

Open Research Online

The Open University's repository of research publications and other research outputs

Case studies: understanding players and the contexts in which they play. Workshop on Crossing Domains: Diverse Perspectives on Players

Conference or Workshop Item

How to cite:

Iacovides, Ioanna and Cox, Anna (2015). Case studies: understanding players and the contexts in which they play. Workshop on Crossing Domains: Diverse Perspectives on Players. In: Workshop on Crossing Domains: Diverse Perspectives on Players, CHI 2015, 18-23 Apr 2015, Seoul, Korea.

For guidance on citations see [FAQs](#).

© 2015 The Authors

Version: Accepted Manuscript

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk

Case Studies: Understanding Players and the Contexts in which they Play

Ioanna Iacovides

UCL Interaction Centre
University College London
London, WC1E 6BT
i.iacovides@ucl.ac.uk

Anna Cox

UCL Interaction Centre
University College London
London, WC1E 6BT
anna.cox@ucl.ac.uk

Abstract

Over recent years, the study of games and players has become an established domain with HCI research. However, while a range of methods has been employed within this area, questions remain as to how to develop in-depth understandings of players and the contexts they play within. Drawing upon the social sciences, this paper proposes case studies as an additional methodology for player research. We discuss the approach by referring to an example of how case studies were used to investigate the relationship between gaming involvement and learning.

Author Keywords

Methodology; case studies; games; players

ACM Classification Keywords

H.5.3 Information interfaces and presentation (e.g., HCI): Miscellaneous ; K.8.0. General: Games.

Introduction

Carter and colleagues argue that the study of games and players (recently referred to as Player-Computer Interaction) is now an established field in HCI [4]. A particularly important focus in this area has been on the experience of player involvement and a variety of methods have been used to investigate different aspects of this experience; from interviews [e.g. 2] and

observation [e.g. 7] to game metrics [e.g. 5] and physiological data [e.g. 11]. Research evaluating gameplay tends to view involvement as something objective and measurable, though alternative perspectives note the complexity of our emotional reactions and how these result from dynamic social, contextual and cultural factors [e.g. 10].

Much of the research investigating the player experience has been focused on specific instances of play, i.e. micro involvement, rather than longer-term motivations and the activities that occur around play, i.e. macro involvement [3]. Ethnography has been used in longer studies of massively-multiplayer games [e.g. 13] though can practically more difficult for investigating player involvement off-line as it would require gaining access to multiple sites e.g. player homes, on the bus etc. An alternative approach, to tap into micro and macro involvement across play contexts, is to use a case study methodology.

Case studies

Case studies are in-depth investigations of an individual, group or organization where data is typically collected from across a variety of sources over an extended period of time. They can involve a single case or multiple cases, and the collection of qualitative and/or quantitative data. In addition to the collection of different forms of evidence, the importance of considering phenomena in relation to real-world contexts is usually emphasised [1; 15]. We refer the reader to [14] and [15] for detailed guidance on how to conduct case studies.

Yin [15], argues that, within a multiple-case study approach, validity is increased through collecting

multiple sources of data, building explanations and comparing across cases, while reliability is ensured by following a case-study protocol. Further, the examination of several cases allows for “insight into an issue or refinement of theory” [p. 88; 14]. The aim of this approach is not to make statistical generalizations about frequencies and populations but to make analytical generalizations that expand theories [15].

While multiple methods are often used in HCI, case-study approaches are less common, particularly within the domain of games. An exception to this is work by Barr [1] who, building on the work of Pelletier & Oliver [12], examined 5 games (played by 5 different people) through: taped observation, concurrent think aloud, DVD capture of gameplay, semi-structured post-play interviews and analysis of game documents. Barr’s aim was to develop the concept of videogame values, e.g. play and progress, and to explore how they are expressed during play via the game interface. However, his research was primarily concerned with micro involvement and says little about the wider contexts in which players choose to play.

In the following example, we provide an overview of outline a multiple-case study approach [for more detail on the methods - see 8] which aimed to examine the relationship between involvement and learning and how they come together on a macro and micro level. Our findings and resulting theory are presented in [9].

Investigating how learning and involvement come together in practice

Eight cases were included, with nine participants in total (age 23-59; 5 male, 4 female). Each case consisted of a single participant who was asked to

come into the lab on three occasions and to keep a gaming diary over three weeks; except for one case which consisted of two participants (a married couple). By maximizing the differences between cases as far as possible, Barr [1] argues that this allows for “multiple cases to shed light on one another and to contribute to a more generalisable resulting theory.” (p. 44). We therefore recruited participants who differed in terms of age (mean age: 33.2yrs; age range: 23-59), gender (5 Male, 4 Female) and gaming identity (5 explicitly identified as gamers, 4 did not). To ensure reliability, a protocol was developed for the researcher to follow during each lab session and interview.

The lab was set up as a comfortable living room environment, with a couch, wide screen TV and game consoles for participants to play. The first session included a preliminary interview, a questionnaire on gaming habits and preferences, and an introduction to the study. In the second session, the participant was asked to bring in a game they were currently playing so they could be observed playing in the lab. In the third session, the investigator chose a game for the participants that would not be the sort of game they usually played. The player and the gameplay were recorded, while physiological data was also collected [however, the latter did not prove useful for the analysis – see 8]. The investigator observed the gameplay from a separate room. The player and the investigator then reviewed the gameplay recording together during the post-play interview.

Throughout the three week period, participants were also asked to keep a semi-structured diary of their game playing activities outside the lab, including mobile games. Diary entries were checked each week while a

final semi-structured interview was carried out at the end in order to discuss the diary activities [6]. After the diary interview participants were given a £15 Amazon voucher to thank them for their participation.

