Experiential learning through 'real world' placements undertaken in 3D 'virtual world' spaces

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Students who have grown up with digital technologies are said to respond best to multi-modal activities that involve multi-tasking in collaborative, networked environments. It is also argued that such students are interested in 'things that matter' (Oblinger, 2008) and have a desire for experiential learning that engages them in 'real world' issues. This paper describes the use of the 3D virtual world known as *Second Life* as a space for experiential learning for undergraduate students enrolled in a media arts program at the University of South Australia. Two first year students and seven final year students chose to undertake field placements in *Second Life* requiring them to collaborate with organisations and groups providing support services for people who identify as disabled in their actual lives. The issues identified from previous offerings of courses in *Second Life* (Wood and Hopkins, 2008) and the differences in student engagement in these subsequent courses are discussed. The comparisons between these different offerings of courses in *Second Life* provide the foundation for understanding the benefits and potential issues in conducting classes in 3D virtual worlds. It is argued that students will engage in activities within 3D virtual worlds providing they can see the connection between their virtual learning experiences and the impact that they can make on 'real world' lives. When students undertake 'real' placements in 'virtual' spaces the focus is on the interactions with their clients and the skills they can bring to improve the quality of services provided by their client groups. Such findings should come as no surprise if we accept the popular rhetoric that the technology is of secondary importance to our 'generation-y' students; the 'virtual' space is simply the medium that enables students to undertake experiential learning in ways not easily achieved in 'real' world places.

There now exists a substantial body of literature reporting the benefits of 3D virtual environments such as *Second Life* (Dickey, 2005; Carter, 2006; Kemp, 2006; Lee and Christopher, 2006; Liu, 2006; Bloomfield, 2007; Mili, Barr, Harris and Pittiglio, 2008; Jarmon, Traphagan, Mayrath and Trivedi, 2009). While there is no shortage of literature focusing on the reported benefits of such learning environments, with a few exceptions (Krause, 2008; Wood and Hopkins, 2008), there remains a paucity of literature documenting the challenges in adapting these technologies to the teaching and learning curriculum. This paper addresses the perceived gap in literature by reviewing the outcomes of previous trials undertaken by the author using *Second Life* within the undergraduate media arts curriculum, discussing the lessons learned and building on the knowledge gained in redesigning courses in which students are given the option to undertake experiential learning through 'real world' placements in the 'virtual' spaces of *Second Life*.

The following sections discuss the reasons that 3D virtual learning environments have gained in popularity in recent years, and the potential for such environments to be used to engage students in service learning activities are discussed. The findings from previous trials conducted in *Second Life* are reported and the outcomes used to identity both the benefits and possible dysfunctions associated with the use of 3D virtual learning environments in the undergraduate curriculum. A case study is presented as a work in progress to demonstrate the application of 3D virtual worlds such as *Second Life* for engaging students in experiential learning activities on 'real world' projects within a service learning context. Finally, the implications for the use of 3D virtual learning environments for providing 'virtual spaces' for 'real world' placements are discussed.

Background

Students entering universities from 2005 onwards are said to represent a new generation of technoliterate 'Y-ers' (Krause, Hartley, James and McInnis, 2005). This generation, also referred to as 'Generation Y', 'Net Generation' (Tapscott, Lowry and Ticoll, 1998); 'Millenials' (Oblinger and Oblinger, 2005); 'Digital Natives' (Prensky, 2001) and 'Homo Zappiens' (Veen, 2004), have grown up with digital technologies and are said to display particular characteristics including the ability to multi-task, a desire for immediacy, preference for multi-modal learning (pictures, sound and video in addition to text), a need to be socially connected through networked activities, respond best to experiential activities and are interested in social issues (Oblinger, 2008).

