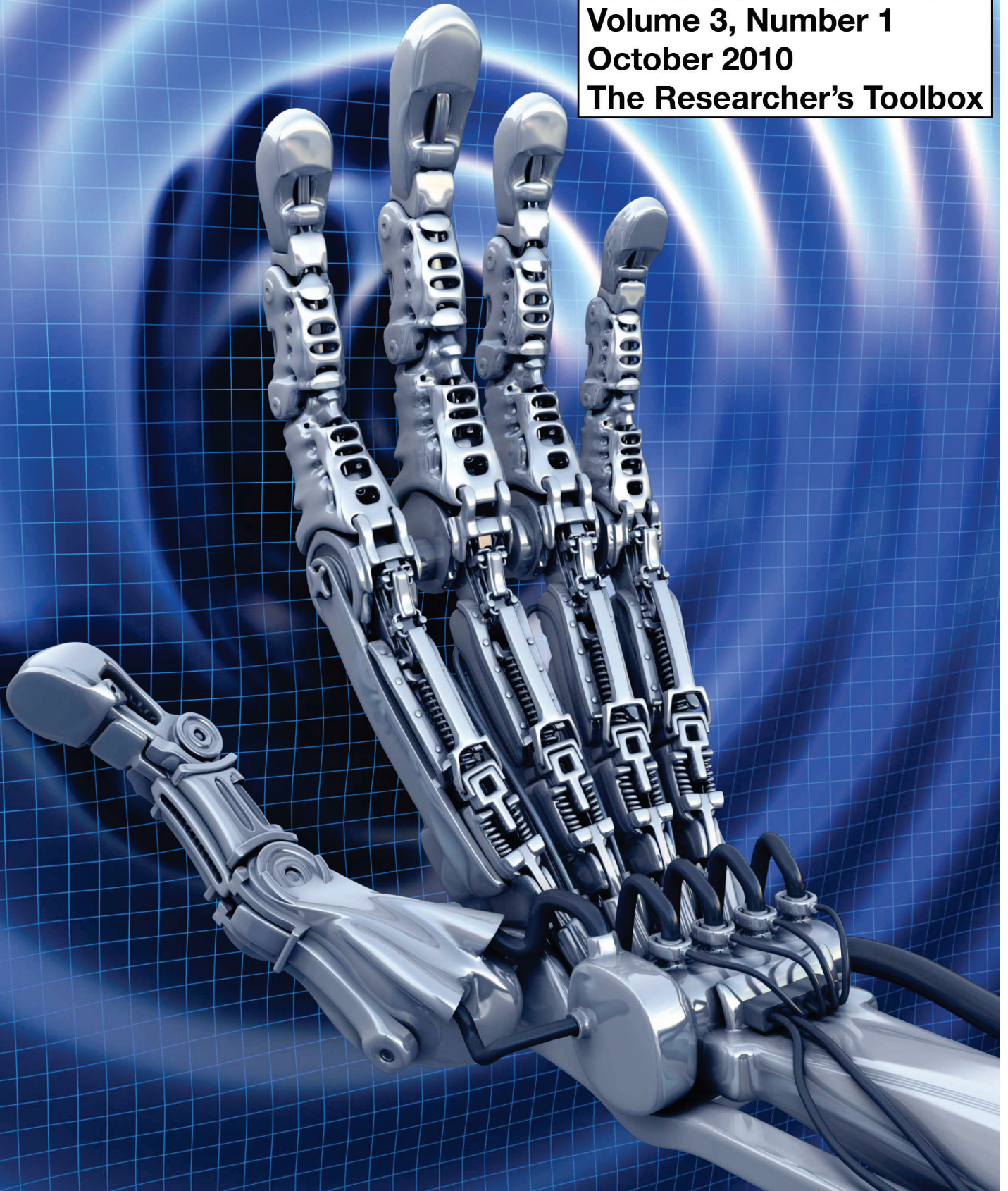


Journal of
• Virtual Worlds Research

jvwresearch.org ISSN: 1941-8477

Volume 3, Number 1
October 2010
The Researcher's Toolbox



Volume 3, Number 1

The Researcher's Toolbox

November 2010

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**Volume 3, Number 1
The Researcher's Toolbox
November 2010**

Conducting Empirical Research in Virtual Worlds: Experiences from two projects in Second Life

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Abstract

At The Open University in the UK, we have conducted empirical qualitative research in Second Life, a virtual world. The first project is in the education domain in which we are investigating the designs of learning spaces in Second Life, while the second project is related to shopping and consumer behavior of users in Second Life. In this paper, we discuss our experiences of conducting empirical research in virtual worlds with a specific focus on the following aspects: ethical norms, real-world and virtual identities, privacy of the participants, communication modalities (voice, text and use of gestures), logistics of conducting user-based studies, and skills and training needs of researchers. Although our experiences are based on conducting empirical research in Second Life, we hope that our experiences and discussions in this paper will also be useful for researchers who aim to conduct research in avatar-based virtual worlds other than Second Life.

Keywords: 3D learning spaces, communication modalities, consumer behavior, empirical research, ethical guidelines for 3D research, Second Life, three-dimensional learning spaces, virtual identity, virtual worlds, virtual world research.

