Second Life and the role of educators as regulators

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Regulation, governance and harms stemming from the use of virtual worlds and other Massive Multi Media Online Role Playing Games (MMMORPGs) in higher education, are poorly understood and under-researched issues. Second Life, developed by Linden Labs, provides users with a series of generic 'terms of service' and codes of conduct, yet place the bulk of responsibility on individual users or groups to report misbehaviour or develop their own behavioural codes, enforcement procedures and punishments suited to their particular needs. There is no guidebook to assist users in the processes of risk identification and management. As such, the various benefits of MMMORPG technologies could be offset by the risks to users and user-groups from a range of possible harms, including the impact of actual or perceived violence within teaching and learning settings.

While cautioning against the direct translation of real-world regulatory principles into the governance of virtual worlds, this paper suggests theoretical and practical guidance on these issues can be taken from recent criminological developments. Using Lawrence Lessig's (1999) landmark work on cyber-regulation as a starting point, this paper examines the literature on video-game violence to illustrate the need for educators show awareness of both real and perceived risks in virtual worlds as a core element of an emerging educational pedagogy. We identify how the multiple roles of the virtual-world educator become useful in framing this pedagogy to improve student learning, to dispel myths about the risks of immersive technologies and advocate for their adoption and acceptance in the educational community.

Keywords: MMMORPGs, virtual worlds, *Second Life*, violence, regulation

A snapshot of *Second Life* in education

A growing and highly sophisticated body of literature is emerging on the benefits of curriculum development and course delivery in Massive Multi Media Online Role Playing Game (MMMORPG) environments. Alternately referred to as 'virtual worlds', these environments offer a platform for globally networked social and learning interactivity in ways that are not possible through conventional printed text, video and audio based internet technologies. Through the construction and use of an avatar or digital representation of the user, one can navigate through any number of digitally constructed environments and synchronously communicate with others through speech, written text and simulated movement. Second Life is one of several virtual worlds which have captured the imagination of many secondary (Eustace, Lee, Fellows, Bytheway and Irving, 2004), tertiary (Kirriemuir, 2008) and military (Bonk and Dennen, 2005) educators throughout the world, and is employed in a range of academic disciplines including psychiatry (Yellowlees and Cook, 2006), language studies (Stevens, 2006), astronomy (Doherty, Rothfarb and Barker, 2006) and law (Horowitz, 2008). Over three-quarters of universities in the United Kingdom (Kirriemuir, 2008) and up to 250 universities world-wide are making considerable time and monetary investments to develop spatial infrastructure such as buildings, common discussion rooms, dance spaces and courtrooms, as well as functional in-world tools such as links to library database facilities, powerpoint slide projectors, audio and video streams and digital recording facilities.

After purchasing an Island from Linden Labs, the educator developing Second Life for teaching and learning becomes an interdisciplinary expert, drawing on the practical know-how of the information technology specialist to give life to the ideas of the architectural designer, the classroom communicator, the curriculum deliverer and the online assessor. These processes of environmental and functional design

are part of the attraction to this technology, as educators are no longer locked into the real-world physical spaces that contain classroom interaction within four walls. The black/whiteboard with no cleaning implement, the overhead projector with no spare bulb, the television and video/dvd player with indecipherable flashing lights and the fixed desktop computer with no internet access are things of the past. The shrewd educational developer can seamlessly incorporate these functions into the built space of the virtual world, and can add new aesthetic dimensions such as room for artwork and graffiti walls, novel forms of seating, designated spaces for instruction or team-activities, open area discussion zones or workshopping spaces and wikis.

As with any emerging technologies, the adoption of Second Life and other MMMORPGs is highly fragmented and experimental. Such ad hoc development brings considerable uncertainty about the value of these technologies in higher education, particularly for those who are either unfamiliar with their use or unwilling to experiment with immersive computerised learning. While platforms such as Second Life cannot possibly replace existing methods of educational delivery in most academic disciplines, they add to the existing suite of computerised technologies with the potential to enhance student engagement in ways that are only beginning to be understood in conventional pedagogical terms. This, in conjunction with several parallel developments, places significant limits on the building and transfer of appropriate knowledge about MMMORPG technologies. This limitation compromises the ideal of evidence-based practice, which is at the cornerstone of educational development and delivery.