The qualitative analysis of the data set focused on critical instances in which breakdowns (e.g. problems) and breakthrough (e.g. solutions) occurred. The resulting theory is presented in Iacovides et al., [9] as a set of 14 claims relating to *micro and macro involvement; breakdowns and breakthroughs in action, understanding and involvement; progress; and agency, meaning and compelling gameplay.*

Discussion

Through adopting a multiple-case study approach we were able to capture a rich set of data over an extended period of time and to develop a theory of how player involvement and learning come together in practice. The cases were purposefully selected in order to ensure they captured a range of different players and game playing experiences to allow for a more generalizable theory. Further, collecting data from multiple sources allowed for triangulation of data as well as a consideration micro and macro level behaviors across different contexts and times.

However, there are limitations to this approach. While not as intensive as an ethnography, and involving fewer participants than an experimental one-off lab session, a significant amount of time is required to conduct multiple case studies and analyze the data. In addition, researchers should avoid trying to make statistical generalizations about the data collected e.g. in terms of comparing the behavior of “gamers” and “non-gamers”, as the sample size will not be large enough.

Instead, we argue that if the aim of the research is “to expand and generalise theories (analytical generalization) not to enumerate frequencies (statistical generalisation)” [15; p. 15], then a multiple-case study approach is a particularly appropriate methodology. Further, our example illustrates how it can be used to provide a deeper understanding of players and the variety of contexts in which they play.

Acknowledgements

The authors gratefully acknowledge funding from the Engineering and Physical Sciences Research Council (UK), grant number (EP/G059063/1).

References

- [1] Barr, P. (2007). Video game values: Play as human-computer interaction. Unpublished doctoral thesis; Victoria University of Wellington, New Zealand.
- [2] Brown., E & Cairns, P. (2004). A grounded investigation of game immersion. Proceedings of the CHI '04 Conference on Human Factors in Computer Systems, 297-1300. New York: ACM.
- [3] Calleja, G. (2011). In-Game: From immersion to incorporation. Cambridge, MA: The MIT Press.
- [4] Carter, M., Downs, J., Nansen, B., Harrop, M. & Gibbs, M. (2014). Carter et al (2014).Paradigms of Games Research in HCI: A Review of 10 Years of Research at CHI, Proceedings of the 1st ACM Conference CHI Play, (pp. 131-140), New York, NY, USA, ACM.
- [5] Drachen, A., & Canossa, A. (2009). Towards Gameplay Analysis via Gameplay Metrics. Proceedings of the International MindTrek Conference, 202-209. New York: ACM.
- [6] Elliott, H. (1997). The use of diaries in sociological research on health experience. Sociological Research Online, 2(2). <http://www.socresonline.org.uk/2/2/7>
- [7] Lazzaro, N. (2004). *Why we play games: Four keys to more emotion without story*. [Technical report]. Oakland, CA: XEO Design Inc.
- [8] Iacovides, I., Aczel, J.C., Scanlon, E., & Woods, W. (2013). Making sense of game-play: How can we examine learning and involvement? Transactions of the Digital Games Research Association, 1(1).
- [9] Iacovides, I., Cox, A.L., McAndrew P., Aczcel, J. & Scanlon, E. (in press). Game-play breakdowns and breakthroughs: Exploring the relationship between action, understanding and involvement. Human Computer Interaction. <http://www.tandfonline.com/doi/abs/10.1080/07370024.2014.987347>
- [10] Isbister, K., Höök, K., Laaksolahti, J., & Sharp, M. (2007). The sensual evaluation instrument: Developing a trans-cultural self-report measure of affect. International Journal of Human-Computer Studies, 65(4), 315–328.
- [11] Mirza-Babaei, P., Nacke, L.E., Gregory, J., Collins, N., & Fitzpatrick, G.A. (2013) How Does It Play Better? Exploring User Testing and Biometric Storyboards in Games User Research. Proceedings of the CHI '04 Conference on Human Factors in Computer Systems, 1499-1508, New York: ACM.
- [12] Pelletier, C., & Oliver, M. (2006). Learning to play in digital games. Learning, Media and Technology, 31(4), 329–342.
- [13] Nardi, B., & Harris, J. (2006). Strangers and friends: collaborative play in world of warcraft. Proceedings of the 2006 20th anniversary conference on Computer supported cooperative work, 149-158.
- [14] Stake, R. E. (1998). Case studies in Denzin, N.K., & Lincoln, Y.S. (Eds.) Strategies of Qualitative Enquiry, (pp. 86-109). Thousand Oaks, CA: Sage.
- [15] Yin, R. K. (2009). Case study research: Design and methods. 4th edition. Thousand Oaks, CA: Sage.

Author bios

Ioanna (Jo) Iacovides, is a post-doctoral researcher at the UCL Interaction Centre. She is currently working on the EPSRC (Engineering and Physical Sciences Research Council) funded CHI+MED (Computer Human Interaction for Medical devices) project. Her background is in Psychology and Human Computer Interaction, and her PhD thesis was titled "Digital games: motivation, engagement and informal learning". Her research interests relate to learning and technology; from formal education e.g. technology training in the workplace to informal learning e.g. using a games competition to support public engagement with research. She is particularly interested in developing methods to evaluate games, including those that support serious experiences.

Anna Cox is a Reader in Human-Computer Interaction, and Deputy Director at the UCL Interaction Centre. She has written articles on the experience of playing videogames with a particular focus on defining methods for assessing elements of the game experience. Her current interests include exploring the role of immersion in games that aim to motivate volunteers to participate in citizen science projects and investigating how videogames can be used to support and maintain the traditional boundaries between work and personal-life. She is the co-editor of Research Methods in Human-Computer Interaction (CUP, 2008), the first textbook in this area.