



## Performance pedagogy through research in ‘real’ and ‘virtual’ spaces

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This paper explores strategies for incorporating practice-led research into the undergraduate performing arts curriculum at the University of South Australia. There has been considerable interest in strategies for integrating teaching and research in the undergraduate curriculum as evidenced by the growing body of literature documenting the potential benefits of engaging students in research activities designed to foster active learning and problem-solving. However, studies reporting strategies for incorporating research in undergraduate programs with an applied focus, and performing arts courses in particular, are more difficult to find. This paper presents a case study of a second-year visual theatre course in which students undertook practice-led research activities involving the design and implementation of a performance in the physical space of a theatre and 3D virtual environment. Students, tutors and researchers as well as technical staff were drawn together as a research community in which students engaged in critical reflection in the company of scholars. Students were encouraged to act on the feedback they received from their peers and staff. Through these varying research activities, the course aimed to engage students in practice-led research activities involving collaboration and reflective practice within the disciplinary field of performing arts.

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### Background

There is a growing body of literature documenting the potential benefits of engaging students in research activities designed to foster active learning and problem-solving. Despite the reported benefits (Boyer, 1990; Brew, 1999; 2001; Brew and Boud, 1995; Elton, 2001; Griffiths, 2004; Healey, 2005; Jenkins, Healey and Huber, 2004), Wood (2009) notes the difficulties in instigating a research-based approach within the undergraduate media arts curriculum in a discipline which is not well defined. Thornham and O’Sullivan (2004) noted these tensions in their study of the employability of media studies graduates in the UK, commenting on the perception of employers that media studies is neither a ‘real discipline’ nor ‘real training’, and the shifting discourses, which they characterise as the ‘critical’ and the ‘vocational’. In the concluding section of their paper, Thornham and O’Sullivan cite the words of Alan O’Shea who suggested the need for ‘our students (and ourselves) to be ‘enterprising’ — to work collaboratively with others, to communicate effectively, to identify imaginative ways of solving problems and achieving goals’ (O’Shea, 1998, p. 520). Brew and Boud (1995) provide us with a model for considering how research might be applied within the performing arts curriculum in suggesting that teaching and research are more likely to be closely related when teaching is regarded as a process rather than outcome or product, and one which fosters inquiry learning in which both teaching and research are regarded as aspects of the one activity.

The case study reported in the following sections of this paper was designed to expose students to liminoid performance involving simultaneous live performance in the physical space of a theatre and 3D virtual environment. This kind of performance can best be described as ‘intermedial’ in that it ‘inhabits a space in between the different realities of performance’ and is associated with the ‘blurring of generic boundaries, crossover and hybrid performances’ (Chapple and Kattenbelt, 2006, p. 11). What distinguishes intermediality from other forms of mixed-media is the transformative properties of intermedia; through a process of remediation media are refashioned at the level of both content and form (Bolter and Grusin, 2000, p. 45). Such hybrid performances are potentially transformative because they

involve the corporeality and materiality of the live performance with media to intensify experience and 'reflexivity of thought' (Chapple and Kattenbelt, 2006, p. 37)

As performers working with new technologies, students undertook first-hand practice-led research into the relations between the media of theatre (Kattenbelt, 2007) and the virtual. Thus, students, tutors and researchers as well as technical staff were drawn together as a research community. Such an approach is entirely consistent with Boyer's (1990) notion of 'learning community' in which students engage in critical reflection in the company of scholars. In the context of theatre studies, the stage became a laboratory as students, teachers, performers and technicians undertook research through the practice of performance and reflecting on the experience.

This practice-led approach is a key method of investigation within the creative arts, over the last decade, in the UK and Australia (Piccini, 2002; Haseman, 2006). According to Brad Haseman, such research begins with an 'enthusiasm of practice', in this instance the course co-ordinator's interest in staging new technologies (2006, p. 100). This approach then encourages the participants to constantly reflect on their practice as they engage in studio-based research through rehearsal. At the conclusion of the rehearsal process the performance serves as a research 'text' within itself i.e. the creative conclusion to the work is the research, which in this case study is the staging of a virtual world. Haseman argues that when 'research findings are presented' as performances or recordings of performances they constitute 'performative research', a new 'category' of research 'distinct' from quantitative and qualitative research methodologies. This situates this practice-led case study as combining traditional qualitative research, relying on written text with the performative, expressed in 'still and moving images' (2006, p. 102-103).