Conducting Empirical Research in Virtual Worlds: Experiences from two projects in Second Life

Introduction

Three-dimensional virtual worlds, also called synthetic worlds, are multimedia, simulated environments, often managed over the Web, which users can “inhabit” and interact via their graphical self-representations known as “avatars.” In a virtual world, the users, represented as avatars, experience others as being present in the same environment, or “being there together” even though they are geographically distributed. Users converse in real time through gestures, audio, text-based chat and instant messaging communication (e.g. Meadows, 2008). These virtual worlds support communication and collaboration more effectively than two-dimensional web-based environments by extending the user’s ability to employ traditional communication cues of face-to-face interactions such as gestures, voice, having visual presence and mutual awareness in real time, and sounds, in a way that two-dimensional (web-based) environments do not (Bronack, et al., 2008; Eschenbrenner, et al., 2008). Today virtual worlds are being used in many applications: education and training, social networking, entertainment, gaming, marketing, and commerce.

There are several virtual worlds platforms such as Active Worlds, OLIVE, Protosphere, Second Life and Web Alive (Wilson, 2009). In this paper, our focus is on Second Life¹. Users connect to the Second Life environment with a software program, called a client or viewer, which is responsible for displaying the virtual world and for negotiating user commands with a central server. The client displays the user’s avatar and surrounding environment consisting of other avatars, landscape, buildings, etc. Unlike Massively multiplayer online role-playing games, such as World of Warcraft that have a scripted plot or storyline, Second Life is not a “game” per se. The content and narrative in Second Life is constructed and owned by the residents (users) of Second Life, and Linden Labs, the company that created Second Life, provides the infrastructure, hardware, and software to support Second Life.

At The Open University in the United Kingdom, we have been involved in carrying out empirical qualitative research *within* Second Life and *on* two Second Life projects. The first project is in the education domain in which we have been investigating the designs of learning spaces in Second Life, while the second project is related to shopping and consumer behavior in Second Life.

The participants in the first educational project have been Second Life educators, designers and students. We have conducted inworld interviews, tours of Second Life islands followed by panel discussions, observations, and group interviews or focus groups with the participants. Our aim has been to elicit their experiences and perceptions of learning space designs in Second Life, and to find out which key characteristics of learning space designs were important to them; whether or how does the realism or non-realism of learning spaces influences student learning and engagement? The recruitment of the participants has been through calls in Second Life educational groups, a real-world survey, and also through contacting colleagues who are on the Second Life -related mailing lists.

The aim of the second research project is to understand consumers’ shopping experiences in Second Life, factors that influence consumer satisfaction, and how the affordances of virtual

¹ <http://www.secondlife.com/>

worlds facilitate shopping in Second Life. We have applied the techniques of descriptive phenomenology and semi-structured interviews to elicit the Second Life shopping experiences and perceptions of consumers. The recruitment of participants has been within Second Life by meeting customers in popular shopping areas in Second Life and asking if they would be willing to participate in our research.

In this paper, we discuss our experiences of conducting empirical research in virtual worlds and focus on the following aspects of research design and implementation:

- How to develop research materials such as the consent form, project summary sheet, and so on, to address the possible concerns of an institution's ethics committee who may not be familiar with avatar-based interactions in virtual worlds.
- How the ethical guidelines of conducting research both in offline settings and on the Internet (or cyberspace) need to be considered and combined in the preparation of research materials for conducting research in virtual worlds.
- Identity rights of the avatar and how they are same or different from the identity rights of the person behind the avatar.
- How to combine complementary research techniques for the research questions, and how the techniques need to be adapted for conducting research in virtual worlds.
- Issues related to inworld recruitment of participants.
- Interviewing and focus group techniques in virtual worlds.
- Logistics of conducting empirical research in virtual worlds such as voice versus text-based data collection, developing a researcher identity or a consistent persona, choosing the locations for conducting interviews or focus groups, how to facilitate and manage the multiple channels of communication such as text (local chat and instant messaging), gestures and voice.
- Skills and training needs of researchers for conducting empirical research in virtual worlds.

Although our experiences are based on conducting empirical research in Second Life, we hope that the discussions in this paper will also be useful for researchers who aim to conduct research in avatar-based virtual worlds other than Second Life. In the next section, we present the challenges faced by researchers of social media and emerging virtual worlds, and we set out the motivation and focus of this paper. We then introduce two projects. Using a framework of a research process, we discuss the issues of conducting empirical research in Second Life through examples from these projects.

Challenges for Researchers Investigating Virtual Worlds

In the last decade, several technological changes have taken place such as easy access to computing power, the Internet becoming an integral part of people's lives, mobile Internet becoming a reality, and the rise of social media. Social networking and social media are making significant inroads into education, marketing, and business practices. Educational institutions are adopting social software such as wikis, blogs, social bookmarking platforms and virtual worlds for facilitating socialization, collaborative learning and training. Companies are adopting social media (e.g. Twitter, discussion forums) as a tool to engage with consumers and provide consumer service (Grensing-Pophal, 2009). Virtual worlds are being employed for holding meetings and conferences, training (e.g. simulating crime scenes for law enforcement training), therapy (e.g. community-based therapy for military veterans),

and for demonstrating prototypes through simulations to get early stakeholder feedback before real-life production of products and services².

Investigating how people communicate, coordinate, and collaborate in these social networking environments and virtual worlds is important for the advancement of our understanding of human behavior and also for developing design principles which will enhance the capability of these spaces to support social and business needs. It is important to determine whether these emerging technologies are indeed meeting the intended social, business, or educational benefits. For example, social media and virtual worlds are facilitating “meaningful conversations” between businesses and their customers, but businesses are feeling loss of control and the risks of being transparent, and are keen to know about the competitive advantage of adopting these technologies in their business processes.