Harm, risk and control in *Second Life*

These problems have a circular effect, producing a haphazard approach towards identifying problems associated with harm and risk within immersive digital environments, and equally haphazard regulatory policies by Universities, Faculties and individual teachers to counter these problems. In an extensive review of codes of conduct dealing with MMMORPG technologies, we have identified two major trends informing their uses, further development and governance in Australian and overseas Universities. These are depicted in Figure 1 below. The first involves a 'fatalistic', 'enclavist' (Douglas, 1992) or 'hostile' approach. This approach views harm in virtual worlds as a ubiquitous phenomenon that cannot be precisely identified or adequately prevented, save through punitive measures aimed at confining, restricting or outlawing their use. This approach tends to view MMMORPG technologies as mere games, which portrays a broader view that they are technical indulgences and ultimately unviable as educational tools until technical developers such as Linden Labs can provide greater assurances of safety. This view displaces responsibility for risk management back onto the manufacturer of the technology, rather than accepting that educational institutions have an important stake in this process within a deregulated environment.

The second approach is a 'formalistic' one. This favours the direct translation of real-world notions of risk, harm and their control into the virtual domain (Mnookin, 1996). Therefore, existing rules and procedures dealing with appropriate forms of online behaviour are simply extended to encapsulate teaching and learning through MMMORPG platforms. This alternative has some logical merit, if one accepts the functionality of these platforms equates with existing uni-dimensional forms of internet learning. However, this approach also suffers by offering limited recognition of the character of the immersive experience, and how this might differ from real-world physical harms or the known effects of abusive text- or speech-based conduct currently invoked to govern blog postings, discussion boards or other conventional forms of e-communication. The formalist approach therefore fails to consider how meaningful learning experiences or viable methods of promoting good behavioural conduct can be shaped according to the specific character of immersive learning technologies.

Both of these approaches risk stifling the development of innovative teaching and learning approaches to using MMMORPG technologies, by misconceiving the very nature of harm, and the appropriate responses to it, which can be associated with digital immersive learning in educational settings. To illustrate this point, one study indicates that unwanted violence and other forms of problematic activity, such as simulated sexual behaviour or harassment, were of concern to over 50% of survey respondents who used Second Life in 2006. When questioned about the most viable response to these problems, 36% advocated more security in the form of a formal 'police or law enforcement' presence within Second Life, accompanied by tighter ruling legislation and user terms of service (de Nood and Attema, 2006, p. 36-37). The practical problems of *how* this structure would work, who would carry out these functions and whether they would actually heighten feelings of security by minimising these harms in practice, remain open for debate. More problematically, the use of real-world policing and security discourse in Second

'Fatalistic', 'Enclavist', 'Hostile' Approach	Formalist Approach
Prohibits gaming, use of false identities and other core requirements central to MMMORPG technologies; Harm perceived as ubiquitous and drives risk management discourse; No or highly limited educational utility; Legitimises conventional teaching pedagogy at the expense of technical innovation; Others (like Linden Labs) bear primary responsibility for creating safe environments	Equates harm in MMMORPGs with existing forms of real-world or online harm; Existing governance methods translated or extended to cover MMMORPGs; Qualified educational utility allowing trial and some development subject to existing University rules; Limited recognition of technical innovation subject to existing rules and pedagogical conventions; No recognition of harm specific to the immersive environment

**Figure 1: Current regulatory patterns for the use of
MMMORPGs in educational settings**

Life is laden with preconceived and untested notions of how 'inter-real' (de Nood and Attema, 2006, p. 14) harms can be identified and responsibly dealt with, in a context where in-world behaviours invariably share some similarities with their real-world counterparts, but are not-quite-so.

The findings of de Nood and Attema are similar to those of many real-world fear of crime surveys. For example, almost 40% of Australian respondents to the 2004 International Crime Victimisation Survey felt 'a bit' or 'very unsafe' walking alone in their local area after dark (Johnson, 2005). This was despite the actual risk of criminal victimisation being relatively low, and the impact of several related variables including respondent demographics, prior experiences, and the availability, character and responsiveness of policing services (Box, Hale and Andrews, 1988). There is also considerable empirical evidence that much fear of crime is either misrepresented or exaggerated (Farrall and Gadd, 2004). For instance, Farrall's (2007) re-examination of the 'expressive' dimensions to the British Fear of Crime Survey, which investigated the interpretive process driving public concerns about crime, found that people who express a fear of crime are actually:

> … articulating a generalised sense of risk which is embedded in and expressive of a whole set of risk interpretations of social order and moral consensus (or a) … diffuse anxiety … about the way 'society was heading' (Farrall, 2007, pp. 16 and 18).

