Supervising Higher Degree Research (HDR) candidates at a distance: What do emerging virtual world technologies have to offer?

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New information and communication technologies provide opportunities and challenges for teachers. Emerging virtual world technologies, such as *Second Life*, are a current example of this. Early adopters and innovators are currently exploring what these technologies offer specific cohorts of students, such as the distance Higher Degree by Research (HDR) candidate. This paper explores the experiences of three educators and four HDR candidates using virtual worlds as part of the supervisory process. Each case study explores the potentials and pitfalls of the medium from the individual's perspective, and suggests solutions to overcoming some of the challenges. Subsequent thematic analysis of the case studies helps to support the field of literature on using virtual worlds in formal education. Demonstrating the potential merit of virtual worlds to support the HDR candidate, the paper concludes with a range of possible research directions for this new and exciting field of study.

Keywords: higher degree research (HDR) candidates; distance education (DE); supervisors; virtual worlds; *Second Life* (*SL*)

Introduction

Space, time, place and access to resources are the four tyrannies of participation in higher education. In order to overcome these barriers, students enrol via distance modes to undertake their qualifications, be these undergraduate courses, graduate certificates and diplomas, through to higher degrees by research. A fifth tyranny that may be encountered after enrolment is the feeling of isolation reported by many distance students which, in turn, can lead to non-completions.

New information and communication technologies provide both opportunities and challenges for teachers. While there is an array of existing media that are being used to help to facilitate these processes, emerging virtual world technologies, such as *Second Life*, are currently being noted as having the potential to overcome the many challenges surrounding participation in formal education (Willems, 2009). Early adopters and innovators are currently exploring what these mediums offer specific cohorts of students, such as the distance higher degree by research (HDR) candidates.

This paper examines a specific subset of students engaged with distance education as it considers the benefits and challenges of using virtual worlds such as *Second Life* for higher degree by research supervision. It explores the experiences of three educators and four HDR candidates who use virtual worlds as part of the supervisory process. Each case study explores the potentials and pitfalls of the medium from the individual's perspective and suggests solutions to overcoming some of the challenges. Subsequent thematic analysis of the case studies helps bolster the literature concerned with the use of virtual worlds in formal education. In addition to

demonstrating the potential merit of virtual worlds to support the HDR candidate, this paper concludes with a range of suggested research directions for this new and exciting field of study.

Media, MUVEs, *Second Life* and distance HDR supervisions

One of the challenges with distance supervision is finding a compatible technology between supervisor and student for communication purposes (Orr, 2010) across geographical or time zone differences. Beyond the learning materials themselves there are many media that can potentially be used to lessen distance for the DE HDR candidate. Laurillard (2002) argues that the range of media support different kinds of learning experiences. Further, she classifies them into five principal groups, namely narrative, interactive, communicative, adaptive and productive forms of media. In terms of the DE HDR candidate, examples of the methods and technologies of narrative media include written documents and/or accompanying comments; web resources are examples of interactive media; whereas examples of communicative media include telephone, email, formal video conferencing and *Skype*. These different media forms are summarised in Table 1 (below).

Table 1. Five principal media forms in e-learning (Laurillard, 2002, p. 90)

Media forms	Methods/Technologies	Learning experience
Narrative	Print, TV, video, DVD	Attending, apprehending
Interactive	Library, CD, DVD, Web resources	Investigating, exploring
Communicative	Seminar, online conference	Discussing, debating
Adaptive	Laboratory, field trip, simulation	Experimenting, practising
Productive	Essay, product, animation, model	Articulating, expressing

In terms of the DE HDR supervisory process, each of these media will provide different learning and support opportunities. *Skype* has recently become more frequently used in DE HDR supervisions as it can integrate a variety of media simultaneously: text in the form of instant messaging, voice, real-time video images, file transfer and desktop sharing (Bonfiglio, Mellia, Meo, & Rossi, 2009). Though this free technology has transformed the face of distance supervision, it does have some limitations. One of the main challenges reported is that even though users can see and communicate with each other, users still feel separate and disengaged, with the feeling of distance between users perpetuated.