## Case study

The case study reported in this paper is based on a second-year visual theatre course (*Electronic Arts: Visual Theatre*), which is a core course for students majoring in drama and film in the Bachelor of Media Arts program offered by the School of Communication, International Studies and Languages at the University of South Australia. *Electronic Arts: Visual Theatre* provides students with foundation skills in the application of new technologies to performance. In 2008 the focus was on a research project: *Staging of Second Life*, in which students enrolled in the visual theatre course attempted to stage the online virtual world *Second Life* in a conventional proscenium arch theatre, playing on the liminal space between 'real' and 'virtual'. Through this experience students were introduced to the interplay of the arts and technology and given the opportunity to both practice and research the co-relations between different media. The *Staging of Second Life* reflects a growing trend in performance pedagogy where technology and new ways of thinking about its applications are increasingly integrated into the curriculum. This paper describes the practical aspects of the course as well as the emergent theory of intermediality underpinning the *Staging of Second Life*.

*Electronic Arts: Visual Theatre* is a second-year course conducted on a weekly 3-hour basis over a 12 week period. The course offers students the opportunity to create performance work that integrates visual technologies. Compositional principles are conveyed through the body and technology and developed via improvisation and team work. Reference to historical and new emerging technologies offer interesting and exciting vantage points from which to explore the creation of highly visual stage work. On completion of this course, students should be able to:

- make judgements about the use of scenographic projection and parallel technologies;
- develop projects employing visual theatre elements;
- understand and engage with audience reception of multiple visual communications

The drama program at UniSA focuses on performance making and the *Electronic Arts: Visual Theatre* course encourage students to think of themselves as creators or devisors in a variety of roles including performer, technician, stage manager, technical operator and director. The course also gives strong prominence to experiential learning and provides students with the opportunity to engage in a process of trial and error as they negotiate the generation of ideas and the challenges of implementing these ideas in the theatre. Students completing the course are required to demonstrate their understanding and mastery of visual theatre concepts based on the following criteria:

- Integration of the live performer with the projected image
- Live body extension, posture and balance
- Live and virtual bodies, voices and characters
- Rhythm of live and projected action

- Relating to the audience
- Geography of a virtual world such as *Second Life*

## Learning activities

Over a four-week period twenty-one students (13 male and 8 female) undertook the *Staging of Second Life* in a conventional proscenium arch theatre. Following a session in a computer laboratory exploring the *Second Life* environment, the students rehearsed short scenes that were shown as a workshop-in-progress to an audience of University staff and students. The students were directed by their course coordinator, Russell Fewster and visiting director, Joff Chafer from Coventry University, assisted by lighting designer, Nic Mollison and computer programmer, Kyal Tripodi.

Students spent their first class in a computer laboratory creating their own avatars. For most this was their first experience with *Second Life*. Attempts were made to co-ordinate the group to do a series of actions together with varying success; first positioning the group together as a starting point and secondly simple gestures such as bowing, clapping, blowing a kiss became realisable. More complicated movements like flying together were problematic as it was too difficult to keep the group together. The notion of how *Second Life* gestures might translate theatrically offered a way to transpose the virtual into real life; indeed feedback from students and the programmer highlighted the ‘clunkiness’ of *Second Life* i.e., the time lag between typing and responses, and the robot like stiffness of the gestures. In turn, the course coordinator encouraged the students to consider how they might stage this ‘clunkiness’ and to play with and enjoy transposing such *Second Life* clichés theatrically.

