Avatar and *Olly*: Discovering the impact of ICTs on youth social engagement

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This paper presents preliminary research work of the *Avatar* Project, a Victoria University and VicHealth project dealing with young people's use of technology within an online multi-user environment. The paper outlines the *Avatar* project, reports on experiences in establishing a 3D online world for youth participants, and presents the project's research protocol/methodology for its in-depth three-year study. The paper also presents the *Olly Tool*, a new browser-based instant messaging tool that enables researchers to establish a secure [closed] instant messaging network for collaborative classroom work-shopping in an online setting.

Keywords: computer-human interaction, virtual reality and related simulation, social change, ICTs, 3D online environments, Second Life, *Olly Tool*, instant messaging

Introduction

Avatar is a Victoria University and Victorian Health Promotion Foundation project that brings together a diverse range of young people to collaborate on the development of online multi-user communication environments. The aim of the project is to promote mental health through the study of interactions between young people within online communities, particularly those interactions relating to social inclusion and exclusion. Online communities used currently include the *Teen Second Life* virtual world and the custom-built *Olly* browser-based chat and forum tool.

Avatar is a three-year project and is currently in its second year. The project spans a number of youth communities and groups including;

- Visy Cares Youth Hub. [A new youth advocacy centre within the refurbished Sunshine Harvester factory in western Melbourne]
- Victoria University. A range of groups, including:
  - School of Creative Industries.
  - School of Education
  - Youth Transition Unit [Composed of young people with high intellectual potential who are disadvantaged by mental illness, drug and alcohol abuse, family difficulties and other issues]
  - Further Education student groups
  - Other western Melbourne community networks associated with Victoria University.

The project involves a team of staff encompassing both Vocational Education and Higher Education faculties at Victoria University, together with a number of other staff and specialists in youth work, software design and game world construction.

The project model is collaborative, with concept and design elements developed and directed by young people, and technical and project management expertise provided by Victoria University's vocational multimedia and games students and staff. The project involves a combination of face-to-face and online collaboration strategies including social mentoring by an experienced youth facilitator and opportunities for participants to explore ideas of diplomacy and democracy on-line. The project will be run once a year for a total of three years, with each subsequent year providing an opportunity to improve on both the implementation of the development process and the effectiveness of the meeting places being developed.

ICT research

The aim of the Avatar project's research is to discover how social engagement is either enhanced or restricted by Information and Communication Technology (ICTs). The ways in which ICTs are utilized to facilitate social interaction will be studied within a collaborative online 3D environment. Other satellite research projects have also been undertaken for Avatar. These have consisted of software projects including the development of 3D computer game space for social interaction and the development of browser-based communication software such as the project's *Olly* tool.

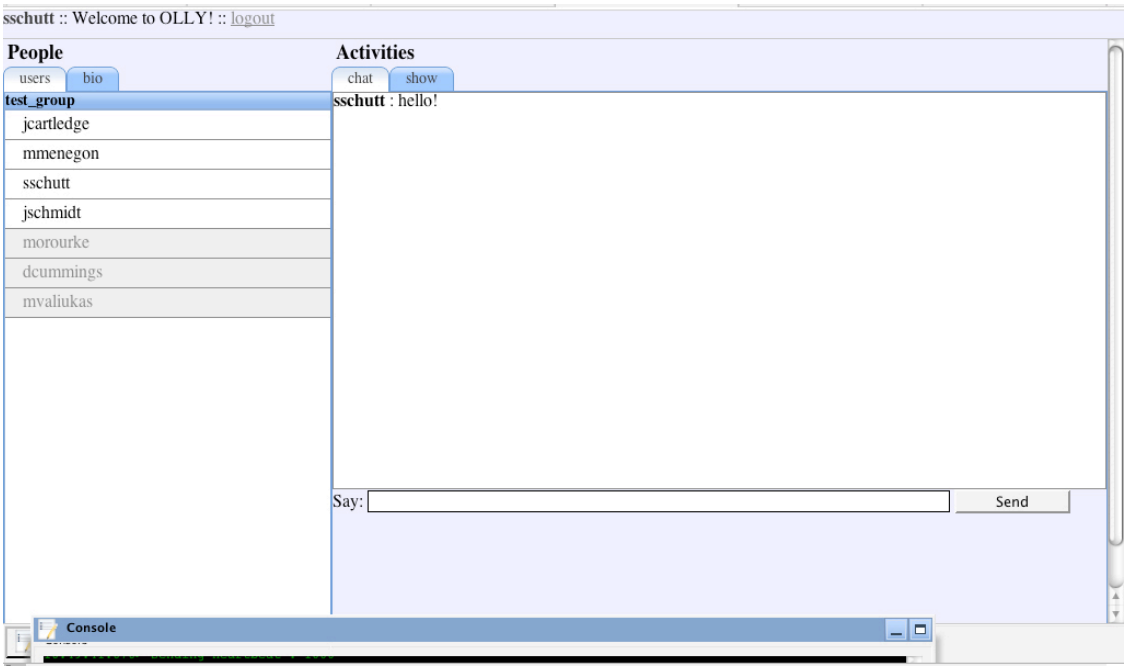

Fig 1: Olly Tool: Screengrab of current work-in-progress interface

The question of just how online environments or online methods of communication enhance social engagement and help to build social capital has been the focus of a range of recent studies. For example the work conducted by McKenna and Green et al [5], Katz & Rice, [4] and Woolgar, [7] point to the apparent capacity for the Internet to enable or enhance social connection. Mckenna, et al [5] posits a view that the anonymity inherent in certain types of ICT promotes connectedness on the part of individuals who for whatever reason might otherwise have problems with starting face-face relationships. The Internet (and SMS) permits people to communicate and express themselves in the real world in ways they might be incapable of, Katz and Aakhus [3]. Thus enhancing their level of social connection and their feelings of confidence.