Researchers of social media, online games and virtual worlds face a number of challenges. The characteristics of these technologies are in a constant state of flux, new social technologies and communities are emerging, and user behaviors are diverse and so are their online identities as they adopt different technologies over time. Although there has been a lot of discussion about conducting research in online spaces (e.g. Hine, 2005) and in gaming environments (e.g. Yee, 2008), there are few seminal sources to refer to about conducting research in non-gaming virtual worlds. In this paper, we will share our experiences from two Second Life research projects in which the empirical work has also been conducted *within Second Life* or *inworld*.

The challenges of conducting research on Second Life and within Second Life are distinct from carrying out research of two-dimensional virtual environments, such as discussion forums, in that the characteristics of virtual worlds differ from two-dimensional virtual environments. One key difference is that the user’s avatar and the avatar’s appearance are additional dimensions of the user’s identity in a virtual world. In a three-dimensional space, the avatar can navigate (fly, walk, sit, teleport), encounter other avatars, and communicate with other avatars through gestures, voice, text, and instant messaging. These communication and interaction mechanisms in virtual worlds create a sense of “being together” in a “place” with other avatars. This sense of presence and sense of place in a virtual world is more similar to face-to-face (offline) situations in the real-world rather than interactions in a two-dimensional virtual environment such as Facebook³, or over video conferencing.

For empirical research on virtual worlds, this real-world-like environment and a face-to-face-like setting enable a perception of the interviews being conducted across a table with other avatar(s), or as if the researcher has “lived” in a community, or as if the researcher has conducted participant-observations in the participants’ contexts. Thus an advantage for a researcher of conducting empirical studies in virtual worlds, especially if the experience occurred in the virtual world, is that the participant will be situated in or near the context where the original event(s) took place. These situated contextual investigations have the ethos of the contextual inquiry method in social sciences research. Contextual inquiry reveals what people actually do, why they do it that way, latent needs, and core values (Beyer and Holtzblatt, 1997; see also <http://incontextdesign.com/>). The inquiry involves one-on-one field interviews conducted in the user’s work or life space and focuses on observing and talking with users about their ongoing activities. In a virtual world, the researcher can “visit” the users in the users’ spaces and conduct observations and interviews. Hence, the

² For example, <http://tinyurl.com/ykz1fb4>

³ <http://www.facebook.com/>

researcher's understanding of issues and solutions is better grounded in actual events and contexts.

The research process in a virtual world is, therefore, influenced by codes of practice, etiquette, logistics, and ethical guidelines of conducting research in real-world (offline) and online. For example, logistics of setting up an interview location in Second Life are very similar to what would be done in a face-to-face setting: a pleasant location with furniture, and undertaking measures to avoid interruptions. Since Second Life is an online space, the codes of practice and ethical guidelines for conducting online research can be followed or adapted for carrying out research in Second Life. There are several sets of ethical guidelines which are available for carrying out research in offline and online spaces: for example, the most widely used in the United Kingdom are from the following organizations which publish their guidelines in full on their websites: [British Educational Research Association](#) (BERA), [British Sociological Association](#) (BSA), and the [British Psychological Society](#) (BPS). The Association of Internet Researchers (AOIR, 2002) provides ethical guidelines for conducting online research. Further, the user's identity in Second Life is the user's avatar (e.g. name, appearance, profile, pictures). Hence, the codes of research conduct for anonymity and privacy of the participants in offline and online spaces are also applicable for the avatars.

Education and Consumer Behavior Projects

In the next section, we describe the two Second Life research projects. The projects are from two different domains: education and consumer behavior.

In the educational research project, a part of the recruitment was through a web-based survey and e-mails. A pre-interview questionnaire also enquired about their real-life learning and teaching (the course, university, how Second Life is embedded within the curriculum, etc.). Since the research involved the participants sharing their personal experiences with teaching and learning in virtual worlds, some of the participants took us to their Second Life learning spaces. Consequently, in this research project, we did get to know about the participants' identities both in real-life and/or their institutional affiliations and in Second Life. But, since the empirical research was conducted in Second Life, we referred to the participants by their avatar names in our correspondence and interactions with them.

In the second project related to consumer behavior within Second Life, both the recruitment and the empirical research were within Second Life. Since the project does not focus on real-world shopping activities, we did not ask about the real-life names. However, we enquired about gender, age, occupation and country of the participants because we needed a sample with maximum variation. In other words, we wanted to make sure all our participants were not only females, or only from a certain age group, etc. We used their avatar's profile information only to match it with our criteria during recruitment but other than that we have not used their real-life information, even if available in their profiles, as a part of our data analysis. Once they qualified as a participant, we were no longer concerned about their real-life identity.

Project: Design of Learning Spaces in Second Life

Research project: In this project we are investigating the relationship between the design of Second Life learning spaces and the design of learning activities (Minocha and Reeves, 2010b). We have elicited educators', designers' and students' perceptions of learning spaces

within Second Life. The research outcomes in the form of design guidance and examples are aimed to support educators and designers in designing learning spaces that foster students' socialization, informal learning, collaboration, and creativity.

Research question: Our key research question has been: “How should three-dimensional learning spaces be designed for student engagement?”

Data collection techniques: A web-based survey; focus groups and one-to-one interviews with the participants in Second Life, tours with Second Life educators followed by panel discussions.

Participants: The participants have been students who are attending their course-related activities in Second Life, educators who are carrying out a part or all of their teaching in Second Life, and Second Life designers (or builders) of learning spaces. In our study there has been an overlap in these three categories of participants – as some of the educators also design and build learning spaces.