These concerns translate directly into the broader world of the internet, and have a particular resonance with fears associated with the permeation of internet pornography, paedophilia and cyber-stalking. In other words, the expressions of fear relating to the internet, which includes virtual worlds such as Second Life, can be expected to be driven by similar 'backstage' concerns as those shaping real-world fear of crime survey data. As a result, caution needs to be exercised as to how we identify, manage and respond to these fears, lest we unduly restrict MMMORPG technologies as educational resources.

At best, the current knowledge of harms and their impact when using these emerging educational media are 'works-in-progress', warranting further investigation before they become mired in complex, restrictive and inappropriate real-world governance requirements, or before we give up all hope and re-delegate that task back to the manufacturers of these platforms. Educators are responsible for framing the various pedagogies for using these emerging technologies in teaching and learning. Educators are also responsible for understanding notions of risk and risk management in both in the real-life classroom and when teaching online. However, the task with MMMORPG technologies is complicated by the lack of precedent to draw on in relation to the educational merits of computerised immersive learning technologies. The emotive area of gaming and violence offers a pertinent illustration of the problems facing educators using MMMORPGs when developing their own awareness of appropriate harm identification and minimisation strategies, and in convincing others that simulated activities or play within virtual worlds has meaningful educational value and can be adequately governed through novel, innovative methods.

Guilt by association?: Gaming, violence and *Second Life*

Unlike many MMMORPGs, such as World of Warcraft, Second Life is not a goal directed 'game' with a definitive end point or purpose. Rather, it is a virtual world (Duranske, 2008) where people and their avatars socialise, engage in commercial, educational or artistic activity, or simply 'hang-out' and chat

over a virtual coffee or across a crowded dance floor. There is no doubt this virtual world does have violent components. Guns and other explosive devices can be purchased and discharged in public areas, often to the consternation or annoyance of legitimate users of these spaces. In 2007, Ohio State University was forced to close off their Second Life Island to evict a random gunman who had infiltrated the campus. This incident occurred soon after thirty-two people were killed in the Virginia Tech massacre on 16 April 2007, an incident attributed by some North American commentators, including Dr Phil McGraw (Larry King Live, 2007), to the perpetrator's use of violent video games. Therefore, the digital, animated and inter-real character of Second Life, combined with its largely anonymous global user population, ensures that when such incidents occur, parallels are often drawn with other multi-user video game platforms or publicly accessible internet and tele-visual environments which depict, promote or utilise violence as a core objective of their activity. Popular fears associated with the instrumental use of, or innocent exposure to violence in these immersive media relates to their spill-over effects on real-world behaviours. In this respect, two strands of argumentation and research can be discerned which heighten public concerns over the utility of these media for teaching and learning, and generate calls for tighter and more formalistic regulation to prevent such harms, or more hostile and fatalistic approaches favouring the abandonment of these technologies.

The first involves the largely immeasurable connections between virtual and real violence, which are generally associated with the rising culture of violence permeating Western societies. The argument here is Western culture is 'immersed in visual violence of all kinds on a daily basis as entertainment' (Guertin, 2007), which in turn explains why violence in general, and horrific incidents such as the Virginia Tech massacre, are of increasing concern in contemporary society. The causal relationship between digital culture and any actual or perceived increases in real-world violence emerges from various sources. The widespread promotion of violence and other harmful activity depicted in comic books (Kirsh and Olczak, 2002), music videos (Smith and Boyson, 2002) and televised news (Strasburger, 2004) are common sites of criticismd used to endorse calls for harsh regulatory counter-measures including censorship, increased parental monitoring of child media consumption patterns or outright prohibition to stem the rising tide of real-world violence. Invariably, the focus is on suppressing cultural artefacts which are specifically marketed or attractive to young people, with tighter regulation usually based on vague paternalistic ideals which support the protection of society as a whole rather than an individual's self-perceived susceptibility to acting out the violence they consume (Hoffner *et al*, 1999).