Today, 3D virtual technologies are a new medium being explored to facilitate distance HDR supervisory processes and momentum is gathering. These technologies include multi-user virtual environments (MUVEs) of which *Open Sim* and *Second Life* (*SL*) are examples. MUVEs are interactive simulated environments that can be accessed by multiple users through an online interface. As these are multimodal environments, like *Skype*, they potentially encompass a variety of media forms to provide a diverse range of support capabilities for the distance HDR candidate. As Koch (2007, n.p.) writes:

> A website is an isolated, one-way communication channel, but *Second Life* allows visitors to interact in real time using many different media at once. For example, an avatar visiting a virtual meeting hall can view a video while text messaging with another avatar watching the same video.

However, virtual worlds take the experience for the DE HDR candidate a step further than applications such as *Skype*, for example, are able to. Through the three dimensional nature of the environment, virtual worlds offer there is never true immersion within the virtual space. They facilitate interaction through immersive

experiences. They enable communicative experiences via both visual and verbal modes and, through the use of additional hardware, can also provide haptic experiences for the participants. Adaptive learning can be induced through simulated field trips and simulations, and virtual worlds provide an excellent means of cost-effective exploration to accommodate access and equity issues. Finally, these environments can provide opportunities for incorporating productive learning experiences.

Second Life

Second Life (*SL*) (http://www.secondlife.com) is one of the highest profile Multi-User Virtual Environments (MUVEs) currently being used by educators in formal educational contexts. The reasons for this include the potential to easily customise the environment and the ability to create and share content for specific teaching and learning scenarios. Indeed, most of the content in this environment is built and maintained by its users (residents) using their imagination to create objects with the appearance and functionality they desire. It is currently the most mature and popular social MUVE platform and it is used by educators around the world in a wide range of discipline areas including nursing, engineering, drama, and language and cultural studies.

Developed by the San Francisco-based company Linden Lab in 2003, *SL* is best described as a social interaction platform. In effect, it draws on several existing technologies that are already familiar to educators including synchronous and asynchronous text chat, high quality graphics characteristic of gaming technologies, hyperlinked resources and streaming video. Over its short development history it has

incorporated some additional technologies such as Voice over Internet Protocol (VoIP) and the display of Web pages on any surface (called "web on a prim").

The unique combination of such characteristics now inherent in this MUVE render it not only a computer-mediated communications system and learning environment, but also a visually engaging 3D world in which the user can become immersed. This is not the total virtual immersion experienced by participants when wearing a full-face visor, gloves and other body sensors. Rather, it is "desktop immersion" in which the user is given the subjective experience of "being there" for the purposes of increased engagement and flow.

SL has a number of advantages as a medium for DE teaching and learning. The first relates to opportunities for participation. Semrau and Boyer (2008) suggest that participation can be fostered both "in-world" (that is, within the medium of *SL*) and out. This learning can be either formal (academic content, academic guidance and support and/or information relating to the HDR candidature) or informal (modelling supervisor behaviour and learning academic language through a virtual presence via an avatar).

Second, MUVES such as *SL* provide opportunity for the fostering of a sense of presence for learners that can be missing within distance education contexts. Moore (1980, 1993) has previously described the challenges of transactional distance in the DE environment. Beyond geographical and/or physical distance in educational contexts, transactional distance relates to the perception of psychological distance between learners such as DE HDR candidates and their supervisor(s). Garrison and

Anderson (2003) have argued that feeling this sense of "presence", a sense of being in, and of, the online world that is being interacted with, is essential for learning online. Indeed, the sense of presence created by a visual display coupled with a sense of control (autonomy) and the ability to manipulate the environment (constructive competence) provides a deeply engaging learning environment. These findings are supported by Ritzema and Harris (2008), who found that *SL* alleviated many of the issues surrounding distance education in their particular context. In their study, 40% of respondents lived in different time zones, 20% lived in different countries, and the authors had not met one of the participants in a face-to-face educational context.