Research materials: Consent form; project summary sheet that accompanies the consent form which gives details of the project, how the data will be collected and stored, who will have access to the data, how the data and the project's outcomes will be disseminated, and contact details of the research team; pre-interview questionnaire; semi-structured and focus group interview templates; and questions for the organized tours with Second Life educators. We created three different sets of materials: for Second Life educators, designers and students.

Experiences with the Ethics Committee: The Open University's Human Participants and Materials Ethics Committee⁴ (HPMEC) reviews and approves the research before recruitment and data collection can commence. The HPMEC proforma requires information about aspects such as: schedule of the project, funding source, justification of research, ethical guidelines to be followed, location of data collection, target participants, recruitment procedures, methodology, how the consent will be obtained, whether the project has been registered under the Data Protection Act (in the United Kingdom), and how the data will be stored and disposed of to comply with the Data Protection Act, recompense to participants, details of withholding any information from the participants, risk involved for the participants and researchers, and how the participants will be debriefed. The various research materials are attached with this proforma and submitted to HPMEC.

Our Second Life research project was the first Second Life or virtual world-related project at The Open University. Therefore, prior to submitting the proposal, one of the project team arranged a face-to-face meeting with a panel member of HPMEC. This meeting enabled us to introduce Second Life through pictures of Second Life, which we had taken with us to the meeting. We also explained the research project, how we were proposing to carry out the recruitment and the study, and the benefits of our research to The Open University. The panel member asked us about avatar-based interactions, communication modalities in Second Life, and how the avatars are identified in Second Life. The panel member suggested that we give details of the interaction and communication mechanisms in our application to HPMEC as other panel members may have similar queries while they are scrutinizing the application. Next, we submitted a detailed application to HPMEC along with all the research materials.

⁴ <http://www.open.ac.uk/research/ethics/index.shtml>

HPMEC noted that, as Second Life residents and researchers, we should follow the Second Life Community Standards⁵ and asked us to include this aspect in the research protocol.

Recruitment of participants: We recruited Second Life educators and designers through a web-based survey (on Survey Monkey⁶ when, along with other questions related to our research, we asked them if they would like to participate in interviews. The Second Life educational tours conducted by Second Life colleagues (Esme Qunhua and Janita Collins) helped us to network. We also sent messages to the various Second Life-educational groups. One of our research team regularly attended educational events as a way to network with the Second Life community and these contacts also directly and indirectly led us to prospective participants.

Project: Investigating Consumer Behavior in Second Life

Research project: The objective of our study was to understand consumers' experiences in virtual worlds. Businesses in Second Life use retail strategies and store designs similar to real-world stores, while utilizing the affordances of a virtual world such as avatar-based interactions. Understanding consumer activities in Second Life can provide insights on the future of commerce and marketing in three-dimensional virtual environments and the possible blending of two-dimensional and three-dimensional e-commerce environments.

Research question: Our research question has been: "What are the perceived experiences of consumers in three-dimensional virtual environments?"

Data collection techniques: The study has involved open-ended and semi-structured Second Life interviews. The phenomenological or open-ended interviews (Langdrige, 2007) require consumers to describe any shopping experience they had in Second Life. The open-ended question gave participants an opportunity to describe the experience in their own words without preconceptions introduced by the researcher. This was followed by semi-structured questions to ensure participants discuss specific aspects of their shopping encounter.

Participants: The participants for this study were consumers who had had shopping experiences in Second Life.

Research materials: These included flow diagrams of the methodology and the recruitment strategy for the research team's use, a project summary sheet, consent form, and questions for the open-ended and semi-structured interviews.

Experiences with the Ethics Committee: Similar to the process described in the previous project, the proforma and the research materials were submitted to HPMEC. The committee asked us to provide satisfactory responses to the following comments before they could approve the research: how will the privacy and dignity of the avatars during any undisclosed observations in public and private spaces in Second Life shopping areas be ensured; the need for adding information to the project summary sheet about how the data will be stored, privacy, confidentiality and anonymity protocol, the conditions for publications of images or raw data, and to provide an additional contact name.

⁵ <http://secondlife.com/corporate/cs.php>

⁶ <http://www.surveymonkey.com/>

We assured the committee that, during observations in Second Life shopping areas, we will not be “shadowing” the shoppers without permission, recording the text chats, or taking pictures of the shopping areas that include avatars that are not participants in our research. We revised the project summary sheet (which accompanies the consent form) to include information about how the data will be stored, where it be stored, who would have access to it, and how the data, when disseminated, will not be directly attributed to the names of avatars. We also added a second contact name to the project summary sheet so that the participants have an additional contact point if they want to speak to someone else (other than the main researcher) about the research. We revised the consent form to seek permission for the images to be taken during the interviews. The revised materials and response to HPMEC’s queries were approved by HPMEC and we could then proceed with the data collection.

Recruitment of participants: Recruitment was done inworld by approaching participants in Second Life shopping malls or stores. We used the “showcase” feature within Second Life that provides a list of popular shopping areas. Blogs that discuss Second Life also provide leads to shopping areas in Second Life. We visited a number of shops so that we were not concentrating on one or two stores or a particular set of customers. Second Life has a feature where you can make notes about people on their profile tab. We have used this feature to “tag” avatars to ensure that we do not approach the same person twice.

Once we had found some shoppers, the next step involved deciding whom to approach for an interview. The avatar’s profile gives useful information that can enable a match with the criteria for the participants. Sometimes, information in the profile such as “I am friendly,” “I will be happy to talk to you” encouraged us to approach them. So an avatar’s profile is a real help during recruitment and a luxury we, as researchers, have in Second Life that does not exist in real-life.