While the 'culture of violence' argument has strong intuitive appeal, it is based on anecdotal rather than empirical evidence. Moreover, the persuasiveness of these arguments and the publicity surrounding them, particularly after crimes such as Virginia Tech, do more to promote heightened public fears about media-related violence rather than informed discussion about how to combat criminal violence. Indeed, this whole argument is undercut when it is recognised that at the very time immersive MMMORPG platforms and computer games have saturated the modern cultural landscape in the past 1- to 15 years, official statistics suggest real-world criminal violence has actually been declining significantly in most Western societies (Romer, Hall Jamieson and Aday, 2003; Bricknell, 2008).

The second is the logical extension of the culture of violence argument, and stems from a growing body of literature in the fields of social- and neuropsychology identifying some problematic connections between those who become immersed in digital gaming activities and their tendency to act violently or aggressively when engaged in real-world tasks (Dill and Dill, 1998). Controlled laboratory experiments which expose research subjects to video games with the sole or primary objective of using violence to achieve a desired end, then measure the user's heart-rate, anxiety levels or responses to short reaction-time activities (Fleming and Rickwood, 2001), suggest a strong causal connection between the requirement to act violently during immersive video game-play and increased levels of aggression when the research subject is confronted with a complex real-world activity. This trend is observed more commonly in young men (Bartholow and Anderson, 2002). Anderson's (2004) meta-analysis of experimental and correlational studies suggests the interconnectedness of video-game violence and real-world aggression has probably been underestimated in previous research (Anderson *et al*, 2003). According to Farrar, Krcmar and Nowak (2006), the spill-over effects of violent video game-play can be magnified depending on the level of immersion permitted by the technology. Therefore, the connection between virtual and real violence or aggression is heightened if the user is exposed to enhanced graphic depictions of blood (which can usually be activated or deactivated in 'blood-on/off' modes) and is engaged in first- rather than third-person play-mode. Carnagey, Anderson and Bushman (2007) take this logic further and establish a similar link between violent video game-play and the user's desensitisation to depictions of real-world violence.

However, these narrow cause-and-effect findings of violent video-game studies, often generated within the artificial environment of the laboratory, do not easily translate into real-life in general, where a range of social, cultural and behavioural inhibitors towards the use of violence come into play, or in the open access context of Second Life, where violence is an incidental rather than instrumental component of in-world activity. As with many forms of nuisance or offensive behaviour which are relatively common in most internet environments, violence in Second Life is a by-product, rather than a primary desired end of this technology. However, the very game-like appearance, functionality and perception of the activities occurring within Second Life mean that it risks being tarnished by association due to the negative publicity surrounding video-game violence. Further, the capacity of immersive digital cultures to cause actual real-world harms, as opposed to mere inconvenience or a nuisance when one is navigating through a virtual world, is highly questionable. Instrumental or unexpected violence and other forms of potential harm which occur within MMMORPGs are mediated through animated characters which do not bleed or die when shot and where buildings and other objects which appear to be completely destroyed by a virtual terrorist attack, can easily reappear when the back up files are located and reloaded into the system. This 'game-like' character is recognised by users of these platforms (Kerr, forthcoming), but might be a source of consternation amongst non-users unfamiliar with the intricacies of their use.

Two possibilities stem from these emotive binary and oppositional debates, rather than informed dialogues (Tannen, 1998) surrounding the impact of video-game violence on real world behaviour. The first is that *any* incident of violence which occurs within Second Life or other MMMORPGs used in an educational context, such as a random shooting, a virtual terrorist attack or some other act with a horrific real world equivalent, will undoubtedly focus the parameters of debate about the educational utility of immersive digital media into the spill-over effects of violence in real-life. The main factor contributing to this is the tendency of popular discourse to draw connections between the virtual and the real. Therefore, educators using these platforms need to be conscious of not only the immediate safety and sanctity of teaching and learning environments for the protection of their students, their personal and their institutional reputations, but also outside forces sceptical of the value of novel educational media.