## Set-up of the theatre

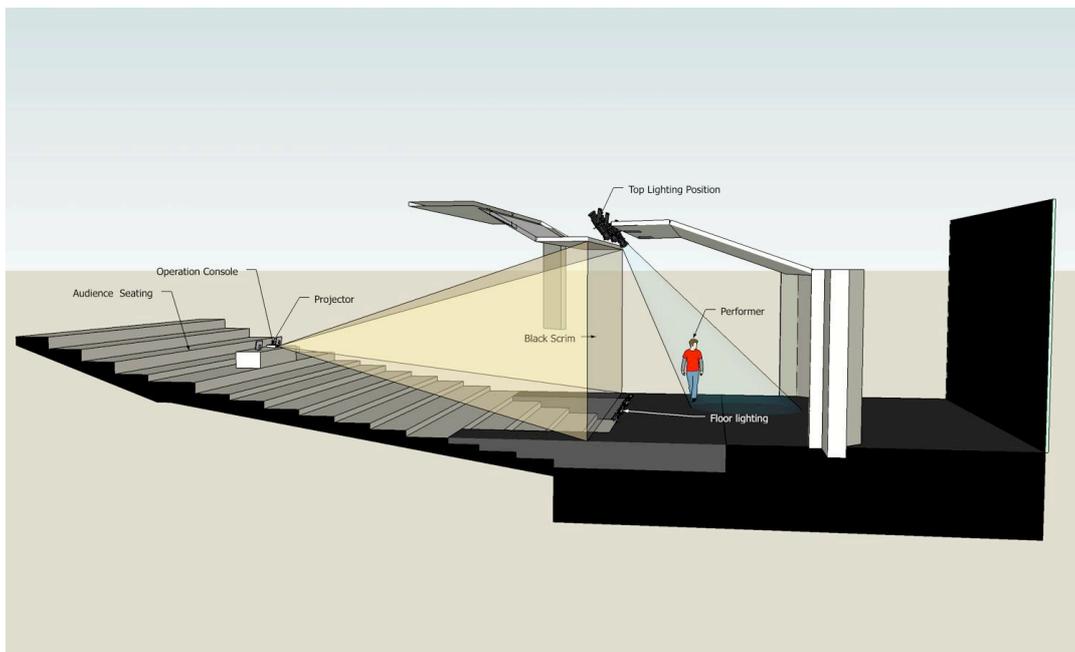
The set-up of the theatre (Figure 1) was designed to create the illusion that avatar actors and live performers were interacting in the same shared space. To achieve this illusion the *Second Life* world was projected onto a large scrim positioned at the front of the stage and the student performers located behind the scrim on the stage were lit appropriately to appear as if they were in the same space as *Second Life*. The stage lighting was set low to avoid washing out the projected image and to balance the illumination of the live actor with the projected image.

Two computers located in the auditorium were used to control the camera and projection unit, and to act as the controller for the actors. The second computer allowed technical support staff to move avatar actors around the 3D environment and to set-up props that did not appear on camera but were visible on the avatar actor screen. The overall goal was to ensure avatar, 3D props and the virtual landscape could merge with the live performer so that the virtual and real had a sense of shared time/space continuum. This required the use of two main techniques designed to match the two spaces by overlaying the 3D space in the real theatre space: 1) positioning the avatar in the 3D space to match the size of the live performer and 2) lighting the physical stage floor while projecting the avatar into this space to create an illusion that the avatar was standing on a physical floor plane. This helped to give the impression that the interactions were occurring between the live and virtual actors in the same shared space.

## Working with the live performers: Rehearsal to performance

The first rehearsal in the theatre involved students mimicking gestures in real time. Following the rehearsal, the students formed groups of between five and six students and improvised short scenes, which were then worked up for staging. Students played out *Second Life* clichés of time lag and stilted gestures creating comical routines designed to emphasise the “clunkiness” of virtual worlds. The varying gestures of *Second Life* avatars are fixed and restricted to certain types of movements that are embodied in a mechanical manner. For the performer to interact in a meaningful way with the avatars they had to similarly embody *Second Life* gestures and movements. Through trial and error it became evident that simple interactions between performer and avatar were the most effective. Thus narratives proposed by students were simplified to limit the programming and live manipulation of the avatar to a set number of movements and gestures. Following are descriptions of the scenes constructed by students:

The *first scene* involved improvisation of the game ‘rock, paper scissors’. This group of students developed a scene that began with one student playing against an avatar projected onto the scrim, that was then extended by two more students entering and another avatar entering as well. A mock fight then occurred between the two groups of live performers and avatars, after which avatars and live actors



**Figure 1: Set-up of the theatre showing scrim in front of actors on stage and lighting**  
(Image courtesy of Nic Mollison)

exited. Live actors would replicate the ‘muscle flex’ gesture of the avatar symbolising victory when they ‘won’ the game, while the avatar’s gesture would be to cry; when the live actors ‘lost’ they would replicate the crying gesture while the avatar would embody the victory gesture and so on.