The final step was to initiate contact with the prospective participant. We sent an instant message inworld with a short introduction to start a conversation. Starting with a request or long introduction may not get a positive response. We asked the potential participant about being interviewed immediately or at another time. We mentioned how long the interview would take. In most cases, the interviews took place there and then after meeting them. We tended not to offer to take them to other locations for interviews and talked to them in the location where we met them.

Qualitative Research in Second Life

Based on our experiences in the two projects, this section describes guiding principles for conducting empirical research in virtual worlds. The principles are not meant to be prescriptive guidelines, but these are our reflections. For purposes of heuristic convenience, we use the framework similar to the one proposed by Knobel (2003) to describe the research process shown in Figure 1.

Pre-study considerations

- Participating in the community
- Research design

Before data collection

- Creating a researcher’s identity
- Preparing the research materials

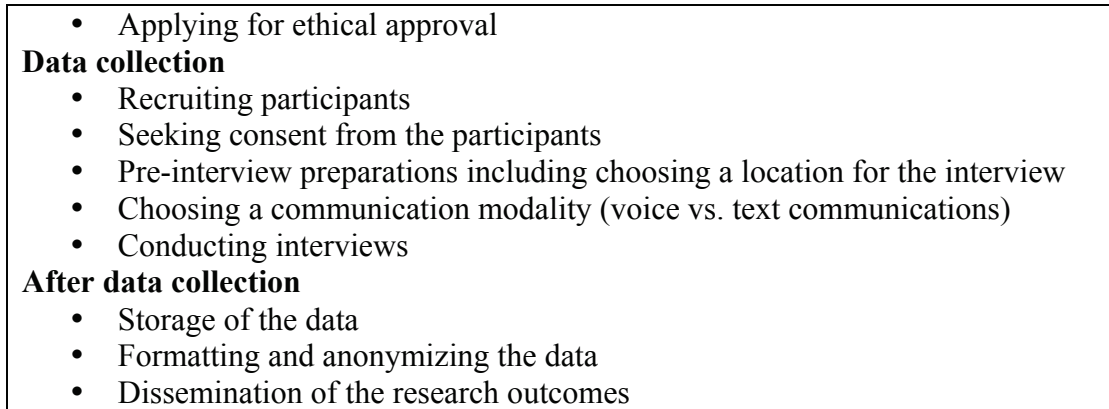


Figure 1: Research process.

Pre-study Considerations

Participating in the community: The researcher should be a part of the online community for an extended period of time before formal data collection (Hine, 2005). It does not mean they should participate in all the activities, but they should be aware of what is going on in a general sense. Knobel (1993) states:

The easy access to online communities afforded by the internet makes it tempting to practice hit-and-run research, where the researcher spends a few days or even a few hours observing the interactions of online participants in a given community, then writes about them as though everything to be known about the community...this kind of snatch-and-grab approach usually provokes scathing comments from the community members being studied (p. 192).

We spent about eight months attending educational events and courses in Second Life before embarking on the project. Similarly, a member of the team (who later interviewed the shoppers) spent several evenings in shopping malls within Second Life. Participating in communities helped us in various ways: our skills of interacting with the Second Life interface improved; we discovered new places in Second Life; our understanding of the communities was enhanced. But being a part of the community means that the researcher has to be reflexive and should continuously question one's biases during the course of research (Boyd, 2008). It is important to work in a team so that there are others who can also question the biases; this improves the validity of the results.

Research design: A well-designed study (Knobel, 2003) should be grounded in a meaningful problem and should be framed by a well-formed and manageable research question and a workable theory or set of theories; it should involve a careful selection of data collection and data analysis tools and techniques that will produce the kinds of data and outcomes required to address the research questions. A well-planned study should also indicate the time the participants will need to commit to, whether the data collection will occur in two or three stages (e.g. an email interview followed by an interview in Second Life), and so on. A poorly planned study will be perceived as ad hoc by participants and may even undermine the confidence and trust in the researcher.

Before Data Collection

Creating a researcher's identity: So as to maintain the participants' confidence in the project and trust in the researcher, it is important that the researcher develops a researcher's

identity. Hine (2000) calls it self-presentation in virtual ethnography contexts. It is important that the researcher completes the profile information of their avatar, i.e. giving some information of real-life (affiliation with their institution), details of the research project, and web links to the project. This information helps the prospective participants find out more about the researcher and the project before they consent. In Second Life, marketing companies and consumer research consultancies are also active. Therefore, in studies related to consumer behavior (as in our second project), it is useful for researchers to identify themselves as academic researchers as the prospective participants may be more sympathetic and not expect or demand incentives or monetary compensation for participation. It is important to maintain a consistent online persona throughout the study. In Second Life, this implies using the same avatar name throughout the study (Boellstorff, 2008).

Second Life offers users several options for customizing an avatar: choosing the gender for a human avatar, or being a non-human avatar, and varying the size and shape, facial features, hairstyles, etc. An avatar's customization from the default appearance is considered as an indication of the user's expertise in Second Life or the time that they have spent in Second Life and that may influence their credibility as an Second Life researcher (Malaby, 2008; see also <http://tinyurl.com/ybtwhck> in which the author discusses how, once the technological and Second Life-competence barriers are overcome, the user begins to feel empathy or care for their avatar and the avatar develops a recognizable identity in its own right). Researchers of games are known to "level up" their avatars before conducting interviews with the players, particularly in game-based virtual worlds (Brignall and Van Valley, 2007). In Second Life, the equivalent of "leveling up," would be to customize the avatar suitably to demonstrate their Second Life expertise and also commitment as a participant in the community. Some researchers take it a step further and customize themselves to fit in with the community they are researching. For example, a researcher, Backe, assumed the role of a Neko before conducting research on Nekos in Second Life; Neko is a human avatar that wears cat ears and a tail, and typically affects a cat-like attitude in Second Life or role-play as cats (Backe, 2009).