The second relates to Second Life and other MMMORPGs classifiable as networked virtual worlds, rather than games utilising different forms of violence as a central means of achieving a desired end goal. Unlike World of Warcraft, where violent activity is relatively commonplace as part of the game, violence in Second Life has an inter-real quality. A virtual random shooting can bear many similarities to one which occurs in real-life. Innocent bystanders will be immediately shocked by the noise and its intrusion within spaces designed for quiet conversation, socialisation or teaching and learning. However, the harm such events can cause in real-world terms is more akin to a disruptive nuisance as opposed to physical carnage. The transposition of virtual and real-life *effects* associated with any violent activity, a driving theme in popular debates surrounding video-game and other tele-visual violence, is to be expected in a medium which draws so much educational utility from the concept of 'immersion'. This means educators using Second Life and other MMMORPGs need to be cognisant of these trends in popular debate to legitimise their own teaching and learning practices, or recognise appropriate risk management strategies to prevent such incidents from occurring in the first place.

Governance and regulation in MMMORPGs

In one of the few studies examining the evolution of rules within shared internet gaming platforms, Jennifer L. Mnookin (1996) documents how the administrators of LambdaMOO, one of the first purely text-based virtual worlds, devolved regulatory power from the platform's oligarchic centralised process to create a pure democracy to be run by the users themselves. This shift was considered by the 'wizards' to be the best way to accommodate the burgeoning popularity of the platform, which at the time attracted over 800 users per week located in at least 30 countries.

> I believe that there is no longer a place here for wizard mothers, guarding the nest and trying to discipline the chicks for their own good. It is time for the wizards to give up on their 'mother' role and to begin relating to this society as a group of adults with independent motivations and goals.
>
> So, as the last social decision we make for you, and whether or not you independent adults wish it, the wizards are pulling out of the discipline/manners/arbitration business; we're handing the burden and freedom of that role to the society at large (Mnookin, 1996, p. 3).

In the week from 30 June to 6 July 2008, Second Life recorded over 596 times the number of weekly users LambdaMOO attracted when it made its regulatory shift in 1993, with a total of 14,267,345

members world-wide (Second Life, 2008). The global scale of this platform suggests a deregulated environment is essential to accommodate the dispersed nature and diverse activities of its user populations. However, within this framework there are many regulatory choices available to Island owners. These can be activated through any combination of technical digital design codes, the development of norms or rules of appropriate conduct suitable to any given environment, the use formal institutional regulations and even market economic constraints. All of these choices must comply with accepted legal requirements (which in turn are far from clear in a global, transnational, and multi-jurisdictional environment) and terms of service agreements developed by Linden Labs. To illustrate one series of choices, technical and digital environmental design strategies could include any or all of the following to deal with any range of in-world behaviours in the educational setting:

i)   the use of verbal warnings or signs;
ii) creative architectural design promoting the notion of 'defensible space' (such as minimising alcoves, designing open public spaces, or restricted access to students only);
iii) controls on avatar movements and functionality (to prevent the discharge of firearms, to disable audio transmissions or other functions which could cause harm);
iv) the employment of in-world security agents or police to monitor user behaviour and evict unruly avatars.

Linden Labs terms of service arrangements, to which all users must agree when registering an account in Second Life (Linden Labs, 2008a), provide an over-arching series of general standards of in-world behaviour, which are akin to netiquette conventions applied to blogs or online discussion posts. The terms of service agreement includes stern warnings against acts of '*intolerance*' that might '*marginalise, belittle or defame individuals or groups*' based on any resident's '*race, ethnicity, gender, religion or sexual orientation*', as well as behaviour that harasses, assaults and disturbs the peace. They also provide advice on content ratings used on different islands, instructions on how to invoke formal complaints procedures, how to respond when unexpected weapons fire occurs, instructions on how to protect personal data and engage in secure online transactions, and a list of penalties administered by Linden Labs, including the power to banish avatars from the platform (Linden Labs, 2008b). A public 'incident report' provides a list of misdemeanours processed through the complaints mechanism, with most allegations involving 'disturbing the peace', which includes 'spamming', harassment through advertising violations, weapons testing in unauthorised areas or harassment in safe areas. Standard penalties are relatively minor, and generally involve an initial warning followed by suspension of access rights for periods of one, three or seven days (Linden Labs, 2008c). This highlights that responses to complaints by Linden Labs are relatively piecemeal and non-punitive. Within this structure, administrators of individual Islands have considerable discretion to supplement these community standards through any combination of regulatory forms, or even experiment by having no regulation at all.