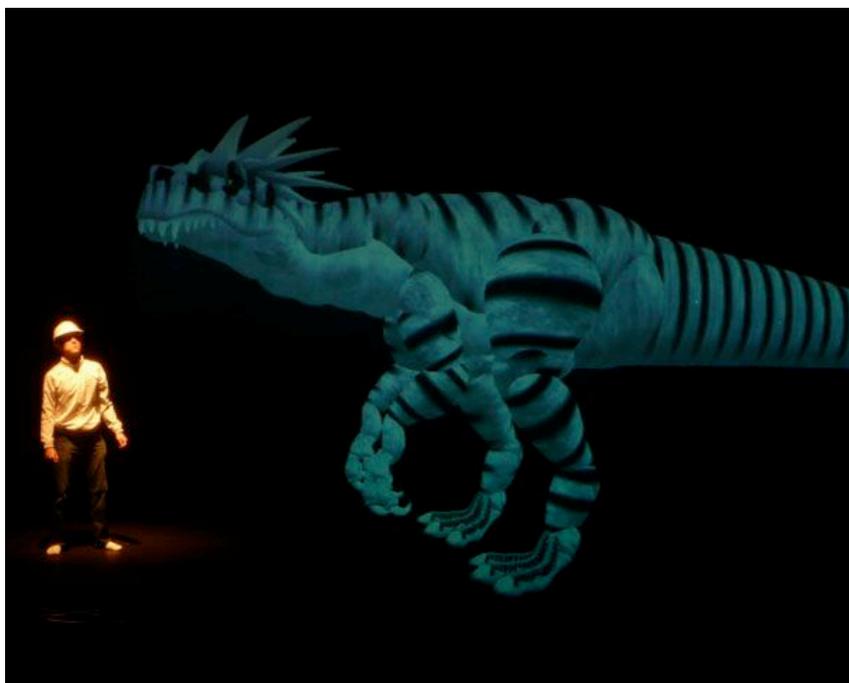
The *second scene* drew on two techniques: the first was based on the early silent films of George M  l  es, which focused on magic and slight of hand; the second technique drew on traditional Japanese Bunraku style puppet and object manipulation techniques. The piece began with an avatar creating a box in *Second Life* that was projected onto the scrim; the box was moved through space before disappearing or rather dissolving into an identical real box that was suddenly revealed on stage. Out of this real box emerged an actor holding a stick with ping pong balls to replicate the building signals of *Second Life* who then created a ball. The ball appeared to the audience to be a virtual ball, but was in effect a large white balloon illuminated by a torch and fixed to a boom attached to the balloon, which a hidden puppeteer operated. This piece therefore mixed live actors with avatars and real objects with a virtual object to blur the boundaries between the real and the virtual worlds.

The *third scene* played heavily on the time lag and ‘clunkiness’ of *Second Life* gestures. Live actors mimed throwing the ‘virtual’ ball to each other with significant delays between the ball arriving in their vicinity and their attempts to catch it. The piece began with live actors and the puppeteer-operated balloon after which an avatar joined in with the game. This scene, as with the first scene, progressed to a mock fight in which the avatar and live performers took turns knocking each other over with the balloon ball.

The *fourth scene* was one of the more effective scenes for its simplicity and economy of staging. The ball was transformed into a virtual mirror ball accompanied by a musical piece and an avatar entered and began to dance with the music, employing ‘bump and grind’ gyrating movements. A live actor was then revealed upstage and danced with the avatar, emulating the avatar’s movements. The connections between the two were most obvious when both avatar and live performer were simultaneously dancing the same movement. This scene also reflected the importance of physically separating the performer and the avatar to better distinguish between them.

The *fifth scene* integrated the *Second Life* landscape with the live performer. The performer mimed lifting off to fly with the *Second Life* landscape falling simultaneously around them; a technique borrowed from M  l  es and known in cinematic terms as the ‘matte’ effect. The performer who lifted off was then replaced by a performer lying flat on a hidden bench who mimed flying through the *Second Life* landscape twisting their torso sideways and up and down as they seemingly passed between the projected buildings and mountains. A kinetic integration was achieved between live performer and the projected *Second Life* landscape.

The *final piece* involved a giant avatar of a T-Rex, which dramatically filled the stage. A live performer entered and called out 'Rex' much like calling to a pet dog. The projected T-Rex subsequently appeared and approached the actor (Figure 2). After some verbal coaching from the performer, the T-Rex sat as a dog would follow instructions from its owner. The T-Rex then began to become overtly excited, jumping up and down bringing down a virtual lighting rig (created to mimic the actual rig in the theatre) resulting in the actor rapidly exiting. One of the key ways of integrating the T-Rex with the actor was to program the T-Rex to swing its tail around in a 360 degree sweep and have the actor duck at the opportune time. This gave the illusion of the two being connected by the same action creating a sense of cause and effect between avatar and actor.