It is also argued that our digital natives are entering university already equipped with skill in the use of a wide range of Web 2.0 applications such as wikis, social networking, folksonomy sites, blogging, pod- and vidcasting and 3D gaming. Not surprisingly, many educators are now turning to these technologies to re-engage their students in the face of growing concerns about student disengagement and high levels of attrition (Krause et al, 2005). 3D virtual environments such as *Second Life* have also attracted growing interest from educators who are keen to engage their students in a game-like environment that offers the potential for increased flexibility, enhanced collaborative opportunities and a safe environment for experiential learning activities. These environments are increasingly being used for a range of activities including presentations, discussions, role plays and simulations, historical re-enactments, games design, dramatic performances, creative arts and business modelling.

3D virtual learning environments have been found to effective in enabling learners to interact with information from a first-person perspective (Dickey, 2005) and in offering unique opportunities for students to engage in simulated learning experiences in fields as varied as health sciences (Mili et al, 2008; Cooper, 2007), fashion design (Polvinen, 2007), hospitality and tourism (Penfold, 2008), collaborative story telling (Bakio_lu, 2007), business (Bloomfield, 2007), marketing (Krause, 2008), interdisciplinary communication (Jarmon, Traphagan, Mayrath and Trivedi, 2009) and experiential learning activities (Mason, 2007). Such activities can prepare students for future employment without the constraints of 'real world' industry placements (Chen, 2005). Moreover, as several authors note, 3D virtual worlds such as *Second Life* can facilitate communication skills (Robbins, 2007), collaboration and constructivism (Clark and Maher, 2003), and can also increase students' understanding of cultural differences and other aspects of diversity (Lee and Christopher, 2006).

'Why can't I get my students interested in second life and virtual worlds?'

In a posting to the *Second Life* education listserv, Marylyn Tadros posed the question: 'Why can't I get my students interested in second life and virtual worlds. They all think I am crazy, don't want to take the class, or if they do, they just roll their eyes. Any ideas?' (Tadros, 2008). The numerous responses to her posting indicate the range of possible issues facing educators as they seek opportunities for harnessing the power of 3D virtual learning environments within the curriculum. Yet, with a few exceptions, there is very little published literature documenting the possible dysfunctions associated with the use of such environments within the undergraduate curriculum. These possible dysfunctions are explored in this next section.

In response to the posting by Tadros (2008), several educators shared their similar experiences:

> Katherine Levine (2008) agreed in her comment 'I think they are satisfied with Facebook, busy, busy, busy, and very involved with adults don't know what is hip. I think those using Penguin may be the riper audience. I have managed to get a few to Small worlds to just give VRWs a chance. I also think when virtual realties get a bit more user friendly they will rush. Remember those of us using SL are cutting edgers'.

Esme Qunhua (2008) highlighted the importance of the activities being engaging in suggesting that 'If it is not engaging, we shouldn't claim that we are embracing VW technology because it is engaging (to us alone)'.

Rolig (2008) suggested students might be seeking more structured activities proposing that:

> In many ways, SL is an adult world. It is unstructured, unscripted ...not like the games that appeal to younger people. I think that can be disturbing to younger users. Perhaps "boring" is the best word for it. They expect to be told what to do. Adults are more comfortable with

self-directed discovery. This isn't an absolute, by any means, but I think it is true enough to explain a lot of the reluctance we see in younger residents.

In a similar vein Carrie Kent (2008) reported:

> What we see when we talk to students is the following: very, very few undergrads have the remotest interest in simply going to SL. WoW and other focused environments are what they want. It is graduate students (who are, for the most part, more "adult") who get fascinated when they hear stories about SL.