Preparing the research materials: The research materials constitute of: the flow diagram of the methodology (stages in data collection and data analysis), consent form, project summary sheet, interview protocols, and any other data elicitation materials based on the techniques that are being employed in the research design. The flow diagram of the methodology can help guide the research process and could be a useful document for review by the Ethics Committee. The interview questions should be short so that they can step through one at a time to ease the interactions when using instant messaging or text chat in Second Life. Also, overly formal language and research jargon should be avoided as it might intimidate or alienate the participants.

Applying for ethical approval: Each institution has its own procedures and codes of practice for conducting research. There are two key general Open University governance documents that describe: (a) codes of practice for conducting research and (b) ethical principles for research involving human participants⁷. In the educational project, we followed the British Educational Research Association's ethical guidelines for educational research⁸. In the consumer behavior project, we considered the guidelines of the British Psychological Society⁹.

⁷ <http://www.open.ac.uk/research/research-school/resources/policy-information-governance.php>

⁸ <http://www.bera.ac.uk/files/2008/09/ethical.pdf>

⁹ http://www.bps.org.uk/the-society/code-of-conduct/code-of-conduct_home.cfm

From our experiences on the two projects and other projects at The Open University, the following are some of the key aspects that the ethics committee are looking for: completeness of the project summary sheet so that the participants can give informed consent, participant's right to withdraw; whether the incentives being offered can create a bias in the sampling or in participant responses; compliance with the legal requirements in relation to the storage and use of personal data. The ethics committee is concerned about eliciting emotions or altering the moods of participants. Ideally, a study should not make the participant feel any discomfort or anger that is more than what happens in their everyday interactions. Being completely honest about the study and giving an outline of how the interview will be carried out can avoid this. In Second Life, it is difficult to judge emotions, therefore, the best practice would be to use polite gestures and avoid using words that may be interpreted wrongly, and be very careful if humor is used.

Data Collection

Recruiting participants: Once a targeted set of participants has been defined, as discussed in the project-descriptions, there are various ways to send calls for participation such as inworld options (notice boards, group messages, instant messages to individual avatars) and real-world options (such as emails on mailing lists, web-based surveys, personal requests as in our educational project). When interacting with prospective participants, it can be reassuring for them to hear that the ethics committee of the institution has approved the research.

The most direct way to recruit inworld is to talk to the users directly, as described in our consumer behavior project. If there is a specific subgroup of participants that is being targeted, for example consumers, artists, or educators, then the researcher should go to specific places and events where they are more likely to be present, such as malls, concerts or online campuses. When the researcher has found a place where users visit frequently, then it would be useful to plan some criteria to guide the selection of participants.

Seeking consent from the participants: Before collecting data, acquiring informed and written consent from participants in which the participants understand and agree to their participation without any duress is a condition for research involving human participants. The difference between acquiring consent in person and through virtual worlds is the ability to get a handwritten signature. In our projects, we provide the participant the project summary sheet and consent form as note-cards inworld. If the participant acknowledges (through an instant message) that they understand and agree to participation, then that is taken as their consent.

Pre-interview preparations including choosing a location for the interview: In the educational project, the interviews were pre-planned. As a preparation for the interviews and if the participants had not participated in the web-based survey, we asked them to fill in a pre-interview questionnaire. This questionnaire captures the background information about the person; how long they have been in Second Life; avatar name, and some specific questions related to our project. We also ask the how they would like to be interviewed (Skype¹⁰/phone/inworld). We have interviewed 36 participants over the last year and we have had only two requests for phone interviews, the rest have all preferred inworld interviews. In our pre-interview questionnaire, we also check whether the participant has preference for audio or text.

¹⁰ <http://www.skype.com/>

There are other preparations before the planned interview session such as: visiting the interview location; testing the audio; checking that the seating arrangement works as most avatars prefer to sit during the interview; checking that the default seating postures on the seats are not too relaxing and match the context of the interview. A café area works well as it is semi-informal and friendly; but a setting that is too informal or too formal does not work very well. Some Second Life spaces have lot of background noise such as water flowing or wind blowing. It is useful to avoid such places; also choose locations that are not too busy so that you are not interrupted during the interview session. The land can also be made private, so that there is no public access, which will reduce the number of possible interruptions that could occur during the interview.

It is useful to send an SLURL of the location to the participant where you are planning to meet. However, it is good to check the preference of the participant about where they would like to be interviewed. In our educational project, some participants offered to meet us on their islands so that they could take us for a tour of their learning spaces or islands during or after the interviews (designs of learning spaces was the focus of our project). In the shopping project, the interviews have been conducted through instant messages and in the shopping locations inworld. Choosing or arranging a location was not an issue as the interviews were conducted wherever we met the consumers.

We have noted that some participants may not want you to be a “friend” or “contact” in Second Life. Therefore, we do not offer participants the opportunity to be contacts unless they ask.