Figure 2 depicts the structure of 'net-federalism' (Greenleaf, 1998) which characterises Second Life and other MMMORPGs. Drawing on the landmark work of Lessig (1999), the top half of the diagram indicates that a combination of norms of appropriate conduct, market forces, digitised codes and real-world laws and procedures operate as inter-related and generic foci for regulatory activity in the digital, multi-user realm. Within this framework, net-federalism allows user communities to generate different forms of site-specific regulation geared to their own requirements, which incorporate the umbrella criteria, but can modify these as needed provided this does not cause harm or offence to others. Although Linden Labs, and potentially the requirements of real-world law, have the ultimate power to superimpose any current or new criteria over those adopted by user communities, this will only be done in extreme cases where day-to-day governance in individual sites becomes ineffective, or when complaints to the higher authority of the platform administrators or judges and legislators demand greater external oversight.

This site-specific structure is replicated in many real-world regulatory contexts, generating the descriptor 'bubbles of governance' to illustrate the multiplicity and fluidity of regulations applying to human behaviour in various cultural and spatial settings we encounter in day-to-day life (Rigakos and Greener, 2000). The internet and virtual worlds promote this very structure, as the overarching powers of site administrators, ISP providers and the formal real-world policing and legal systems are incapable in providing constant or effective regulation over each and every type of activity occurring within virtual worlds and the internet more generally. By necessity, this structure offers sufficient flexibility to cater for the specific requirements of very distinct communities engaged in a wide range of activities in ways a unified, monolithic legal structure cannot accommodate. A community's rules, regulations and methods of enforcement can also evolve and adapt more readily to proactively counter specific and newly emerging risks arguably more responsively than formal regulatory mechanisms administered at 'arms
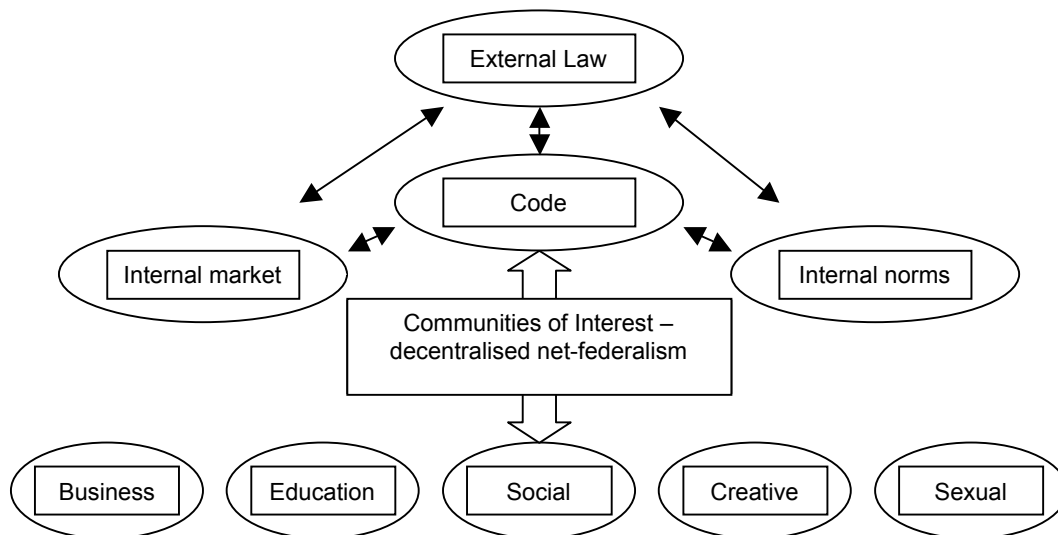
Figure 2: Net-federalism in virtual worlds

length'. Indeed, most MMMORPG platforms are intentionally constructed in this way to encourage the devolution of regulatory responsibilities to individual users or user groups, to maximise the prospect of user-centred innovation and creativity and to foster the prevention of undesirable behaviour for the benefit of each community of users.