As these postings suggest, academics do face some challenges in finding an appropriate approach to the use of 3D virtual learning environments in the undergraduate curriculum. Krause (2008) echoed these sentiments in writing about his first experience teaching in *Second Life*, reporting that his students '...claimed to absolutely hate the *Second Life* experience' and noting student comments such as: 'I never want to go inside secondlife [sic] again. AUGH my brain'. Krause goes on to describe student reactions stating that '...they complained about character movement, the user interface, the slow response times, and a variety of other issues. More than anything else, though, students claimed that everything in SL was uninteresting to them—either the RL_equivalent was better, or there was another technology that more effectively delivered a similar experience'. On the basis of his experience and 'After reading similar feedback in course evaluations, and additional complaints about the SL experience' Krause '...vowed not to use SL in the classroom in Spring 2008'. Wood reported similar challenges in summarising the findings from her trials of courses in *Second Life* in the first semester of 2008 (Wood and Hopkins, 2008). As she noted 'While there were some positive responses to the open-ended text questions about the environment, the majority of student comments were negative; the main issues reported by students being the 'inappropriateness of the platform', 'the lack of stability of the server', 'frustration that the activities distracted them from being able to spend more time on tasks they felt were more likely to enhance their employability'.

The next section of this paper expands on the lessons learned from the author's initial trials in *Second Life* and proposes a series of strategies for addressing the identified challenges.

Lessons learned from previous trials in *Second Life*

The trials undertaken by the author in 2008 were undergraduate courses offered in the media arts program at the University of South Australia; *Design for Interactive Media* and *Electronic Publishing on the Internet*. Several supports were put in place both within *Second Life* and on campus to aid students in the transition to undertaking study in the 3D virtual environment. These supports included: a) customised login and orientation for students joining *Second Life* for the first time; b) in-world mentoring by former students skilled in the use of *Second Life*; c) scheduled help sessions both on-campus and in world and d) comprehensive written tutorial guides on the basics of *Second Life* as well as more specific guidelines relevant to the tasks students were taking in *Second Life*.

A custom PHP script (beta version) supplied by Linden Labs (the company that owns and manages *Second Life*) was installed on a University server enabling students to sign-up to *Second Life* via a University Website and to then be teleported directly to the UniSA island orientation area. The orientation section of the UniSA island included several customised orientation tutorials introducing students to basic skills in *Second Life* such as moving, chatting, using IM and customising appearance. Graduate students who were experienced in *Second Life* were contracted to provide individualized mentoring on-campus and in-world at scheduled times. A brief summary of the trials and outcomes follows.

Design for interactive media

There were 90 students enrolled in the *Design for Interactive Media* (*DIM*) course during the first semester 2008. The aim of the course is for students to develop games design skills involving problem solving, creativity, teamwork and communication. Students were free to choose the theme of their adventure games and created the storyboard, script and characters for their chosen game. To reduce the cognitive load on students, the basic building components and scripts were provided so that students could focus more on the narrative of their games and working collaboratively as teams to bring the games to reality. Most students also chose to create custom avatar skins and costumes to be in character with the theme of their game, even though this was not a requirement of the assignment. Student assessment incorporated a grade for the project overall (group score) as well as a percentage assigned to each individual team member based on their contribution to the production. All student teams achieved a

passing grade for their games and it was evident from the assessment process that students had worked effectively as teams, demonstrated advanced problem solving skills as well as basic mastery of interactive games design.

Electronic publishing on the Internet

There were 65 students enrolled in *Electronic Publishing on the Internet (EPI)* in the first semester of 2008. The course provides the foundations for understanding the principles of electronic publishing on the Internet and places emphasis on applying the principles and elements of design to the creation of Web pages, communication skills, team work, and designing a portfolio for online delivery. The topics covered combined theoretical information presented through a series of readings and reflections on theory with the applied skills required to design and develop a portfolio presence in a 3D virtual world. Guest presenters from businesses presented many of the sessions on-campus and in *Second Life*. Students were given the option to attend face-to-face sessions on-campus or attend classes virtually via *Second Life*. Students undertook 3 assignments: (1) a design proposal outlining target audience and design specifications; (2) a prototype of the final website design created in Photoshop and (3) a portfolio shop front in *Second Life* which linked to their online portfolio. Students undertook peer review of each other's *Second Life* portfolio shop fronts as well as the online portfolios.

The findings of the evaluations of these courses have been published elsewhere (Wood and Hopkins, 2008), however, a brief summary of the significant findings follows to provide context for the critical analysis of the lessons learned from these trials.