Third, through highly social and cooperative learning activities (Childress & Braswell, 2006), *SL* can provide an opportunity to strengthen the sense of social community. In formal education circles, this sense of a social community is considered especially important for the success of distance learners (Brungard, 2008; Smith & Berge, 2009). In relation to the DE HDR, these opportunities for participation, in turn, help reduce the physical and psychological remoteness that many candidates experience. Beyond social community, a community of practice may also evolve. HDR candidates can meet and support each others as peers within the MUVE.

Finally, *SL* provides opportunities for synchronous meetings, plus the opportunity for the incorporation of multiple media simultaneously. This is an important consideration for helping to minimise time and financial pressures on both supervisor(s) and their DE HDR candidates alike, with the proviso being that issues

such as access and technology are not barriers to the embracing of such opportunities, especially in terms of the DE HDR candidate.

Early adopter case studies on distance HDR supervisions in virtual worlds

What do the emerging virtual world technologies have to offer DE HDR supervisions? In terms of the possibilities of facilitating the HDR supervision process, six case studies encompassing the experiences of three educators and four HDR candidates will explore the benefits and challenges from different perspectives. The following sections explore the experiences of educators and/or their DE HDR candidates who are at the forefront of trialling *SL* as a conduit for HDR supervisions when separated by geography, time, resources, and/or place.

Case study 1: HDR supervisor 1

I first entered *SL* in 2007 while I was working for the University of Queensland and was immediately excited by the affordances of the environment for DE. It provided a virtual space where people could come together to communicate and collaborate and in this way form community. I immediately recognized that this feeling of sharing space with another being could help to alleviate the feelings of isolation that many distance students feel.

I had four HDR candidates and one honours student. Two of the HDR candidates were on campus (though one worked full-time), as was the honours student. One HDR candidate was in Melbourne and the other was in New Zealand. All of the students could meet once a year, face-to-face at a conference hosted by the University, but otherwise they were never in the same room. I had started using *SL* for

undergraduate teaching and thought that perhaps my postgraduate students could meet in the University's space in *SL* for group supervision sessions. I recognized that the students who were studying at a distance missed interacting with their peers. As one student reported:

> It is hard to remain motivated when you never leave your house and spend all day every day in front of your computer – not much outside stimulus. You miss the happy accidents of meeting people that you get at an actual university. But being able to use *Second Life* as a place to meet has been a help. (Morgan Leigh in Rufer-Bach, 2009, p. 28).

The candidate who worked full-time was enthusiastic about meeting in *SL* because it meant he could meet with us while he was at work or at home, but the other on-campus students were reluctant and unwilling to master another technology. We worked around this by introducing a conference microphone that the other two on-campus candidates and I could talk into. To the students already in *SL*, it would appear as if this changing voice came through my avatar. This was sometimes confusing but I tried to be explicit about who was talking. In this way I could bring the reluctant students into *SL* without them needing to master the software. I manipulated the camera view so that they could see the other *SL* students. In this way, we would meet in *SL* once a fortnight or once a month depending on what was happening with the group. During the sessions, the research candidates would talk about their research or would discuss their writing. The writing would be distributed to group members before the meeting with the expectation that the other members of the group read it before the meeting.

Though they were initially fairly negative, the candidates who only entered into *SL* by coming to my office and speaking through my avatar reported that they enjoyed the experience and found it helpful. One of those students eventually did get

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an avatar and mastered the software. The other student never did. The students who did have their own avatars would sometimes meet in *SL* without me to discuss issues or sometimes just to hang out. I am confident that using *SL* as the venue, it is possible to create a sense of community within a group of HDR candidates for mutual support and encouragement. Figure 1 is an example of me in-world with some of the HDR candidates that I supervise. The photograph is taken in the HDR room on University of Queensland's Religion Bazaar in *SL*.


