

International Student Learning and Avatar Collaboration in an Immersive World

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Abstract

This paper reports an initial exploration of the use of Second Life to host international student learning and avatar collaboration. It considers how students perceive an immersive environment and investigates the manner in which students interact and collaborate through their avatars.

The paper describes the building of a seminar space on Second Life and the design and facilitation of two seminars in that space. Initial findings, derived from student interviews, the investigators' diaries and observations of the sessions' video recordings, suggest that while obstacles exist to the effective use of virtual worlds for this purpose, this evolving technology has significant potential. Students were generally sensitive to the virtual space and how it can benefit the quality of interactions. Some students felt freer to contribute and ask questions.

Keywords: virtual worlds, social presence, collaboration, immersive environments, collaborative learning

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The idea of immersive learning environments is seductive for higher learning institutions whose co-producers of learning (students, academics and tutors) may be spread around the world. Such immersive worlds as Second Life can bring together, in one – virtual – world, people residing in different locales, achieving increased student interaction and enabling them to network internationally, at a very low cost. In immersive worlds students might also experiment and play, comforted by the anonymity afforded by the mediation of an avatar².

The project reported here investigates two main questions. First, how do students perceive immersive environments, and what role do atmospheric elements play with regard to the main learning activity? Second, how do students feel about mediating their interaction through an avatar, and in which ways does the mediation help or impede communication, involvement and collaboration? This paper discusses the practicalities of setting up a virtual seminar space on Second Life and the deployment of two seminars in that space. It presents initial findings from the project, obtained via student interviews, investigators' diaries and observations.

Virtual Environments and their Impact on Consumers of Knowledge

Marketers are well aware of the impact of environments on consumers' emotions, attitudes and behaviour. Kotler (1973) calls atmospherics, the creation of exciting retail environments, a "silent language" (p. 48). In a review of atmospheric studies, Turley and Milliman (2000) find overwhelming evidence of the impact of atmospheric elements on consumer evaluations and behaviour. Bitner (1992) highlights the role of environments for service firms in visually representing their offering and in helping customers and employees co-produce services. According to Kaplan and Kaplan's (1982) Preference Framework, people prefer environments which both make sense and are involving. Rosen and Purinton (2004) verify that these principles hold for online shopping environments; Riva et al. (2007) find that virtual reality acts as an affective medium: anxious and relaxing environments produce the same emotions.

Environments are also conveyors of social interaction, as Bennett and Bennett (1979, p. 192) state: "All social interaction is affected by the physical container in which it occurs". Thus, the immersive environment in which student avatars meet may affect their emotions, convey messages about the learning context and protocols, as well as facilitating or hindering their interaction with the facilitator and among themselves.

Interacting in an Immersive Environment – Freedom to Experiment and Play?

While in reality people are at their desk, in front of a computer screen, telepresence, facilitated by the interactivity and the vividness of the medium (Steuer, 1992), enables them to feel part of a remote environment. Websites can also convey social presence, or a feeling of warmth and sociability (Gefen and Straub, 2003). Therefore, immersive learning environments could be propitious to student involvement and collaboration. Educators have also noted that virtual learning communities lead to greater collaboration and more even participation (Falloon, 2010; Hansen, 2008). This may happen through a sense of belonging to a virtual community (Barnes, Wetsch and Hair, 2008; Peltier, Drago and Schibrowsky, 2003).

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² Avatar: an electronic image that represents and is manipulated by a computer user (Merriam Webster Dictionary)

Virtual worlds deprive their visitors of cues as to the reality behind the world represented on their screen, thus potentially confusing their sense of the real and the virtual (Bayne, 2008). However, the ‘non-real’ nature of immersive learning worlds may also facilitate learning in new ways. In particular, anonymity may prevent shyness, self-consciousness or fear of embarrassment from inhibiting participation. Learners can make mistakes safely (Tambone et al, 2009). Virtual worlds have been used successfully to help socially and emotionally impaired young people negotiate their social interactions more successfully, because they remove some of the difficulties of being in a real group (van Dijk, Hunneman and Wildlevuur, 2008). Sweeney and Ingram (2001) also report that students felt more comfortable and less inhibited during web-based tutorials. In particular, Asian students felt more comfortable speaking in online than in real tutorials; their Australian colleagues detected, in their contribution, quality, depth and humour which had not been noticed during face to face sessions.

For these reasons, in spite of the absence of important cues and the uncertainties associated with non-real environments, the co-production of knowledge may be made easier in an immersive world: students may feel freer to ask for help or provide help since their behaviour will not have consequences on their permanent identity.