Findings from previous trials

As reported by Wood and Hopkins (2008), the majority of student comments were negative in their evaluation of their experiences in *Second Life*; the main issues reported by students being the 'inappropriateness of the platform', 'the lack of stability of the server', 'frustration that the activities distracted them from being able to spend more time on tasks they felt were more likely to enhance their employability' (some students suggested other platforms for game design, such as Flash, would have been more useful). Several students remarked on the impersonal nature of the mediated communication in 3D environments, preferring 'real' face-to-face communication than mediated through an avatar representation. One student commented that 'It made interaction with others a little less personal and sometimes hard to follow if you were chatting with multiple people from your group at one time'. While some students enjoyed the flexibility of studying off-campus, several were critical of the interface and functionality to support this kind of learning as reflected in a comment that 'I enjoyed the remote lectures... but the user interface is appalling. The controlling is sluggish and terrible... that I didn't enjoy'.

What was most surprising to us were the number of students who were not convinced by predictions that 3D virtual environments will become as pervasive as the 2D Web as we now know it. Despite visiting lecturers and content provided to students indicating the growth in uptake by businesses, it was apparent from student ratings in the evaluation and their comments that many felt the activities were a waste of time as they could not see the relevance to their future careers in the industry. The following comment by one student reflects the student resistance and lack of acceptance we observed throughout the course:

> No matter how you look at it is still a game. It is just a fad and I don't believe the statistics about its uptake. Too hard to access. I would not use Second Life because I think it's quite pointless when relating to the web. Sure some people use it as a business medium but you don't see the biggest law firm doing business on there do we now? (anonymous, 2008).

Critical analysis of the findings

It was evident from our observations of students throughout the trials that their resistance to the platform impacted significantly on their capacity to immerse themselves in the learning environment. Some students appeared to be resistant because they had preconceived notions of what sorts of activities are valid for teaching and learning. While playful and informal learning should have been an effective means of engaging the students, several students remarked that *Second Life* was an inappropriate platform for teaching and learning. Some students regarded the activities as a waste of time, even though the skills they gained are directly transferrable to other platforms, because they were focused on wanting to learn a particular application (for example Flash) rather than on the skills (for example team work, collaboration, problem solving) required to create online games. Similarly, many students in *EPI* wanted to spend all

their time working on their Website designs because they regarded a 3D virtual world development platform as of little value to their future career plans to work as Web design professionals.

Several students were uncomfortable with the mediated form of communication, which again surprised us given all of the students enrolled in the courses were students with an interest in digital media. It was evident that technical glitches with the platform contributed to student dissatisfaction with the learning experience and interviews with their teachers confirmed that these issues were of irritation to most students. The clear messages from these trials in *Second Life* were: (a) that despite the perceived alignment with the course objectives, students could not see the relevance of the activities they undertook in the virtual space of *Second Life* to their 'real life' career objectives and (b) for at least some students, the 3D virtual platform was seen as an inappropriate teaching and learning environment. While the technical limitations of the platform were clearly a source of frustration, the tutors in these courses were adamant that those issues were peripheral to the more significant concerns about the value of the learning activities themselves.

Armed with the knowledge gained from this experience, and mindful of the potential benefits of 3D virtual world environments as reported in the literature, the author decided to attempt another trial of *Second Life* as an optional activity for students enrolled in a first year course, *Introduction to Digital Media,* and a third year advanced Web design course, *Accessible Interactive Media*, in the second semester of 2009. The case study based on initial experiences in these two courses is reported in this next section of the paper.

Case study of service learning in *Second Life*

One of the key elements of the University of South Australia's teaching and learning strategy is a commitment to student engagement. In 2007 the University embarked on a project, *STEP 2010*, which aims to promote activities that:

- engage first year students beginning with active student orientation programs that integrate the academic, institutional and social aspects of university life
- provide opportunities for students to engage in experiential learning
- implement empirically derived teaching strategies that build on our existing commitment to the scholarship of teaching
- enact the institutional mission as an applied university, established to provide entrants to, and in-service education for, the professions.