Educational institutions already replicate this devolved and deregulated structure across the academic disciplines. While generic codes of conduct govern student behaviour when using University facilities, these overarching requirements supplement the various forms of discipline, professional standards and good order which are associated with day-to-day classroom interaction in the respective academic fields. These are designed to educate students in the norms of appropriate conduct in their respective professional fields. In a series of focus groups we have commenced involving Deakin University staff on the use of Second Life and the utility of existing generic rules governing appropriate online behaviour, one respondent illustrated this issue in the following way:

> This (the current online Code of Conduct) is a policy for them (students) in a student role. But for us, we would have them (students) in Second Life in a professional role, and so what I would hope is that their persona / avatar…in Second Life would maintain the correct professional boundaries as well and act with professional integrity, and it would be very different to this (current online) Code. For instance, you've got issues of patient privacy, confidentiality, respect to other professionals and all these things which are absolutely inherent in our learning objectives for the Unit that we would perhaps use this (Second Life) for … So that's where I would see the downfall of the (current online) Code.

The concern expressed here is that generic standards of behaviour in current online codes of conduct are too abstracted from the day-to-day education that students undertake in their respective disciplines as aspiring career professionals. To extend or replicate these codes into the governance of Second Life and other MMMORPG technologies across the various disciplines overlooks the crucial role of setting discipline-based standards within the classroom. This creates two obvious strictures. First, it undermines the autonomy of the Second Life educator already inculcating students with appropriate professional values in face-to-face classroom settings. Second, arms-length rules, frequently prohibiting 'gaming', 'false identity' and other activities inherent to the use of MMMORPG technologies, have the potential to inhibit innovative educational development within these environments outright, often through the misconception that MMMORPGs such as Second Life are games. Therefore, the innovative educator is in effect breaching the University rules that bind them in teaching and learning each time they attempt to use these platforms to promote new forms of educational delivery.

As the quote above indicates, educators act as regulators in delivering discipline-based Unit materials in face-to-face environments. This is built into Unit aims, curriculum instructions, assessment tasks and normative behaviours governing conventional classroom activities. University-wide codes of conduct governing emerging technologies therefore need to recognise this level of decentralisation is crucial to high-quality educational delivery, and works in tandem with broader rules governing duties of care,

minimum standards and preserving a University's good name and reputation when MMMORPGs are used in teaching and learning. As Figure 2 demonstrates, multiple layers of governance apply in the decentralised world of digital technologies. Equally, they apply in the decentralised classroom environments where discipline based pedagogies meld with the emerging digital pedagogies promoted by MMMORPG technologies such as Second Life.

Governance and regulation as an emerging MMMORPG educational pedagogy

In the virtual world, issues of law and regulation can become sites of innovation and experimentation geared to the specific needs of individual communities, enabling Island owners to adapt and respond to new problems as they arise by incorporating any range of formal or informal processes as the interactive technology permits. As a result, the Second Life educator is not only the architect, curriculum developer, instructional designer and advocate for the use and development of online pedagogies, but is also the online regulator, shaping normative and formal conduct according to their specific requirements. In a context where the merits of immersive digital technologies are hotly debated within and outside of the education sector, and much of the regulatory literature in this field provides little guidance on *how* to teach effectively and 'safely' in these environments, educators have a wide range of challenges and choices which intersect within this emerging pedagogic landscape.

Our aim in this paper has been to navigate the various risks inherent in the process of developing reactive forms of governance which are commonly invoked to deal with various problems we face in contemporary society within and beyond the digital sphere. Laws, rules, regulations and policies are usually developed in response to a problem. That problem is often framed in narrow or selective terms, which are derived from formal conventions determining how governance measures must look, proceed and operate. One core aim of all rules is to promote the 'legitimacy' of the process, usually for the benefit of outsiders who are not generally engaged in the use of novel technologies (Mnookin, 1996). These conventions work from the premise that any problem has a clearly identifiable cause and produces clearly identifiable and troublesome effects that can be solved, treated or stopped by well-informed and clearly articulated rules. This may be the case. However, this usually occurs at the expense of promoting the very values educators (and citizens) hold dear, including the power to innovate and be creative, to do so flexibly, responsively and with professional integrity, and to educate students without having their discretion undermined by volumes of rules, procedures and formal impositions bearing little relationship to the actual problems educators face in their day-to-day working environments.