Figure 1. HDR supervisions at the University of Queensland's Religion Bazaar in *SL* (HDR supervisor 1)

Case study 2: HDR candidate 1 (supervised by HDR supervisor 1)

For our group supervision meetings in *SL* I would sometimes come to my HDR supervisor's office and sometimes I would meet the others in *SL*. Sometimes it was just more convenient if I was working from home to drop into *SL* rather than having to come in to the university on public transport. Having to come into the university would have taken more time than the actual meeting would have taken. If I was at

home it was because I was working on my thesis and I wouldn't really want to spend too much time getting to and from a meeting. I am pictured in-world with my HDR supervisor in Figure 2.
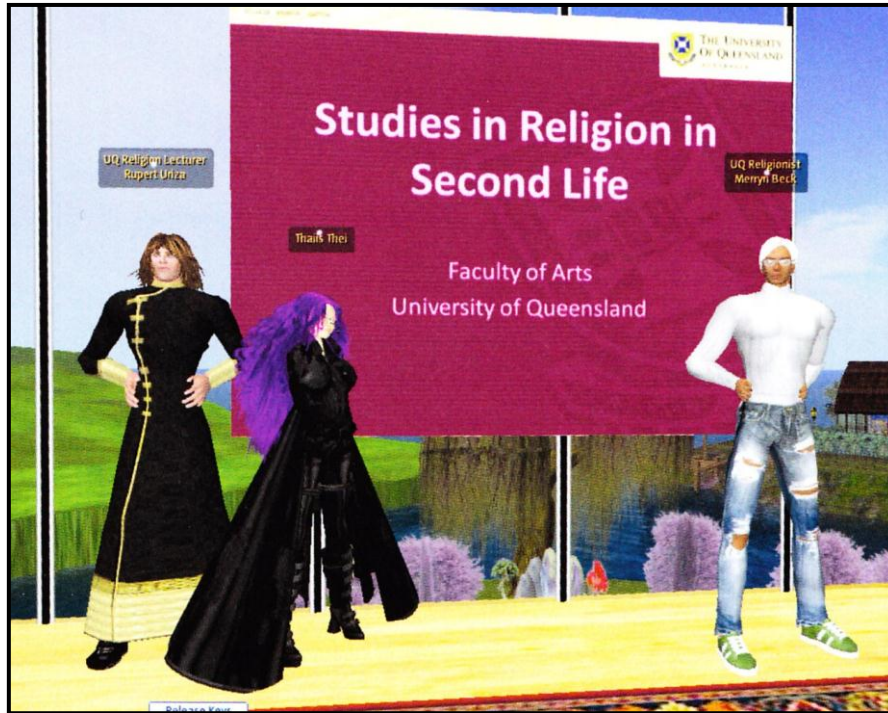
Figure 2. HDR supervisions in *SL* (HDR candidate 1 and HDR supervisor 1)

I had already spent a fair amount of time in *SL*. My HDR supervisor had employed me as a research assistant to help design the buildings for our island, UQ Religion Bazaar; so I was fairly skilled. Some of the other students who were new to the environment spent longer getting ready, wanting to see what happened when they did this or that, which did waste a bit of time. Also, it was frustrating if there were issues at my HDR supervisor's end because in *SL* all we would know was that nothing was happening, whereas my HDR supervisor would be getting people to sit down near the microphone or reorganize themselves or whatever. Because we couldn't see what was happening there, we didn't know what was causing the delays.

It was a bit disheartening that some people kept going on about *SL* not being worthwhile and ignoring the obvious benefits. This did change over time as they saw what could be done but I couldn't understand why they wouldn't just try it out and reserve their judgement. Another one of the troubles with our *SL* meetings was that they were hard to wrap up. Sticking to the timeframe set for the meeting was often difficult. People would keep chatting on at the end. Or wanting to go and see something or do something. You'd say "good bye" but everyone would be too busy seeing what happened if they clicked that rock or notecard giver to hear. But I guess that can happen in real life meetings too. Probably there is a greater need for structure in *SL* meetings.

I think the best thing about the meetings was that it reminded us that we were part of a research group. When you're home alone all day and working by yourself, you begin to feel isolated and is if you're struggling on alone. Also, meeting on the UQ Religion Bazaar Island helped us to focus on the meeting. The island contained buildings relevant to our research so we could remember why we were there; it got us into the right frame of mind.

I did really enjoy the *SL* sessions though I felt the discussions were more helpful for the newer students rather than for me. I didn't mind taking the time to help them. It was interesting hearing what other people were doing. For example, one of the other students was researching religious ritual in *SL* and she could teleport us to the various places she was researching. It was a great way of seeing what she was up to.