There are three identified mechanisms for achieving such student engagement:

- Teaching-research nexus - the linking of teaching and research in our programs and courses
- Practice-based learning - authentic and active learning in workplaces and in the classroom
- Service learning - volunteer work as a community service with opportunities to reflect and develop key Graduate Qualities.

The author was interested in exploring the potential for 3D virtual learning environments such as *Second Life* to facilitate these three dimensions of student engagement within a safe experiential learning environment. Since students undertaking previous trials in *Second Life* were consistent in their view that the activities in which they were involved were of little relevance to their professional career aspirations, it was clear that to engage students in meaningful ways, the link between the activities undertaken in *Second Life* and the skills they would require in employment would need to be more explicit. The obvious solution was to provide students with the opportunity to undertake 'real placements' in the 'virtual spaces' of *Second Life* through service learning.

Service learning is defined as 'a pedagogical practice that integrates service and academic learning to promote increased understanding of course content while helping students develop knowledge, skills and cognitive capacities to deal with complex social issues and problems' (Hurd, 2006). As Cohen and Yapa (2003) argue, service learning is more than active learning. What is critical is that students learn the integration of scholarship and civic engagement and that it is through this engagement with the community that new knowledge is generated. 3D virtual spaces provide an obvious opportunity for facilitating these kinds of learning experiences within a context that encourages constructivist learning. As Oblinger and Oblinger (2005) suggest, learning is best served when it is contextual, active and social. In this next section two courses in which *Second Life* is being used as the medium for engaging students in such service learning activities is described.

Introduction to digital media

This course provides first year students with an introduction to the fundamental creative design principles, processes, skills and media production techniques required for use within and across a variety of digital media artefacts. Students begin to research the basic communicative and creative possibilities of graphics, still images, film and video and the Web through an introduction to some of the key conceptual, technical and craft issues related to digital media production. All three assignments are based on the one major project, which involves researching a social issue for the first assignment, producing a compelling and engaging digital story based on the chosen social issue for assignment two, and presenting the digital story through an online medium in the final assignment. While all three assignments are individual tasks, in the process of generating ideas and producing their digital story, students engage with their peers and other individuals they recruit as actors/models for the second assignment. As a result of completing these three assignments students develop the ability to research, think and act ethically about social issues, communicate effectively as well as the ability to work alone and in teams.

Students enrolled in the course were given the opportunity this semester to undertake their research and produce a digital story based on a health or disability related issue working with relevant groups in *Second Life*. Two of the 70 students enrolled in the course chose this option. One of the students is working with 'Dreams', a group established in *Second Life* to provide support services for individuals who have experienced stroke in their 'real' lives. The other student is working with Alliance Library which operates 'Healthinfo Island' and provides information services to residents of *Second Life*.

Accessible interactive media

This is an advanced Web design course focusing on the skills required to assess Web sites for accessibility compliance, policy development and advanced techniques in Web accessibility. The course is a final year option for students enrolled in either the Interactive Multimedia or Web Development major in the Bachelor of Media Arts program. The course is also available to students taking a minor in Web Development in the double degree in Computer and Information Science and Arts offered by the School of Computer and Information Science. Students are assigned community organisations as their clients and work in project teams with those clients throughout the semester. The students are required to assess and redesign an existing Web site that is non-compliant and write a Web accessibility policy for the organisation.

Students enrolled in the course this semester were given the option of undertaking their Web projects with health or disability related groups in *Second Life*. Of the 21 students enrolled, 7 opted to work with *Second Life* groups including: 'Health Support Coalition', communities of people with HIV/AIDS and ADD/ADHD, a group of leaders of the various support groups, and an organisation known as 'Virtual Helping Hands'. They meet with their clients on a regular basis in *Second Life* and they also meet with the course coordinator on a weekly basis for debriefing sessions.

