

INFO580

Research Project:

Proposal

Virtual World Libraries: Challenges & Strategies

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Virtual World Libraries: Challenges & Strategies

Virtual World environments provide libraries with an opportunity to overcome many of the challenges faced by traditional online library interfaces, add some of the benefits of physical environments in a virtual space, and draw on some of the engaging features of online video game systems.

This research project aims to unpack and explore these three areas, using a qualitative methodological approach. This will involve a case study of libraries being developed in Second Life, a popular Virtual World.

This project aims to produce a set of guidelines for the future design of libraries in virtual worlds, building on the feedback of research participants in concert with video game design principles.

Problem Statement

This research aims to consider the issues and challenges surrounding the design of a Virtual World Library, and propose how these issues might be overcome or minimised through the application of game design strategies.

Online interfaces to library systems and services have become commonplace.

Libraries deal with a growing number of users who may never step foot in the library building but instead use the library's resources via the Internet. These distributed and diverse virtual users have needs that, while they also occur in traditional library settings, require a different set of responses in a virtual environment. Additionally, the realm of the virtual library creates user needs that are unique to this space, and so require a unique set of responses from librarians/information managers.

Information management professionals have become aware of the challenges of providing library services online.

The important role that the library plays as a physical location in the process of information seeking is increasingly visible. The library is more than just a place for housing resources, it is a place for people to collaborate, socialise, and seek assistance. As access to library materials is provided through online database subscriptions, the role of the library to facilitate and create a supportive environment to assist patrons in accessing material is becoming all the more important. Despite their method of access, users could still benefit from bibliographic instruction sessions, reference interviews, and assistance using the library systems. In this environment, it is crucial that contemporary libraries pay close attention to the design of their online systems - both to

make them intuitive to use, and also to provide instruction and support to users in making good use of the material the library provides access to. Many libraries have been experimenting with methods of augmenting their online interface, such as providing real-time reference services to patrons via instant messaging.

Libraries are exploring the use of Virtual Worlds as library interfaces.

Reference services by instant messaging is just one way that libraries have been seeking to provide a greater depth of service to their virtual patrons. Some libraries are also experimenting with providing library services in Virtual Worlds. MMOs (Massively Multiplayer Online games) have gained attention among social science researchers and others interested in virtual environments for learning and collaboration. MMOs are recognised for having naturally forming communities of practice - made up of players of the game who support each other and teach newcomers how to be effective when playing the game - a function that could be beneficially translated to library services by the adoption of Virtual Worlds by librarians. Additionally, MMOs have attractive, easy to use interfaces that make it entertaining and simple to keep track of often very complex sets of information. Features of Virtual Worlds, such as these could be utilised by librarians in order to overcome the challenges they encounter in providing information to users.

There is a need for research that examines the key issues for the design of Virtual World libraries.

In response to this contemporary climate of change in library services, this research seeks to explore the design challenges and issues that arise in the implementation of a virtual world library. While it will be possible to extrapolate such challenges as faced by traditional online libraries into the context of virtual world libraries, there is a clear need for first hand research into these

issues taking into account the experiences of actual users. A lack of literature that specifically examines libraries in virtual worlds means that libraries seeking to design a virtual world presence have a limited foundation from which to begin. As more libraries begin to provide services within virtual worlds they will be modelling their online interfaces on techniques already in use in virtual worlds and online games. There are presently no formal studies that speak to the benefits of online game environments for libraries. There are also no studies that consider which elements of virtual interactive environments might be most useful for the design of online spaces for library users. There is a need for research and guidelines to be developed to support the development of these kinds of information services. Research of this nature could serve to educate virtual library designers, and encourage new innovations in this new area.

Literature Review

Challenges for Libraries Online

The way that libraries are viewed has changed over the past two decades. In recent LIM literature, there is a distinct awareness that libraries can no longer be defined as places where items are collected and 'held'. Instead libraries are now seen more as being 'portals' that aggregate and provide value-added services for library subscriptions to materials held externally (Graubard & LeClerc 1998). Additionally, access to these materials and services are made accessible to a far broader user-base via online access. The growing numbers of 'virtual patrons' that use these 'virtual collections' have emerged in concert with the development of distance learning initiatives in universities and schools (Moyo 2004) and from increasing personal familiarity on the part of library patrons with Internet technologies and environments.