Currently in Australia, however, not much is known about the social and developmental impacts of Information and Communication Technologies on young people. Although a paper commissioned by VicHealth by Joanna Wyn [8]; *Young people, wellbeing and communication technologies*, brings to light some key issues surrounding this topic, it also identifies ICT as a rapidly evolving area of study, one which has yet to be documented or adequately researched, Wyn et al. [8].

Our plan therefore is to undertake an in-depth qualitative research study to analyze how the nature and use of online environments impact on the formation of interpersonal relationships and communities, and suggest strategies for developing new tools better suited to community- and relationship-building. Our research will draw on existing studies and engage in new studies, providing new data for the field.

Data and analysis

The key themes outlined in the literature on ICT and "at risk" young people include the following broad concepts:

- engagement,
- disengagement and,
- isolation.

The project team will use a range of qualitative research methods such as online e-Interviews, textual analysis of emails, online conversations and other transcripts.

The project will focus on a sample of young people who are actively engaged in using online communication tools, or who indicate an interest in beginning to do so. The interview phase of the data collection will be conducted within a secure domain that restricts access to ensure confidentiality and privacy. The project has also developed a specific browser-based messaging application *Olly* [described in section 5] to facilitate this.

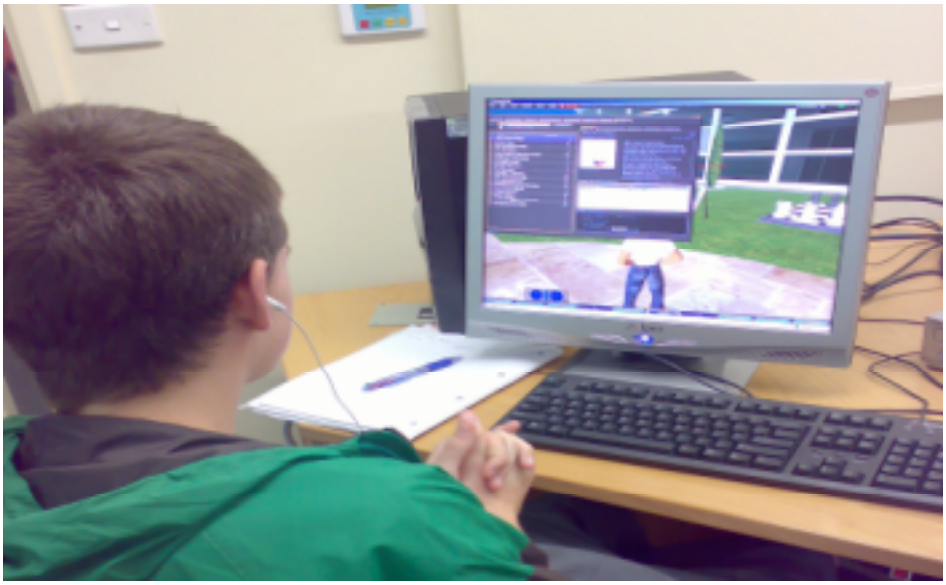

Fig 2: Avatar project: Participant using Second Life

The analysis of the data follows the collection and storage of text-based transcripts of each interview and of any online conversations and emails generated through the project. This textual data will be analysed using a qualitative data analysis tool such as N*Vivo, a purpose-built computer-assisted qualitative data analysis tool.

Design phase questions

1. How do you normally communicate with your friends?
2. Using this method how often would you contact your friends?
3. How much time do you spend communicating with your friends?
4. What do you talk about?
5. Are there any issues that are off limits? That you don't talk about? Why? Why not?
6. After you talk to your friends how do you feel?
7. Do you like playing computer games? What type of game do you enjoy playing?
8. What kind of character do you intend creating?

During the collaborative design phase

1. Describe how working on the design of the Avatar space makes you feel?
2. Do you feel like you are part of a team? Why? Why not?
3. Do you look forward to participating in the design sessions? Why? Why not?
4. In the Avatar space any idea what your character will be like?
5. Have you made friends with anyone in the project? Did the technology help or hinder this?

Within the online Avatar 3D space

1. Describe what it is like to use the Avatar space?
2. What kinds of things have you been doing in the space?
3. Describe the character you designed for use in the Avatar space?
4. Is the character you have created in the Avatar space anything like you?
5. Tell me about the island you created? What's on it?
6. How do you spend your time in the Avatar space?
7. Within the Avatar space what kinds of things do you talk to other participants about? Is there anything off limits that you won't talk about?
8. Are the things you talk about in the Avatar space different to things you would discuss in person, or on a phone?