Discussion

Since this is the first time students have undertaken such service learning opportunities in *Second Life* and the courses are still in progress at the time of writing this paper, formal evaluation data is not yet available. However, observations of students' interactions with their clients, the group meetings held with the facilitator of the 'Health Support Coalition', Alice Krueger (AKA Gentle Heron in *Second Life*), and regular debriefing sessions with students suggest that the students are gaining considerable expertise in research, problem solving, communication, collaboration and also learning first-hand about the life-experiences of people with disabilities. Students are not required to attend the weekly debriefing classes (which are held Saturday afternoons) yet most students turn up on regular basis and in some cases the sessions have gone on much longer than the allocated time because students have been engaged in the discussions.

As with any 'real life' student service learning situation, students have encountered many challenges in the course of their placement. For example, while students had assignment deadlines they needed to meet, they also had to manage their interactions with clients who did not always deliver content within negotiated timelines. Students also learned that timely response to client emails or Instant Messages (IMs) was critical to the timely delivery of content, particularly since many of their clients had other 'real life' constraints limiting their ability to be available for consultation when it suited the students. The students also had to negotiate the complexities of multiple time zones and various preferred methods of communication; some clients preferred email correspondence, others IMs through *Second Life* and others

wanted to meet with the students via Skype. Sometimes students' preferred approach to the design of the artefacts for their clients did not match their clients' preferences; hence students, as with any 'real life' placement, had to balance their own aesthetic desires with the needs of their clients.

The virtual medium has proved to be a safe environment within which students can be guided through the complexities and challenges of dealing with 'real clients'. Regular in-world meetings with teacher and client representatives has provided an effective means for negotiating many of these difficulties and there has been a demonstrable increase in student confidence as a result. All of the students have taken great pride in their work and have demonstrated commitment to achieving excellence, while also balancing the needs of their clients within the relatively safe virtual environment. Finally, the students have developed a much greater understanding of the difficulties experienced by individuals with disabilities. As Alice Krueger described in email communication to the coordinator:

> Members of these communities enjoy participating in research opportunities and particularly interacting with students whose ethics are still being formed. We appreciate the opportunity to express our concerns and show our value as fellow human beings. The virtual medium of Second Life allows us to do this. From the opposite side, Second Life is a great laboratory for your students. When your students enter the virtual world, they are then able to connect to people whom they would likely never meet in their real lives. (Alice Krueger, Virtual Ability Inc, 2008)

Conclusion

This paper has described the role of 3D virtual learning environments as spaces for experiential learning. The author draws on previous experiences highlighting the challenges in adapting courses to harness the opportunities such environments offer our 'Gen-Y' students. In analysing previous attempts at incorporating 3D virtual world learning experiences in the undergraduate curriculum, the author has identified potential dysfunctions associated with these learning environments. Building on those experiences, and armed with the knowledge gained from literature reporting the benefits of engaging students in experiential learning opportunities through service learning, the author has outlined an alternative approach to integrating 3D virtual learning activities within the undergraduate media arts curriculum.

This paper is very much a work in progress, since the courses have not yet concluded and formal evaluations have yet to be conducted. However, there is no doubt that the learning that is occurring and the richness of the interactions with their clients has provided the students with greater insight into the 'real' world issues through their 'virtual' work experience encounters. While one must be cautious about painting too optimistic a picture based on anecdotal evidence and in the absence of final evaluation data, the fact that students willingly meet with their clients in their own time in *Second Life* and are regularly attending optional debriefing sessions with the coordinator, suggests that the experience is engaging and challenging the students in ways not realised in previous offerings of courses in this virtual environment. Final evaluations will be conducted via anonymous online surveys at the end of semester and will confirm whether formal quantitative and qualitative data support these initial observations. Nevertheless, initial findings suggest that 3D virtual learning environments such as *Second Life* hold great promise as environments for engaging students in 'real world' issues within the safety of '3D virtual spaces'.

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