Research into the changing trends of library patrons has noted (Lombardi 2000) that the focus of users is centred around access to library material instead of on the location in which it is stored. In a 2002 study, Denise Troll Covey discovered that "users want libraries to offer a seamless presentation of collections and services regardless of where, by whom, or in what format they are managed. [They] want technologies that enable them to bring these materials together into synthetic wholes for particular purposes" (Marcum 2003). This has been a common emerging theme in academic research over the past few years (also see Anderson 2002, Bertot 2003). In addition, Lesley Moyo's research into Penn State University students showed that users wanted fast, wide-ranging access to full text resources. Significantly, users wanted to be able to use library resources by themselves, and at any time that suited them, and to be able to ask questions of a virtual librarian immediately, if they should face any difficulties (Moyo 2004).

While users were comfortable and eager to make use of online, aggregated library resources, Moyo's study also showed that these users nonetheless still required the same levels of guidance and instruction when searching these resources. This point has been emphasised in a number of other papers (see Burke 2002, Desai & Graves, 2006). This issue, then, presents one of the key challenges for libraries operating services in an online environment. In many ways, the need to support users working with online research tools is even greater than their brick and mortar counterparts. Online libraries also face the challenge of familiarizing users with the tools they are using, as well as with the particulars of scholarly research methods.

It is additionally important to remember (as Moyo suggests) that virtual patrons, while there may be a temptation to view them as a homogenous group, are in fact each rooted in their own personal contexts and locations which may affect the provision of library services and their experiences of the library - whether from a technological, or a cultural, standpoint.

Several writers have pointed out the challenges that the online environment creates for social and community interactions in the library. Many have pointed to the potential of online social software tools as a way to facilitate the development of online communities around library services (Huwe, 2006). Of particular note is Marcum's (2003, p 639) suggestion that research be done into the use of the library "as both a physical and virtual place" to identify "social interactions which are essential to the mission and values of a library, and investigate ways to support these interactions in the digital library environment".

Game Design and Massively Multiplayer Games

In their foundational book on Game Design, *Rules of Play*, Salen & Zimmerman (2004) describe the aim of game design as "the creation of meaningful play" (p33). They argue that meaningful play emerges from the combination of the actions and choices of players, the system of the game,

and the wider context in which the game exists. Central to this idea is the concept (drawn from theory of semiology) that the elements that make up the game do not in themselves have intrinsic meaning, but rather are interpreted by players in terms of their surrounding systems. Salen and Zimmerman define these 'surrounding systems' as being a combination of Formal (the direct rules of the games), Experiential (the experience of playing the game), or Cultural (players make sense of the game based on the world around them) elements. It is important to be aware that the art of game design involves not only the assemblage of a technological product but also a keen awareness of the way that the end product might be received and made sense of by its audience. The majority of the literature on Game Design refrains from approaching games from a complex conceptual standpoint in the manner that Salen and Zimmerman do. Instead, most texts focus on the actual process of designing a game and the discussion of traditional elements that usually go into a finished game product such as Gameplay, Narrative, Character Development and Game Balance. Salen and Zimmerman are in fact quite aware of this in their work. They write: "The definition of 'game' that helps a game designer to create a new genre of commercial product will be very different from a definition that helps a sociologist to construct a new research problem about player behaviour". Their second book, *The Game Studies Reader* (2006), attempts to give to both groups the opportunity to look "at their own work through the definitions of the other".

Arriving at an exact definition of Massively Multiplayer Online games (MMOs) can typically require the treacherous negotiation of the numerous sub-genres of this style of game. To facilitate an introductory description such as this one, I have in the past found veteran game designer Raph Koster's broad definition of a Virtual World to be one of the most useful in that it conveys the key elements which are generally common to all MMO games. Koster considers a virtual world to be: "a spatially based depiction of a somewhat persistent virtual environment, which can be experienced by numerous participants at once, who are represented within the space by avatars". Koster's definition entails what I consider to be the three most important aspects of MMOs: the game world is based on a virtual spatial metaphor, that this environment is

persistent (always-on), and that it supports co-present avatars. The definition also refrains from including any kind of description of the kinds of gameplay that might occur in this system, leaving it open for combination with any of the various kinds that might exist in an MMO, or for it to potentially be a space that focuses just on socialization or communication.

