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

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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.

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References


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.