3D online experiences

Given the special nature and needs of the target youth groups, it was clear that the project's 3D online space was going to require attention and security. The unrestricted accessibility and adult nature of public virtual environments such as Second Life were of initial concern to the project design group. It was deemed essential that a secure, protected environment would need to be established for the project, and it

was estimated that this environment should be able to accommodate between 50 and 100 participants at any one time, including remote access and cross-platform support. The project also required a secure instant messaging service for the group's meetings, discussions and observations, including the secure collection of e-survey research data.

For these security and access issues the level builder within the *Unreal* game engine package was initially selected as the project's 3D online platform. The ability for the Unreal project to be hosted on the secure university server was a main consideration in this decision. However, after a pilot project was run involving a three-week collaboration with VU computer games students and staff and external youth candidates, Unreal was found to be a less than optimal solution. Firstly, the Unreal engine allowed for only a maximum number of 30 participants at any one time. Secondly, the software had to be licensed individually to each machine, which meant that off-site work with youth agency or school computers would require additional investment and installation. Thirdly, although the game engine allows for greater design control, it came with increased complexity and a significant loss of intuition for the novice members of the group. Many of the pilot participants found the Unreal engine to be not as engaging as Second Life, complaining also that the graphics appeared "old and flat". And lastly, the Unreal environment was seen to be isolated from other environments and thereby unable to incorporate participation from others not directly connected to the project, nor to potentially generate a 'life of its own' beyond the three-year lifespan of the Avatar project.

A second pilot exploring *Teen Second Life*, a stand-alone Second Life world designed for under 18s (and educators working with them) has thus far faired better. However, organising background checks for applicants/participants proved to be an onerous bureaucratic exercise, not least because the administrative and set-up processes for Second Life-based educators are unclear, particularly for teams working outside the USA. Additionally, the purchasing of suitable Teen Second Life real estate comes at a considerable and ongoing expense, and long waiting periods currently exist for the real estate to be created and accessible.

A further problem exists for project teams that span the under-18 and over-18 age groups. Teen Second Life and Second Life are entirely separate environments and offer little ability to move assets or participants between environments, resulting in an artificially-created split between activities involving participants who are under and over 18 years old. Lastly, there are still some questions regarding the security and reliability of the platform, including administration access issues and time lags, possibly due, like some of the other problems listed, to the apparently accelerating growth in the uptake of Second Life.
All problems aside, participants so far have found the Second Life environment more engaging and suitable for social interaction and collaboration because:

- Second Life has currency as a virtual-environment: quite a few students are familiar with working within Second Life and already have their own avatars;
- Second Life offers instant feedback, including the ability to investigate what others are doing and, with the help of experienced users, to quickly create one's own assets and environments. In other words, it offers the ability to quickly realize ideas

Furthermore, Teen Second Life's instant messaging system can support e-surveys and offers the ability to automatically port chat transcripts to external environments such as Wordpress weblog sites.

The *Olly tool*

The *Olly* tool is an instant messaging [IM] software program designed specifically for the Avatar online community. Many of the participants in Avatar do not own a computer and are connecting remotely at Internet cafes, Community libraries, Schools and other public locations. The project needed an instant messaging solution that was cross-platform, browser-based and "hassle-free"; i.e. without the need to install specific software components. Additionally, the research team required a secure IM network to conduct e-surveys within the group. Other instant messengers such as *Yahoo*, *MSN*, *Meebo*, *KoolIM*, *Buddy.com*, *RadiusIM*, *Snimmer* and *Mabber* were found to be unsuitable either because they required specific items to be installatied, email registration or because they piggybacked on non secure IM networks.

The *Olly Tool* allows an instant messaging network to be set up securely on a protected server. The software is coded at the server in *Ruby*, at the client side browser end in *JavaScript*, and the GUI elements of the software use the *Dojo* JavaScript library. All of the traffic is ported on a single GDP port giving the tool an added advantage of server firewall protection. It has been tested thoroughly on a large variety of browsers including Safari, Opera, Firefox, Mozilla and works without the need to download any proprietary plug-ins, such as Macromedia Flash or Java. *Olly's* open source nature allows for

participants in the Avatar community to take up its' future development giving it much more flexibility over other IM clients.

Olly is a comprehensive instant messenger and presents synchronous and asynchronous communications side by side. The messaging window also contains another area for file transfer where participants can contribute comments, artwork, audio and video files. Meebo (http://www.meebo.com) currently offers a comparable browser based tool, but it still relies on IM network piggybacking and requires users to have accounts with existing Messenger-type services.

Future research

At this stage the project is engaged in a small-scale pilot within Teen Second Life and is set to expand to incorporate a larger data set comprising a wider sample of the community, including Victorian secondary schools and community groups. The first round of e-Interview data collection will occur in November/December and then across 2008 where the data will be collected and analysed on a periodic basis. We estimate that the social networking analysis and modelling of data sets will occur in the second half of 2008 when we plan to begin publication of any significant findings.

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