbleGamers Charity.

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to games and the development of guidelines. Within the rehabilitation space, games have been development to improve functional loss, such as vision [7] or bespoke technology, e.g. to enable wheelchair users to exercise more through games [4]. More generally, bespoke games or bespoke adaptations of game controls offer a way that disabled players may play something suited to their particular needs or situations. For instance, [10] adapted the popular *Guitar Hero* game to use haptic cues thereby supporting players with a visual impairment.

However, the key drawback of these approaches is that these solutions do not address general accessibility concerns with respect to commercially available games. There is growing recognition that there are significant numbers of disabled players who are playing or want to play commercial games. The first large demographic survey [2] of disabled players painted a rich picture of their motivations and experiences. This study involved players who self-identify as disabled rather than focus on a specific functional impairment or assistive technology use. Disabled players are seeking out games and playful activities for similar motivations to non-disabled players: fun and sense of overcoming challenges [2], competition [6] and stimulation [3].

To support developers, there are sets of guidelines for accessible games that have wide distribution and recognition amongst game developers. The two most significant are Includification [1] and the Game Accessibility Guidelines (GAG) [12]. Likewise, guidelines for game accessibility have been approached from academic perspectives [11]. Though these efforts all have their place, they are to a degree positioned in the first and second waves of HCI. What is needed is an approach to making games accessible that reflects the epistemological situated nature of players and their values, that is to embrace a third wave approach to the design of accessible games [9]. More broadly, the recent Disability Interaction (DIX) manifesto [5] argues there is a need to move beyond accessibility and to use the study of DIX to overcome stigma, increase the involvement of disabled people systematically in the design process and ultimately social inclusion.

In many instances, games developers are already engaging in this way with their players. However, whereas some companies are doing well, others may not be aware of, or more likely, be unsure of how to proceed to a more inclusive approach. There is a need both to share best practice from research and industry and to identify the ways in which research can provide the underpinning concepts and evidence that best support an inclusive game development culture. This workshop asks how research can contribute to this culture.

Goals and Research Questions

Over the course of a half-day workshop we aim to investigate the wider role of digital games in changing perceptions of disability, the role games can have in the empowerment of disabled players, and how insights from the games research community can be developed further to continue dialogue with industry efforts to increase accessibility and representation of disability in games. We propose exploring the following themes:

1. Changing societal attitudes through diversity of characters

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Anna Cox is a Professor of Human-Computer Interaction. Her research explores the impacts of technology for making us healthy, happy and more productive with a particular focus on work-life balance and wellbeing.

Paul Cairns is Reader in Human-Computer Interaction at the University of York and Scholar-in-Residence at the AbleGamers Charity. He has a particular research focus on understanding player experiences of digital games and bringing about inclusion and equality through digital games. He also *really* likes statistics.

The games industry, like any multi-billion-dollar sector of the economy has huge influence on consumers and society as a whole. It, therefore, has the ability to change attitudes. This should be harnessed for disability and inclusion, in much the same way as Passmore et al [8] argue it should be for race. Many disabled players want to see themselves represented in games and other media as it ensures inclusion as a player as well as being a representative part of our broader society, and exploratory work from the games research community has demonstrated its value for player experience. Inclusion has different forms, and it can encompass providing a range of characters with different characteristics, sensitive language to the identities and culture of groups of people, and narratives that include disabled people without reducing them to their disability.

2. Adapting games to increase social inclusion

Many games offer options that allow players to adapt them to their particular needs, whether disabled or not. We would like to gather the first-hand experiences of players or developers of such games to better understand the benefits, challenges and opportunities that adaptivity presents. We also need to explore further the relationship between vulnerability and playing. How do we ensure failure within the game or the failure to adapt the game is not a cause of negative self-reflection for people who are more vulnerable?

3. The role of co-development of games

Academics have good methods and knowledge about working with diverse audiences in a participatory context. Games developers have their own specialized processes for development. How can we better work together across these boundaries to advance game accessibility? Important in this is the concern for the co-design process to be accessible to disabled players. It may be that remote testing, specialist test suites or other methods are needed to make participation as wide and as effective as possible. We seek perspectives on this area and question if new, inclusive and lightweight methods for player engagement are needed.

Website:

www.disabilityinnovation.com/research/CHIPlay2019

Pre-Workshop Plans:

Leading up to the workshop, we will share participants' case studies which have been accepted for further exploration. A blog post supporting and explaining this work to a wide audience will be written for and shared through the GDI Hub and social media.

Post-Workshop Plans

The aim of this workshop is to bring together researchers, gamers and developers working in different domains. The purpose of this collaboration is to explore how the games industry and games researchers are currently interacting with disabled people and to set a research agenda that supports and enhances an inclusive approach to game development.

To ensure the third wave of accessibility and inclusion within games continues to grow after the workshop, the workshop website will present an agenda for inclusive digital games, based on the ideas and perspectives that emerge on the day. Furthermore, to ensure maximal reach of message we will write: First, a white paper

Workshop Structure

60 mins: Introductions & short, presentations of case studies

15 mins: Coffee & socializing ideas

60 mins: DIX Theme Exploration through three group discussions with feedback session.

15 mins: Coffee & socializing ideas

60 mins: Deep-dive into one of the themes

30 mins: Key learning & Next Steps. Each person to present their top 2 learnings from the day and 1 next step activity

setting out a vision for the future of accessibility research in gaming will be submitted to Interactions. Secondly, we will write a submission describing a roadmap to achieving the vision set out in the white paper will be made to a Gaming Industry venue (e.g.the IGDA-sponsored #GAconf) with a view to evolving the thinking and continuing a conversation with the games industry on this important matter.

Call for Participation

We solicit submissions from academia, industry, and disability advocates in the following categories:

1. Case study papers from academia and industry which explore one of the workshop themes. These can explore successes as well as failures to make games more accessible.

2. Position papers which are reflective in nature. These could be from disabled individuals or people working in the disability space, or games industry representatives. Position papers should discuss both positive and negative experiences in the game space. We particularly encourage disabled players to share their experiences of game accessibility and thoughts on co-design of games.

Submissions can be made in the traditional extended abstract format of a 4-page paper in either Word of PDF paper. We also welcome submissions in alternative formats, for example, design portfolios or videos of accessible gaming experiences. Submissions should be made via email to c.holloway@ucl.ac.uk with the subject line "Disability Interaction in Digital Games Submission" no later than 16th August 2019.

Participants will be selected based on the relevance of their submission to the proposed themes. At least one author of each accepted submission must attend the workshop at CHI Play 2019, or video-link into the workshop. Following the workshop, the authors will be invited to collaborate on follow-up work.

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