Choosing a communication modality (voice vs. text communications): In Second Life, there are ethical concerns about using voice and text. While voice can bring in the emotions of the speaker/participant, create the sense of co-presence, and may also help to establish rapport with the researcher, some participants prefer to use text. Voice projects information such as a user’s gender, ethnicity and age, thereby interfering with the anonymity which many users value in virtual worlds. These virtual worlds, with the emphasis on fantasy, offer users the possibility of experimentation with role(s) different from their real-life identity (Turkle, 1995; Ducheneaut et al., 2009). Users may, therefore, be concerned about revealing their real life identity to other users. Using voice reveals part of the user’s real-life identity that is at odds with the “fictional presence” they would like to maintain (Wadley et al., 2009).

In our consumer behavior project we used inworld instant messaging, while in the educational project we provided the option to use voice as well, depending upon the participant’s preference. If the participant had the option of either audio or text (as in our educational project where we knew both their Second Life and real-life identities), it was useful to have the initial introductions using voice and then move to the text for the interview. The text provides a ready-made transcript for analysis.

There is a concern that, for effective interviews, it is useful to develop a rapport with the participants (Seidman, 1998) and that instant messaging or text chat can make developing this rapport difficult (Voids et al., 2004). This concern could be less of a problem in a virtual world because the visual presence of the avatars may help to develop the initial understanding required.

The instant messaging window in Second Life provides privacy in text and voice communications between the participant and researcher, otherwise others near the interview location could pick up audio and text chat if it were in the local chat window.

Through the preferences menu in Second Life viewer, it is useful to set up a Second Life folder for saving the chat or instant messages. Before the interview, it is helpful to check that the folder is actually recording the text.

Conducting interviews: During a real-world interview, the researcher can show interest in the participant's responses, usually by nodding, eye contact and other body language. Although Second Life has a set of gestures, we have found text more helpful in our conversations as gestures can get missed if the participant is not paying attention to the avatar. It is easier for the researcher to send prompts with simple statements such as "tell me more about [...].", or type in phrases such as "fantastic," "thank you," "that was interesting," "great," and so on, at appropriate time-intervals during the interview to show our appreciation.

We keep a text editor open during the interview so that when we are listening to or reading the participant's answers, we can write any additional questions in the text editor and copy and paste these questions in the instant messaging window or ask the questions at the right time. The instant messaging window in Second Life provides an indication of awareness through prompts (e.g. <avatar name> is typing...) that the other user is writing in the instant messaging window. This helps the researcher to wait and pace the questions accordingly.

Physical discomfort is also a risk if the interview is taking longer than expected, such as fatigue and eye strain for the participants. There should be opportunities for the participant to take breaks during the interview, and the researcher should not exceed the agreed length of the session. In any case the interview should not be more than an hour long – this is a real-world guideline but it is also useful in Second Life.

In a Second Life focus group, the researcher take turns in asking questions from the participants, just as they would conduct focus groups in the real-world. If a researcher wants to take snapshots or screenshots (images which involve the participant), it is courteous to ask the participant for permission, even if a prior consent has been taken via the consent form.

After Data Collection

Storage of the data: There are practical, ethical and legal implications. The practical implication relates to how easily the data can be accessed for analysis. Ethical implications relate to the protection of a participant's identity. A clear protocol for handling data gives participants peace of mind that their personal information will be handled securely and for its intended use. Unethical handling of data can also have legal consequences.

Planning how data will be stored can also help later in the research process when it is time to do the analysis. In Second Life, logs of text conversations can be saved automatically on the researcher's computer. Researchers should move these files to a secure/encrypted folder after the interview and delete the remaining unnecessary logs. In our projects, we have used encrypted USB drives (e.g. <http://www.ironkey.com>) for movement of data between machines. We also create encrypted folders on the hard disk using the software [http:](http://)

[//www.truecrypt.org](http://www.truecrypt.org) . We also store our data on the specific project spaces on the university servers (as backups).

Formatting and anonymizing the data: Once the Second Life interview is over, it is important to remove the avatar name from the transcript (log) and to anonymize it suitably. In Second Life, the participant's avatar name is an identifier and, therefore, the norms of anonymizing participant's real names in real-life are the same for protecting their avatar names. It is useful to maintain a file with the avatar names and the corresponding identifiers (or pseudonyms) and to save this file in a secure place (e.g. in an encrypted folder on the computer or in a secure server) so that the participant can be easily traced back and contacted if a query arises during data analysis. Audio recordings should also be stored in secure folders.

Dissemination of the research outcomes: Researchers are duty bound to represent the study participants fairly, respectfully and with dignity; for example, any transcript used in any reports or papers describing the research should have any grammatical or spelling mistakes corrected (Knobel, 2003).

Other considerations

Researcher skills and training: For conducting research in Second Life, the researcher should be skilled in using the Second Life interface: for example, navigation, communication (instant messaging, text chat, audio, through note-cards), giving and receiving objects inworld, and camera control. Spending some time on a regular basis in Second Life, and in the community which is the focus of the research, helps to develop Second Life skills as well as getting acquainted with the social norms, etiquette and rules of the community. Furthermore, the researcher should be familiar with the ethical guidelines of conducting online research. A number of resources for ethical guidelines have been suggested in this paper.

If the researcher plans to conduct tours or group interviews, it would be useful to learn about setting up a group in Second Life and the communication protocol within an Second Life group. Some of the participants in a focus group or tour may not be familiar with the group interactions, so it would be helpful to ask the participants about their experience and set up individual or group training sessions ahead of the actual session. For a tour or focus group, it would be useful to have a facilitator, so that the researcher can ask the questions and run the session, while the facilitator can help with any technical problems that individual participants may experience during the session. The consent form and the project summary sheet should mention that presence of the facilitator in the session along with the main researcher.