Games provide environments that can enable users to practice vital learning skills. James Paul Gee (2006) suggests that games allow players to experience a meaningful environment composed from a wide range of media formats that enables them to engage with problems and consider the complex design of both imagined worlds and social relationships. Gee considers that games are environments that potentially allow players to practice "active learning" in a way that can cause them to evolve skill in:

- recognizing and deploying the different meanings of the game's various elements within specific contexts in the game system,
- understanding what patterns or behaviours the game's design allows,
- thinking reflexively about the game as a designed object; "a complex system of interrelated parts meant to engage and even manipulate" (p256),
- engaging with others who are also familiar with the game in order to (re)negotiate or explore the meanings of the game's elements.

The development of skills like these means that well designed 'non-serious' games themselves can be environments that encourage the development of useful, potentially transferable skills and confidence. Additionally, more 'serious' games and game-like environments that are designed in order to help the player acquire skills or understanding in a particular subject could allow learners to gain a situated understanding of the production and negotiation of objects, systems, and rules existing in that subject.

Online games provide collaborative spaces where participants help each other, both directly and indirectly, to learn to use the game system, and to accomplish objectives within the game. Another feature of game

environments that has drawn academic interest is the growth of online 'communities of practice', in particular around massively multiplayer online games (MMOs). Posing arguments similar to the broader theories put forward by Gee, Constance Steinkhuler suggests that the process of learning in any specialist topic involves a progression towards increasing participation in a 'community of practice'. Through several excellent research papers and her dissertation (2005, 2006, 2006b), Steinkhuler shows how the players of MMOs work together to solve problems in the game and to teach newcomers the required behaviours and skills to function effectively in the game world and wider community.

Lisa Galarneau is another important scholar that contributes to this discussion. Describing player behaviour in MMOs she writes: "groups of players comprised of individuals from around the world emerge in an entirely decentralised and self-organised way, engaging in group pursuits and assisting each other to learn how the game world functions, or even co-producing the game world in a negotiated dance with developers" (2005). What's more, says Galarneau "the gameplay mechanics are generally such that true mastery of the game can only be achieved by working collaboratively with other players". Galarneau and Steinkhuler agree that multiplayer online games are worthwhile objects of study due to the fact that these communities of learning are emerging spontaneously, or "in naturally occurring contexts" (Steinkuehler 2004).

Gaming communities of practice are not only places where experienced users give direct help to newcomers. Galarneau also argues that there is the opportunity for individuals involved at the fringes of these communities to learn by observing and mirroring the behaviours and lessons of others.

Library and Information Management experts have begun to look to virtual world environments as one possibility for enhancing online library and information services. John Kirriemuir (2005) points out a number of ways that digital information services and online games are similar. Kirriemuir compares the data processing functions of games and digital libraries suggesting that

digital libraries might learn from the techniques that online games use to handle vast amounts of changing data. Also, digital libraries and online games both often provide their users with an exploration metaphor. Users of digital libraries and online games alike are both on a 'knowledge quest' (a term coined by Walt Scacchi, cited in Doshi, 2006) of some kind.

Ameet Doshi (2006) also sees games as a way to build community and engagement in libraries. Games are an opportunity to "engage students in an environment that is relevant to their world view" (p. 16) in a way that encourages interaction between librarians and patrons. Doshi suggests that libraries could attempt to make their own games to interact with students, simultaneously creating valuable partnerships with computer science or engineering departments.

Librarians already working in Virtual World libraries in Second Life have experienced the possibilities outlined by the writers mentioned above first hand. In a recent interview, Rhonda Trueman (an academic librarian) describes Second Life as "much more than a game". She continues: "It is an active, growing, learning environment. Gamers are learners. They may learn in non-traditional ways, but there is a depth to education through Second Life that may exceed traditional learning. The learning experience in second life can be immersive, collaborative, and creative. When students participate in a learning environment which is familiar and comfortable, gaming, online gaming, and virtual reality, they learn by exploring, by working together, by making mistakes and rectifying them, by coming up with creative and innovative solutions, and most importantly by putting theory into practice" (2007, p86).

Research Question:

The project covers one key research question, but the focus questions that stem from this question fall into two categories: analysis of issues in the environment, and critical exploration of design possibilities virtual world environments.

What are the issues & challenges for the design of Virtual World Libraries?

- What are the main problems experienced by users when using virtual worlds as a library interface? What are the benefits?
- What are the main challenges for librarians providing services in this environment? What are the advantages?
- How might these positives and negatives be similar to those faced in the development of other online library services?