Methodology

Design of the Immersive Learning Environment

The seminar space (see Figure 1) was developed from an ‘off-the-shelf’ building bought in Second Life and customised. Armchairs were arranged in a circle around a low table. Clocks showing the time in the students’ locales were placed on the walls, alongside images of the university’s main UK bricks-and-mortar campus, and photographs of international cohorts of students. Several planning meetings between the investigators took place in the space.



Figure 1: Seminar space built for the purpose of this study.

Seminars: Organisation, Topics and Facilitation

Two virtual seminars were organised, to which the executive MBA students of a British university, residing in 8 different locales in Europe, the Middle East and Asia, were invited on a volunteer basis. Interested students contacted the technology co-ordinator (they remained anonymous to the facilitator). They were matched to an avatar whose first name was the name of a Scottish town – to conceal students’ gender or culture. Students were offered a short one-on-one initiation session to Second Life, during which they tested audio and navigation.

The seminar activities (role playing and brainstorming) were chosen to investigate the opportunity of using virtual worlds to experiment and play. *The first seminar* involved students role playing British Airways' (BA) top marketing management team. The seminar was attended by the facilitator, the technology co-ordinator, an assistant whose avatar's only role was to be seen to video record the session, and three MBA students studying at different international centres who played the following roles: head of loyalty programme, head of brand and customer experience, head of Asia sales.

On entering Second Life, avatars were 'teleported'³ to a lawn just outside the seminar room. The first 10 minutes of the one-hour session were devoted to socialising. The director of the university's Centre of Academic Practice and Learning Enhancement welcomed students to the event, before signing off. The avatars then proceeded to the seminar room. The facilitator and students sat on the armchairs around the low table, while the technology co-ordinator and the video-recording avatar sat on chairs behind the group. The discussion took place using real voice. The session consisted of negotiating three key lessons learnt from the ash cloud episode and three key priorities for the BA marketing team. The facilitator first asked each avatar, in a round robin format, to suggest three points. She then negotiated agreement on the group's lessons learnt, and priorities. Finally, she re-capped to ensure agreement on the negotiated lists.

The second seminar involved students brainstorming powerful MBA project ideas. It was attended by the facilitator, the technology co-ordinator whose avatar was also seen video-recording the session, and four MBA students from different international centres. The facilitator was the last avatar to join the session, and it appeared that the participants had already begun chatting informally with one another. The discussion took place using text chat (rather than voice). The facilitator started by asking who wanted to suggest an issue which the group could brainstorm. She then asked all students to brainstorm suggestions and ideas for approximately 10 minutes, after which she synthesised the different points in a series of main themes. She projected two slides on the wall of the virtual seminar room, proposing ways to refine and strengthen project ideas. At the end of both seminars, she thanked everyone and reminded them that the second investigator would contact them shortly for an interview.

Data Collection

After each session, the second investigator interviewed the student participants by telephone. The topics covered during the semi-structured interviews included the students' experience during the session, their feelings towards the anonymousness afforded by their avatar, their interaction with other avatars, and their perceptions of the environment. The data consists of: the video, audio and text recording of both seminars, the investigators' reflective diaries, and the students' interview data. The initial findings from this body of data are reported next.

Findings

Virtual Environments and their Affective Qualities

The students' reactions to the environment were generally positive, most students articulating clearly what could or should be changed to make the environment more constructive to support the staging of the seminars. However, some seemed insufficiently immersed in the environment, comparing the Second Life seminar to a regular teleconference, and noticed their attention leaving their screen. Nevertheless, a majority of the participants were positive in

³ Teleporting is a method, in virtual worlds, of moving from one location to another without having to traverse the space between these locations.

regards the potential to overcome these issues and there was an appreciation that the technology is immature. The technology co-ordinator observed that some students showed a greater grasp of the Second Life controls which may have enabled them to take a more active part in the seminar. Some students' poor audio quality affected their ability to participate fully.

The facilitator experienced the immersive environment as a means to 'make real' the learning situation. During the seminars, she looked, on her screen, at the avatar which was speaking, as a means of focusing her attention. She watched avatar movements (some avatars decided to change seats) and worried when one avatar was signalled by the system as being 'away'. Similarly, when the whole group moved towards a screen to see a slide and for a moment her camera view lost sight of some avatars, she became worried that they had 'left'. One student suggest that the session could have been more immersive if it had taken place in an environment echoing the context of the role play, such as the BA head office or an airplane.

Thus, when people experienced telepresence in the immersive environment, it was conducive to learning by providing a context and giving some reality to the situation. In a sense, it 're-oriented' people by directing their attention to the situation and the people it symbolises. However, telepresence was not experienced by all participants.