Overall, I think *SL* is a good tool for supervision in *SL* but I don't think it should be the only tool. My supervisor and I also use *Skype* – sometimes it's useful just to fire off a quick text – and we also meet face to face. My other supervisor isn't as comfortable with technology so the face-to-face meetings, when we can all get together, are essential.

Case study 3: HDR supervisor 2

What can a virtual environment like *SL* contribute to the supervision process? It can help built elements of a Community of Practice. For HDR students working part-time and/or off-campus it can provide a unique means of supervisor-to-student communication that is discussed in a later sub-section. It can also provide opportunities for student-to-students links and also assist in developing links between students and other collaborators, for example, being co-writers of research papers.

Are there barriers to adoption? Yes. Until the distinction between game centric MUVEs is clearly established and accepted, *SL* will struggle to achieve formal acceptance in universities. Knapp and O'Driscoll (2010) have suggested various actions needed to overcome the resistance to acceptance of virtual world environments in education and training. They include: learn the terminology, jargon and acronyms which accompany the technology, address the misapplication of the terminology; become aware of the appeal of virtual worlds; and choose the right scenario of maximum effectiveness. For smooth operation of any *SL* user group, I would stress the need to provide good training for new users in the protocols and practices of in-world interaction. It's the old story about the need to reach a point there the technology

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becomes "transparent" before you can really experience the full benefits of what it can offer.

There are two small items of hardware that I personally believe greatly enhance a user's *SL* experience. I recommend my students get them, plus I have one set for loan for them to try out. The first is a 3D joystick (currently one of the best is *SpaceNavigator* (http://www.3dconnexion.com/products/spacenavigator.html) that frees you from that 19th century industrial age invention: the QWERTY keyboard. It also allows you to move fluidly around your in-world environment. The second is a self-cancelling microphone/speaker set-up such as the conference speakerphone *Duet Executive*

(http://www.phnxaudio.com/index.php?option=com_djcatalog&view=show&cid=3&Itemid=14) that both frees you from headsets and cables and allows multiple users audio input from one log-in. Both these items connect to a computer's USB port and represent a relatively small additional investment in comparison to the computer system and broadband fees that the user already has in place.

Figure 3 is an example of a session in-world in my virtual academic office, which is a beach-side setting complete with deckchairs for my students and I to sit in. In this image, I am discussing some research findings with a HDR candidate. The *PowerPoint* possibility enables focused discussion in and around a given issue.

However, getting students to work in *SL* when they are well into their candidature is not the best use of the technology. I'm much more interested in working

with students from day one (and with students who are already *SL* users) to overcome issues with learning to use and learn in this new medium.
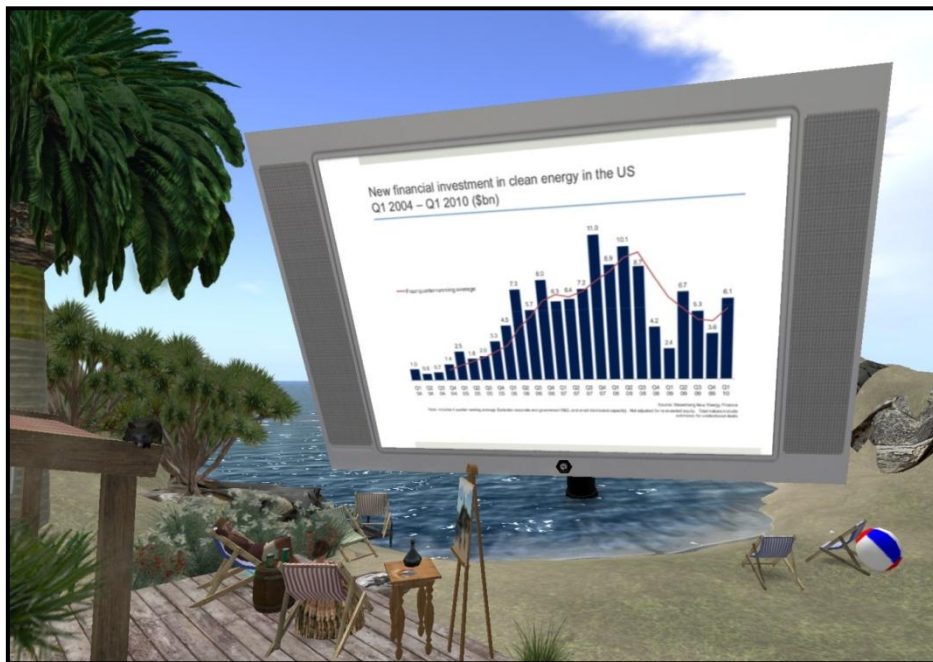
Figure 3. HDR Supervisor 2 discussing research-related material with a student in-world