**Figure 2: Live student actor interacting with the T-Rex avatar on stage**

The twenty-one students enrolled in the course were invited to complete an anonymous online questionnaire at the conclusion of the semester. This questionnaire included questions aimed at identifying students' familiarity with and use of Web 2.0 and 3D virtual world technologies, and to assess the extent to which the *Second Life* platform of delivery was perceived by students to support the objectives of the course and enhance their learning. The questionnaire included a mix of Likert-scale (5 point scale ranging from 1 strongly disagree to 5 strongly agree) and open-ended text field questions. The results from this evaluation are reported in the next section.

## Results

Fourteen students (66.7%) responded to the evaluation; of those 7 (50%) were male and 7 (50%) female. The ages of the fourteen students ranged between 19 and 24 years. All respondents had computers and broadband access at home and stated they use the computer at home frequently or often.

Students were asked three questions relating to the effectiveness of social interactions in *Second Life*. The average rating overall for these questions (based on a scale of 1 representing strong disagreement, 3 representing a neutral agreement and 5 representing strong agreement) was 3.25. The criterion with the highest rating 'The learning offered opportunities for interaction and communication in *Second Life*' received a rating of 3.62. The next highest rating was for the criterion 'I was able to be expressive in *Second Life*' (3.21). The lowest rating was for the criterion 'I felt as if I was communicating with a real person in *Second Life*' (2.92).

Student ratings of the nine criteria relating to the effectiveness of learning activities in *Second Life* were higher than for the criteria relating to social interactions. The criteria that received the highest rating were: 'I was willing to put in the effort needed to complete the learning activities' (4.29); 'I was engaged in the learning experience in *Second Life*' (3.71) and 'The learning experiences were active and collaborative in *Second Life*' (3.64). The next highest rating 'I liked using *Second Life* as part of my course' (3.50) was

interesting given the students' rating of the criterion 'I would take another course that used *Second Life*' was much lower (2.79). This rating would appear to be an accurate reflection of respondents' views, since reverse ratings were obtained in response to an alternative question included in the survey, which was worded negatively 'I would avoid using classes using *Second Life* in the future'. Students rated this criterion as 3.21, with only 3 (21.4%) media arts students disagreeing (1 strongly disagree and 2 disagree), and all but one of the remaining students strongly agreeing (21.4%) or agreeing 6 (42.9%) that they would avoid taking courses that use *Second Life* in the future. The one remaining student responded to this question with a neutral rating. This finding indicates that even though students in the main agreed that using *Second Life* in this course was worthwhile, they would not want to continue using *Second Life* as part of their studies in the future.

Students were also asked a series of questions relating to the adequacy of the preparation they were given and the supports available to them in *Second Life*. The overall student rating for these criteria was 3.47, with the highest rating for the criterion relating to the clarity of the introductory explanations (3.57) and the lowest rating relating to how well the activity was organised in *Second Life* (2.50)

Student responses to a series of open-ended questions about their experience in *Second Life* suggest that some of the technical limitations of the communication tools in *Second Life* impacted on the effectiveness of the medium for interaction in-world. Several students commented that since they were already communicating in 'actual life' the limitations of the chat tools made communication more difficult. One student noted that 'it was exactly like using a chat room only more complex and complicated, just because it has more options doesn't mean it's better'. Conversely, another student suggested that 'We didn't actually use *Second Life* much ourselves, but we did all enjoy it in the class when we all used *Second Life* together and generated some good interaction both in-program and in real life'.

Several students commented on the need for more time to become acquainted with the environment as well as the technical demands in integrating the virtual with live theatre. As one student pointed out 'We could have done with a lot more time learning about how *Second Life* worked, because there were a lot of problems to work out technically, as well as problems staging'. This is not a surprising response given, contrary to our expectations most students were not familiar with 3D virtual worlds or games prior to taking this course.