Interacting in an Immersive World: Collaboration, Playfulness and Freedom

Some students felt that their avatar represented them, while others felt that the avatar *was* them. There were diverse reactions as to whether students relished the anonymity and 'second identity' afforded by their avatars, as evidenced in the following reactions: "*If I'd been using my own name would I have gone flying around the room, that's an interesting question*" (respondent 2.2) vs. "*Since I don't know how people are feeling, I'll just say my thing so I may have ruined some of the others people emotions or I have hurt them.*" (respondent 1.2). While some students felt freer to ask questions and provide suggestions, others maintained that the use of an avatar had no impact: "*Unless he's my boss or he's my family elder, I don't think I will change my communication behaviour*" (respondent 1.2). One student felt that he might prefer to attend some lectures in Second Life to face-to-face ones because of the additional personal and physical freedoms he felt it afforded. On the other hand, some students felt inhibited that the others did not know who they were as they felt that others' prior knowledge of their identity would have changed the way in which their contribution was considered. One student felt that his comment would have been given more gravity had the other students known who was behind the avatar. Discomfort with the arbitrary and neutral physical appearance of the avatars caused some discomfort with some students ("*It was kind of, blandness which you wouldn't get in person*": Respondent 2.2; "*Just like talking to someone that does not exist*": Respondent 2.1), several of whom attempted to make the avatar appear visually more like they do in the real world.

Playfulness caused various reactions. One student in the second seminar, frustrated that the use of text in preference to voice slowed proceedings down, deliberately flew around the room. The student suggested that this kind of behaviour would have been inappropriate in a real world seminar room but his detachment from the environment seemed to 'change the rules'. Other students appeared unsettled by the idea that they could 'play' before the start of the seminar, trying to sit on different surfaces and feeling ambivalent about doing this at a university seminar.

Students appeared frustrated by the lack of body language and eye contact that would indicate more clearly cues as to confidence and attitude. The absence of visual cue indicators left them less sure as to how their contributions were being received. "*And [in real life] I am quite used*

to, to pay attention to (...) feelings through the face expression of the one I'm communicating with and respond to them" (respondent 1.1). Interestingly, neither seminar seemed to contain any initial 'awkward' moment, when people typically have to overcome initial feelings of shyness. There did not appear to be any need for an ice-breaker. This may have been because people's facial expressions were not visible and therefore any awkwardness experienced by students could not be conveyed by their avatars. In this sense, feelings of awkwardness were filtered out of the interaction.

The facilitator was not aware of the real identity of the avatars at any point during the research. The avatars' genderlessness and culturelessness means that the communication with each avatar was not affected by awareness of differences between high- and low-context cultures (Hall, 1973). However, anonymousness was betrayed by voice during the first seminar. The facilitator recognised one particular student and, through their accent, those who are based in the university's Asia centres. The technology co-ordinator observed that the second seminar, where only text was used, obscured identities more successfully. Interestingly, in the absence of cues about who was 'behind' the avatars, the facilitator and some participants appeared involved in trying to 're-create' an identity using whatever cues were at their disposal, as expressed by respondent 2.1: *"The identities were not really known. So basically you treated the other person as a totally new person that you've met and that you're trying to find whatever information about him or trying to understand what him or her trying to understand the thoughts that they would have."*

Conclusion

Immersive worlds are inexpensive. While their use for education will undoubtedly increase in the future as the technology matures, users (teachers and learners) still need to overcome many hurdles. Also, the social implications of immersive worlds are still for the most part unknown. This project provides examples of early practice in bringing international students from different locales together in an immersive learning environment and should provide a useful starting point for educators wishing to organise a first immersive world seminar. Initial results suggest that immersive worlds provide marketing educators with the means of reaching students quickly across borders to discuss topics of interest, and to generate new, more open behaviours among students. There remain, however, significant technological challenges.

Limitations must be acknowledged. This study involved a limited number of students, and these may have been the most technologically comfortable with immersive worlds. It is not possible to ascertain whether a larger group consisting of students possessing differing technical abilities, could immediately interact usefully. Some technical issues relating to the organisation of international seminars in immersive worlds need to be considered. Some countries (e.g. United Arab Emirates, Oman) currently ban the use of voice-over-internet software, therefore seminars involving students in these countries need to use text chat. The Second Life interface raised issues related to its complexity. Although students were offered one-to-one 'inductions', some appeared to have insufficient knowledge of the complex interface to achieve what they wanted to, especially in terms of finding the best camera angle to view the seminar on their screen. Further research could consider the manner in which the environment can play an even more positive role, for instance in conveying the meaning of role play or facilitating small group socialisation and interaction. It could also further investigate the specific situations in which the anonymousness afforded by avatars enhances participation and contribution.

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