Figure 4 demonstrates an alternative possibility of the supervisory experience in virtual worlds. This slide pictures a student-led postgraduate meeting in *SL* where I am in attendance as a guide if necessary. Chaired by one of the HDR candidates, it provides an opportunity for students to discuss a wide range of issues related to their work. The room is available at any time for students to meet virtually.

Case study 4: HDR candidate 2 (supervised by HDR supervisor 2)

There are a number of possibilities that make *SL* a possibility for the HDR supervision process. The first is that as a DE HDR candidate using *SL* for supervisions, you don't need to be tied to the computer. In other words, you don't

have to sit cabled up to a desk and computer all the time and you can certainly escape using a keyboard if you have the right hardware. The *Duet* microphone does a great job of picking up your voice. I saw this being used by my supervisor. He could get up from his desk, walk over and get a book off his bookshelf to look up a reference while still talking to me all the time. This helps me feel that I am participating in a "real" meeting when multitasking often takes place.

Figure 4. Student-led group meeting of HDR candidates in *SL* with Supervisor 2 in attendance

Case study 5: HDR candidate 3 (supervised by HDR supervisor 2)

     SL is useful in that it can make it easier to communicate and relate to your supervisor over a geographical distances and time. Ironically, even though at a "distance", some students might find it easier to be more direct if you are not dealing with a face-to-face meeting.

To this comment, HDR Supervisor 2 adds that some students might even prefer chatting with their supervisor in-world, particularly if the discussion gets a little heated or when (some) supervisors become over critical and dare I say insensitive to their students' feelings. Perhaps an in-world interaction provides just the right amount of dynamic interaction, visual cues and personal distance.

Case study 6: HDR candidate 4 (concomitantly an SL educator)

I have a dual relationship with my doctoral supervisor; as well as being my supervisor she is a colleague with whom I co-lecture a third year undergraduate unit. I am pictured in my virtual office in *SL* in Figure 5. In addition I have a part-time job outside the faculty and my supervisor teaches other units and supervises other post-graduate students. The many demands on our time can make arranging regular meetings challenging. One of the strategies we use to overcome this challenge is to meet online in the virtual environment of *SL*.

Figure 5. HDR candidate 4 (and concomitant educator) in her virtual office

Rather than in a physical classroom setting or a distance education environment built within a learning management system (LMS), the "face-to-face" component of the undergraduate unit that I co-lecture with my doctoral supervisor is conducted in *SL*. Preparing and conducting classes in *SL* often requires us to be in the virtual world several times a week for several hours at a time and it is during these times that we sometimes find ourselves having incidental, informal supervision meetings. Given that we teach in the virtual environment and that the focus of my doctoral research is an exploration of the connection that people feel toward their avatars (digital 3D representations of themselves), it is not surprising that we both feel very comfortable meeting in this non-traditional setting. Although we are not physically in the same location during these meetings we feel a strong sense of being 'in' the place (telepresence) and with each other (social presence) which can be attributed, to a large degree, to our use of avatars (Schultze & Leahy, 2009).

Meeting online affords us the options of meeting at non-traditional times and days (nights and weekends) and allows us to flexibly manage our schedules and meet at mutually compatible times, which often happen to be outside the mainstream (we are both "night-owls" and often meet between the hours of 11pm and 1am).