## Discussion

Estelle Barrett in developing a guide to creative arts practice research states that:

One of the crucial questions to be addressed in studio research is: What did the studio process reveal that could not have been revealed by any other mode of enquiry? (Barrett and Bolt, 2007, p.186)

The process of staging *Second Life* revealed that the play between the real and digital was achieved by the student performers observing and then embodying the stiffly programmed and somewhat uncoordinated gestures and movements of *Second Life*; this in order to appear as much as possible like an avatar. In turn the performers' actions that directly responded to the virtual world aided this effect of integration; the cause and effect of the swinging tail of the T-Rex and subsequent ducking of the live performer and the games of rock paper scissors and passing the ball between performer and avatar all served to bring the real and digital together in a shared time/space continuum. Similarly, an object that could be replicated in both 'real' and 'virtual' spaces such as the box served to cross over effectively between the two worlds. The real balloon/ball gained its efficacy much like the performers for appearing to be digital.

Barrett comments that reflection upon the 'studio process [...] is a means of locating the work within the field of practice and theory (2007, p.186). *Staging Second Life* enacted Kattenbelt's theory of the theatre as 'hypermedium' where the stage remediates the digital in order to theatricalise it (2007, p.4). Subsequently, in *Staging Second Life* there was an interplay between performer and avatar resulting in a 'mutual affect' between these different media (Kattenbelt 2007, p. 6). That is, the interaction between the live performer and digital performer creates something greater than the sum of the individual parts, a merging between the live and the virtual. As pedagogical practice this reflects the reality that increasingly theatre is digitalised and teaching methodologies within the field are being determined by digital technologies.

The trial of *Second Life* in the *Electronic Arts: Visual Theatre* course demonstrated the potential of 3D worlds to engage students in collaborative performance activities that combine the 'real' and the 'virtual'.

While it is likely that the technical issues did frustrate many students, the problem solving that arose from addressing the challenges clearly engaged some of the students who were then able to see the potential of mediated performance despite the technical constraints of the *Second Life* platform. The observation that most students regarded the learning experience as worthwhile indicates that they did see some merits in the experience, even though most students stated they would not like to undertake another course using *Second Life*. Given some of those students did suggest alternative platforms that might be used in future offerings, it would seem that the limitations of *Second Life* as an environment should not be regarded as a reflection of the possibilities afforded by 3D virtual world platforms in general.

Notwithstanding the specific limitations of the platform identified by staff and students, the trial of the use of *Second Life* in this course did highlight several issues that can be addressed in future offerings of the course. It was apparent that students need more time to become familiarised with the 3D virtual world environment; one should not assume that students have any prior experience using such environments. Students also need more time to rehearse their performances and as one student noted, to also watch recordings of their rehearsals to be able to better reflect on changes they need to make in the final live performance. Many of the technical problems staff and students experienced in combining the virtual with live performance have been identified and strategies for addressing these limitations identified through a process of trial-and-error undertaken during the course. While this trial-and-error process reflects the nature of a research laboratory, not all students were resilient enough to cope with the technical frustrations they experienced. A better balance between engaging students in problem-solving and collaborative activities, and the challenges that arise in such an experimental laboratory can be achieved in future offerings now that many of the unexpected technical difficulties have been identified and addressed.

## Conclusion

The staging of *Second Life* project reported in this paper gave the students an opportunity to transpose a virtual world into a theatrical setting. The students actively played between these two media in turn becoming 'intermedialists'. Within the hypermedium of the theatre they were able to remediate the conventions of *Second Life* via their bodies and manipulation of objects. This reflects a trend in performance pedagogy where technology and new ways of thinking about its applications are increasingly integrated into the curriculum. The staging played upon the liminal space between 'real' and 'virtual'. There was a genuine interplay between performer and avatar resulting in a 'mutual affect' between these different media. When such mutual influence is achieved Kattenbelt notes 'specific medium conventions are broken through and new dimensions of perception and experience are explored' (2007, p. 6). As Chapple and Kattenbelt (2006) suggest, it is within this liminal locus that a process of 'transformation' is taking place that gives rise to 'new dramaturgical strategies' in contemporary performance (pp. 11-12). Such transformation occurred within a research community in which the stage acted as a laboratory for students, teachers, performers and technicians to undertake the process of practice-led research through the performance in 'real' and 'virtual' spaces. The participants were encouraged to reflect upon the studio process as they rehearsed their improvisations with *Second Life*. In this way, the performance created a research text that demonstrated how theatre might stage such a virtual world. Such an outcome expressed as a stage performance and then re-presented here as text with recorded images constitutes both a qualitative and 'performative' approach to research.

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