A virtual worlds researcher requires the skills and training of conducting both offline and online research since a three-dimensional space of a virtual world encompasses the characteristics of face-to-face or real-world interactions and yet the researcher may not have any offline or real-world interactions with the participant. Therefore, interviewing skills, skills of facilitating focus groups and conducting tours in real-world will help with research in virtual worlds. Similarly, developing skills of reading and analyzing online conversations in discussion groups and social networking sites such as Facebook and Twitter will also contribute towards a virtual worlds researcher's skills and development. It is also useful to keep a diary/log of one's experiences as a researcher for self-reflection and for sharing the experiences with other researchers.

Adhering to Linden Labs’ Community Standards of Practice: Community standards are regulations that govern the social behavior of Second Life users (<http://secondlife.com/corporate/cs.php>). There are two of the six standards that researchers should be specifically aware of and which are related to (i) privacy, disclosure and anonymity of the avatars; and (ii) disturbing the peace.

(i) There is an option for a user to disclose details of their real-life in their avatar’s profile. A Second Life user does not know when someone views their profile and there is no option to block others from viewing the profile. If real-life information is required for research purposes, we recommend researchers request a participant’s real-life information, even if it is available in their profile because the participant may not want to associate their real-life details with the research project in question.

(ii) There are two sub-processes during research where there is a risk of disturbing the peace: advertising and recruitment. The researcher must be selective about where and how often they advertise and approach users. Researchers should be aware that advertising on someone’s privately owned land in Second Life, or during events could be seen as disturbing the peace. Therefore, advertising should be confined to public spaces, unless given permission beforehand, and, even when advertising is in a public space, researchers should self regulate.

In our shopping study, we looked for participants in Second Life stores by directly approaching customers while they were shopping. To minimize our disruptive behavior, we did not visit the same store more than once a week, and we did not stay in the same store for more than one interview at a time. Recruitment was done via instant messaging, rather than broadcasting in the store’s local chat. It will be up to the discretion of the researcher how they perceive disruptive behavior.

Conducting pilot studies: Evaluating the research materials with two or three colleagues is helpful to iron out problems such as ambiguity and completeness of the interview questions. Running pilots also helps to check whether the time it takes for, say, an interview does not exceed the planned time. Prioritization of questions, checking for repetitions, etc. can help to bring the interview protocols within the desired timings.

During our pilots in the educational project, a colleague discussed usability of Second Life learning spaces and their impact on student engagement, an aspect which was an unanticipated thread of enquiry. Her inputs led us to change our interview materials and to develop an additional strand for data collection and analysis (Minocha and Reeves, 2010a). In the pilots of both projects, we went through the entire process of data collection, analysis, and interpretation to check whether our research questions were being answered. Pilots are time consuming but they provide a sense of confidence for the main study.

Using inworld data collection tools: We have not covered the asynchronous inworld data collection tools in this paper. There are inworld survey tools, questionnaire kiosks, and so on, which can be used to collect data (e.g. see <https://www.xstreetsl.com/> or the Second Life Marketplace <https://marketplace.secondlife.com/?lang=en-US> which has a number of tools). Quantitative data on an avatar’s origin, behavior, and frequency of visits can be obtained via tracking systems available from inworld vendors. There are also spying devices which can be used to report conversations and record visitors’ movements even when the researcher is not

present inworld and on site. It is, however, very important to emphasize that using such spying devices might infringe Community Standards of practice and should be used with caution and only if there is a research need and after telling the visitors that such devices will be used.

It is important for researchers to be aware that such tracking tools and spying devices exist so that they can take some measures to counteract these devices. For example, in order to protect the anonymity of the participant and for the security of the data, it is important that audio and text conversations take place within the instant messaging window and not in the local chat window so as to prevent the conversations being picked up by any passers-by or spying devices.

Combining offline and online interactions: Virtual worlds, like other online spaces such as newsgroups and discussion forums, allow users to represent themselves and socially interact in ways that are quite different from their offline personas (Turkle, 1995). The characters that users adopt in virtual environments are “self-made” people (Reid, 1995) that enable them to try out new identities or to express facets of their personality suppressed in offline life. Some researchers (e.g. Turkle, 1995; Orgad, 2005) have suggested triangulation of methods that combine offline and online interactions with the participants to increase the validity and for adding authenticity to the findings obtained in online spaces. However, we argue, similar to Orgad (2005) and Hine (2000) that conducting offline interactions with participants should not be driven by the assumption that the offline interactions would reveal more authentic or more accurate information than that generated by online interactions. Rather the rationale for combining offline and online interactions with participants should be grounded in the research context and goals. If the aim is to conduct research about phenomena in the three-dimensional spaces in their own right, as in our two projects, then the question of offline interactions with the participants does not arise (Hine, 2000).

Conclusion

The guiding principles presented in this paper are based on our experiences of conducting qualitative empirical research, primarily through interviews and focus groups in Second Life. However, some of the principles relating to research design, ethics and maintaining anonymity and privacy of the participating avatars will also be useful for researchers who are applying quantitative research techniques in Second Life, and to researchers who are aiming to conduct research in virtual worlds other than Second Life.

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Acknowledgements

The research presented in this paper has been supported by the JISC's Learning and Teaching Innovation Grant, Centre for Open Learning of Mathematics, Science, Computing and Technology, one of the Centres for Excellence in Teaching and Learning at The Open University, UK, and the Faculty of Mathematics, Computing and Technology at The Open University, UK. We would like to express sincere thanks to all the participants in our research. We are grateful to our colleagues Dr. Anne Adams and Dr. Karen Kear of The Open University, UK for their comments on this research.

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