During these meetings we are able to share documents by email or on the screen in *SL*, as the environment affords viewing of web-based materials such as websites, Google Docs or wikis. We are also able to communicate asynchronously in the environment using voice or text chat. The latter has the benefit of providing a communication log for future reference or clarification.

The greatest barrier to conducting any type of meeting in *SL* (or most mediated environments) is the technological learning curve that must be navigated in order to focus on the meeting rather than more trivial pursuits. Another obstacle of these types of meetings is that they are dependent on the technology being available – *SL* is constantly being upgraded and glitches such as "lag", which has been described as feeling like you are "moving through molasses" (Carr, 2007) are common.

Some may point to the informal surroundings in *SL* as being inappropriate for scholarly meetings; however, we both consider the incidental meetings we have "in-world", to be as equally authentic as other "real-life" meetings that are conducted in more traditional environments.

Virtual worlds like *SL* are still in their infancy and would not be a viable or desirable venue for supervisory meetings for many people; however, given the need, desire and right conditions, it has the potential to be a feasible and in some ways, a possible improvement over, more traditional meeting locations.

Thematic analysis of the case studies

Thematic analysis was undertaken on each of the case study contributions in the preceding section, which were written from the perspective of personal experience in trialling new media for the purposes of supervising HDR candidates. The contributors are either academics supervising HDR candidates in *SL*, or HDR candidates being supervised in *SL*. Each author has highlighted various potentials and pitfalls of

working in this context. As a means of transforming qualitative data into manageable groupings and to discern trends, thematic analysis provides a "way of seeing" (Boyatzis, 1998, p. 1) that acts as "a translator of those speaking the language of qualitative analysis and those speaking the language of quantitative analysis; it also enables those using different qualitative methods to communicate with each other" (Boyatzis, 1998, p. vii).

In terms of the potential of the virtual worlds environment to enhance the distance HDR supervisory process, the case study respondents highlight as positive aspects: the communication process; the facilitation of collaboration; time savings; the elimination of transportation costs to attend face-to-face meetings; the inclusion of both on-campus and off-campus students in a social community of learners; providing a community of practice; flexible environment; peer-to-peer mentoring; and the overarching belief that it is an appropriate medium for supervision.

In terms of pitfalls surrounding the use of virtual worlds to supervise DE HDR candidates, the case study respondents identify time wasting through distraction in a novel and interesting environment; technical problems; the reluctance of nay-sayers to fully engage; time zone challenges; distractions such as off-topic chatting; lack of meeting structure; the need for adequate training for new users; the steep learning curve associated with mastering a new technology; and technological and connectivity issues including lag. Because of these factors, respondents have advised that the medium should not be relied as the sole venue for the HDR supervisory process.

In general agreement with the broader literature emerging around this topic, Willems (2009) has previously described the potentials and pitfalls of using the virtual world of *SL* in formal higher education (Table 2). The themes discerned from the case studies were compared to this list to gauge their alignment of these themes, noting areas of cross-over, and highlighting any potential gaps in the existing list that need to be acknowledged.

Table 2. Potentials and pitfalls of virtual worlds for HDR supervisions

		Willems (2009)	Case Studies – Distance HDR supervision in *SL*
Potentials	1	Recruitment of students	
	2	Strengthens social community	✓
	3	Fosters "deep" learning	✓
	4	Virtual showcase	✓
	5	Practice "real world" skills	✓
	6	Cost-effective site for hosting	✓
	7	Collaboration	✓
	8	A space for virtual seminars and performances	✓
	9	Synchronous learning opportunities	✓
	10	Experiential learning	✓
	11	Observational learning	✓
	12	Imitational learning	
	13	Accommodates various learning styles	
Pitfalls	1	Non-participation	✓
	2	Loss of attention	✓
	3	Dominating behaviours	
	4	Technical requirements	✓
	5	Time-zone differences	✓
	6	Students with visual disabilities	
	7	Economic costs involved to establish and maintain hosting	
	8	Time costs involved to establish and maintain hosting	
	9	Challenges communicating in the *SL* environment	✓
	10	Potential for unregulated sexual content	
	11	Intruders	
	12	Undesirable behaviour	✓

As table 2 reflects, thematic analysis of the case study responses support many of the potentials and pitfalls previously identified and articulated. An additional pitfall theme is that relying solely on one form of media for the distance HDR supervision process does not offer options to overcome potential problems and challenges.