- Can successful elements of physical libraries be simulated in virtual world environments in a way that brings their strengths to patrons and librarians?
- How might the designers of virtual world libraries tailor library services to this unique online environment?

Research Objectives:

The outcome of this research project will be the exploration of two general areas:

To identify the issues & challenges for the design of Virtual World Libraries, and the experiences of users and librarians in this environment:

- Explore how these issues compare to the challenges faced by designers of traditional online libraries.
- Highlight key areas that designers need to focus on when developing virtual world library services.

To consider solutions to these issues based on feedback from virtual world library users and librarians:

- Make use of theories from game design as a frame of reference.
- Outline several best practices for would-be virtual world library designers.

Methodology

This research project will employ a qualitative approach, with the aim of collecting and constructing a detailed, descriptive exploration of the stories of various participants (including users, librarians, and designers) concerning their participation in Second Life Library:

"...the craft of qualitative research involves a holistic approach [meaning] that the practice of qualitative research is reflexive and process driven, ultimately producing culturally situated and theory-enmeshed knowledge through an ongoing interplay between theory and methods, researcher and researched....qualitative research produces both exploratory and highly descriptive knowledge..."

(Nagy Hesse-Biber & Leavy, 2006, p.5).

Cresswell (2003) suggests that the exploratory nature of qualitative research is useful when "the researcher does not know the important variables to examine... because the topic is new, the topic has never been addressed with a certain sample of group of people, or existing theories do not apply with the particular sample or group under study" (p.22). In the case of this research project, all of the suggested categories potentially apply. Additionally, the argument for applying a qualitative approach to this research is supported by my own experience using qualitative methods, providing me with a degree of familiarity with the ideology and techniques of this model. The specific method of data collection that will be used in this research is the in-depth interview. Interviews will be conducted with individual participants to gain primary data on the issues facing participants in the Second Life library, as a case study of virtual world libraries as a whole.

In-depth interviews, also known as intensive interviews (Nagy Hesse-Biber & Leavy, 2006, p119), are designed be flexible and allow respondents to express their ideas freely. Questions will be constructed so as to allow the

introduction of new, unanticipated, ideas by participants. As stated by Nagy Hesse-Biber and Levy, "in-depth interviews are issueoriented ...the goal of intensive interviews is to gain rich qualitative data, from the perspective of selected individuals, on a particular subject" (2006, p.120). These interviews will be conducted on an individual basis, as I am seeking narratives from a range of participants about a variety of experiences. Interviewing participants on an individual basis should allow them to express their ideas and personal views with greater clarity and transparency, unaffected by the views of others (as may occur in a group interview setting).

Participants will be drawn from the Second Life community. Second Life users can be regarded as a specific sub-category of users of the Internet and other virtual worlds. It is worth noting that there are significant barriers of entry to the Second Life world itself, for example the requirement for users to be aged 18 years and over, possess a basic level of computer ability and adequate equipment (such as a credit card and a fast internet connection). Therefore, the types of participants involved in this research are pre-determined by their involvement in this virtual world environment. Participants will be a mix of both first time users of the Second Life library as well as experienced veterans. Additionally, it will be necessary to interview librarians and designers of the library itself, in order to investigate their aims and intentions for the library system. Recruitment will primarily be based on word-of-mouth through the Second Life library, although hopefully some individuals will be enlisted to post messages on their blogs about the project. (I will also advertise for participants on my own website). It may also be possible to advertise in Second Life itself, on a noticeboard at the library.

No less than 10 participants will be interviewed online making use of Voice Over Internet Protocol (VOIP) technology to speak with the participants and record their interviews. Where VOIP is not available, instant messaging will be used to conduct the interviews. Participants will be given an information sheet outlining the aims of the research and the nature of their involvement. An application will be made to the Human Ethics Committee prior to the commencement of advertising for participants.

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The information obtained from the interviews will be examined and analysed in relation to the research question and an ongoing literature review.

Interview data will first be prepared for analysis through the transcribing of recordings of sessions. As outlined in the Research Timeline directly following this session, interviews will be recorded and transcribed in four separate clusters. Firstly, interviewees will be divided into librarians and users. Secondly, while participants will be interviewed individually, they will also be considered in two separate groups of each type of interviewee.

Organising research data in this way, and beginning the transcribing and analysis process while the interviews are still in process, will facilitate an emergent and evolving analysis of the material and allow ongoing reflection and questioning of the research question. This will make it possible for the focus or technique used in the interviews to change if initial interviews do not provide useful information. It will also allow particular issues that are raised by participants to be explored further in later interviews.

Collected interview data will be assessed using a coding process to systematically analyse and break down the body of data into key categories. The categories will be both based upon criteria drawn from the literature and also from repeating points of interest or themes that emerge through the interview process. Initially the coding process will involve reviewing the material to gain an overall sense of common themes and ideas as presented by the participants, but as more data is gained these general themes will be narrowed and grouped together to form a comprehensive picture of the discussions that took place.

To making sense of this picture it will be necessary to draw on both the researcher's personal interpretation and experiences of Second Life as well as drawing a comparison with findings and theories provided in existing literature on game design and online learning environments. In the final research report, it will be possible to present both a detailed description of participants and the environment that is the subject of the research and to

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consider whether new information confirms past views and/or suggests new areas to explore.

Research Timeline

(17 May to 10 October, 2007)

Weekly reports will be made to the research supervisor, Brenda Chawner, throughout the course of this research. The scheduled fortnightly telephone meetings carried out during the proposal phase will continue as the research progresses. In the period between the submission of the Proposal and the start of the research, a slightly more detailed calendar will be made of items of work to be submitted each week.

Before project begins: (sometime before 17 May)

- Submit Human Ethics Committee (HEC) application, upon receiving approval of proposal.
- Submit Calendar of "Weekly Due Items" to Brenda based on this calendar and the rest of the proposal.

Week 1 (17 May - 23 May)

- Waiting for HEC approval.
- Work on full Literature Review: Expand & Write draft of section on Library Studies. Work will focus on writing about challenges faced by virtual/online libraries in serving the needs of users & making their interfaces friendly.

Week 2 (24 May - 30 May)

- Work on full literature review: This week cover draft of expanded Game Studies section. In particular work will focus on developing coverage of the practical game design portion of the literature.

Week 3 (31 May - 6 June)

- HEC approval should arrive.
- Set up information note cards (with HEC details and contact info) for handing out to likely research participants I might meet in Second Life.
- Approach librarians in Second Life about doing research:
- Discuss advertising the research in Second Life
- Interviewing their patrons
- Interviewing the librarians themselves
- Which library in the Second Life Library system do they think would be best to seek feedback from?
- If HEC approval hasn't arrived, have the emails typed and complete, but not sent.

Week 4 (7 June - 13 June)

- Continue contact with Second Life librarians about nature of research as in weeks 2-3.
- Begin to hand out note cards and solicit interview participants for the research as librarians give permission.

Week 5 (14 June - 20 June)

- Continue to solicit and follow up interview participants.
- Set up for interviews in following four weeks:
- Find out best/preferred methods for interviewing participants.
- Check that I am able to communicate effectively via these methods and record what is being said.

Week 6 (21 June - 27 June)

- Interview first batch of Users
- Ongoing recruiting during this time if there aren't enough participants.

Week 7 (28 June - 7 July)

- Interview first batch of Librarians
- Where possible & necessary, begin transcribing interview material.

Week 8 (8 July - 18 July)

- Interview second batch of Users
- Where possible & necessary, begin transcribing interview material.

Week 9 (19 July - 25 July)

- Possible Holiday Week: The 25th is my Birthday. There is also the ALA TechSource Gaming and Libraries Symposium in Chicago that I hope to attend.

Week 10 (26 July - 1 August)

- Interview second batch of Librarians.
- Where possible & necessary, begin transcribing interview material.

Week 11 (2 August - 8 August)

- Finish up transcribing interview material.

Week 12 (9 August - 15 August)

- Revisit Literature review with a focus on material that might relate to the research.
- Plan for writing of research analysis.

Week 13 (16 August - 22 August)

- Write Research Analysis Draft
- Brainstorm Recommendations Section

Week 14 (23 August - 29 August)

- Write Research Analysis Chapter

Week 15 (30 August - 5 September)

- Write Methodology Draft

Week 16 (6 September - 12 September)

- Write Recommendations Draft

Week 17 (13 September - 19 September)

- Write Methodology Chapter
- Write Recommendations Chapter

Week 18 (20 September - 26 September)

- Write up Full Draft

Week 19 (27 September - 3 October)

- Brenda looks at Full Draft
- Final edit & cleanup of Draft

Week 20 (4 October - 10 October)

- Research Project Due (which is also a week in case of emergencies).

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