Indications for future research

This paper suggests that virtual worlds may provide a means of enhancing the distance HDR supervisory process as a new field of study. As a consequence, we suggest several potential research pathways to be explored. First, future research will necessitate a deeper investigation of the connections between HDR candidates and their supervisors in immersive virtual worlds such as *SL*. Such a study would involve the formal testing of the medium on a larger cohort of distances HDR candidates. Second, it is considered beneficial to examine whether there may be discipline-specific pitfalls or benefits in using virtual worlds such as *SL* in order to conduct the HDR supervision process. Third, it would be productive to follow, in a longitudinal study, students who are using virtual worlds as the main technology of the HDR supervision process as they progress from day 1 of their HDR candidature through to their graduation. Fourth, future research could also focus on the semiotic resources surrounding the avatar construction (Savin-Baden, Gourlay, & Tombs, 2010) and the impact that these have on the relationship between the supervisor and the HDR candidate in the distance education context.

Conclusions

The use of virtual worlds as a medium to facilitate the distance HDR process is an innovation adopted by progressive faculty at a range of universities across Australia. While virtual worlds such as *SL* might not be suitable or attractive for all HDR candidates and/or their supervisor(s), it does provide for some an immersive and visible virtual venue for meetings between the supervisor, HDR candidate and the wider research community; afford opportunities to ground the DE HDR candidate in the present; and makes available opportunities to create community. As such, it brings a new level to the concept of student-centred learning for the DE HDR candidate. To this end, four future research topics have been proposed. Further, while the focus of this paper has been on the DE HDR candidate, MUVES can just as easily be employed to work with HDR candidates who are enrolled on-campus.

This paper has explored the experiences of a group of early adopters and innovators who have explored the possible merits of using MUVES such as *SL* as an avenue to facilitate a variety of multimodal learning experiences for their HDR candidates who are distanced by place, space and time. The conclusion is that these technologies are swiftly redefining what distance means.

Acknowledgements

Biographical details of authors

Dr. Julie Willems (*SL Imastella Thespian*) holds qualifications in nursing, the Humanities, and education. She was a distance learner for 20 years, including a quarter of those years as a distance HDR candidate. Her research examines student equity and diversity in various contexts of education, including virtual learning environments.


Dr Helen Farley (*SL Helen Frak* or *Rupert Uriza*) is a lecturer in virtual worlds at the University of Southern Queensland. She holds a PhD in studies in religion, a MEd (ICT) and a BVetSc. Her diverse academic qualifications are put to good use in Second Life where she is involved in the design of projects in various fields from nursing and foreign language acquisition to anthropology and religion. Her research interests include authentic movement in 3D environments, immersion in virtual worlds and religion in Second Life.

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Debbie McCormick (*SL Seeker Esparza*) commenced her academic journey as a mature age student at Monash University in 2000, seeking new challenges after a successful management career in IT sales and marketing. She is currently undertaking a PhD at Monash University with a main research focus on exploring the concept of emotional connection to avatars (visual representations of the "self") in virtual environments.
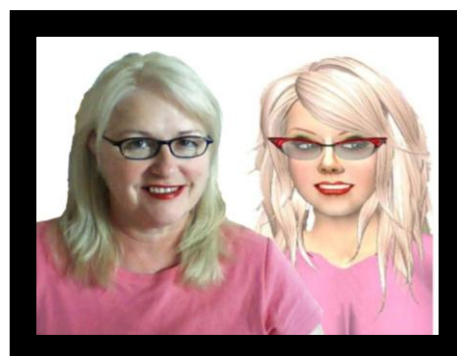
Dan Walker (*SL Merryn Beck*) is undertaking a PhD at the University of Queensland, looking at how the practice of vodou has changed in New Orleans since the times of Marie Laveau. Dan was also instrumental in the design of the UQ Religion Bazaar project in Second Life. As well as working towards the completion his PhD, Dan also works in the community sector.

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