This top-down approach to regulating educational delivery and innovation in a digital age is contrary to the deregulated structure inherent in MMMORPG environments. As Mnookin's discussion of LambdaMOO indicates, the wizards felt they had little choice but to relinquish centralised control over behavioural and governance issues because their task became too cumbersome. More formalised, bureaucratic or enforcement-centred responses could also have been implemented. However, this would have stifled the freedom of users to innovate, negotiate their preferences and develop appropriate regulatory choices suited to their own needs. Second Life magnifies this dilemma as computing technology has become disseminated throughout the global community. It is not surprising that Linden Labs have adopted a minimalist approach within their terms of service and community standards. Net-federalism can therefore empower users to act as regulators and actively participate in developing novel processes of governance, or adapting existing real-world rules and procedures to their particular needs (Mnookin, 1996). This does not eliminate the need for top-down governance on certain issues by either Linden Labs, real-world law, or large organisations using Second Life for education, business or other creative purposes. However, it does mean that user communities must be cognisant of regulatory issues and the various means through which these can be promoted in terms of viable risk-identification and management strategies.

The challenge for educators exploring MMMORPG technologies in teaching and learning contains two sites of contest. The first involves how educators can convince or buy-in to their own University structures to have their voices heard as classroom regulators. The second involves recognising that harm minimisation is an inherently problematic enterprise in virtual world technologies, presenting the user with many possible choices, but as yet limited guidance on what is effective. Both of these tasks relate back to the unclear fusion between disciplinary-based and technical pedagogies governing the new generation of MMMORPG technologies. In this respect, this fusion, and the understanding of its impacts, remain 'works-in-progress'.

Two examples illustrate how educators are using digital gaming technologies to enhance educational delivery and the general understanding of educational pedagogy in relation to immersive MMMORPGs.

Garris, Ahlers and Driskell (2002) have developed an 'input-outcome' model which explains how an educator's instructional content and the characteristics of the game's technical structure can promote clearly defined and desirable learning outcomes facilitating the user's motivation to learn, while simultaneously developing positive virtual and real-world skills. This model encourages educators to set clear input-output objectives when devising virtual activities as part of their curricula, even on tasks which involve exposure to digitised violence as part of the learning experience. This process simultaneously guides student learning, secures minimum standards of appropriate behaviour as the task is being undertaken, and fosters the use of ongoing and responsive evaluation methods as part of the development of any discipline-based MMMORPG pedagogy.

Gentile and Gentile (2007) take a more contentious approach by inverting the 'problem' of video game violence entirely. Their research suggests the negative connection between simulated violence and real-world aggression needs to be turned into a positive learning model. They propose five meaningful and generic educational principles derived from research which establishes that children aged between 10 and 19 years who play different forms of violent video games over time can often display heightened levels of aggression, but also higher levels of self-esteem and potentially lower rates of aggression if the computer program provides awards (points) or positive feedback for successfully completed game-based tasks. These principles become central to understanding the concept of immersion which conventional face-to-face teaching often struggles to implement.

i) Teach fewer concepts, but require that students master and overlearn them;
ii) Connect those concepts (via a spiral curriculum) to past and future learnings via continual review and practice, as well as reminders of the connections;
iii) Reinforce (extrinsically with grades and intrinsically with perceived self-efficacy) increasing levels of competence or automaticity, depth of understanding, and analytic or creative applications of these concepts;
iv) Invent more ways for students to experiment with identities relevant to their studies; and
v) Use technology where appropriate to provide practice toward automaticity in a game-like atmosphere (Gentile and Gentile, 2007, p. 138).

This logic can extend to the understanding of regulatory issues which frame good student conduct in both real- and virtual-world environments. This means that regulating MMMORPG technologies is not necessarily reduced to questions of how to prevent or eliminate violence in educational curricula, but works towards translating its potential negatives into educational positives. Therefore, criminology students using Second Life could master and overlearn issues related to violence, victimisation, empathy and governance through controlled simulated role-play in ways no real-world education setting would tolerate, either by replicating real-world events or developing simulations drawing on in-world controversies. This would allow individual educators to adopt any combination of real-world, technical or novel forms of governance to minimise harm in the role-playing environment, and promote ongoing review of both the effectiveness of these regulatory opportunities and their impact as educational devices. Reinforcing creativity and permitting invention therefore become matters of conventional educational instruction within the virtual world, rather than a result of formal rules, procedures, permissions and accountabilities produced independently of the MMMORPG environment. Determining when the use of simulated immersive technologies is appropriate therefore becomes an ongoing process of self-reflection by the educator, driven by student evaluations of individual tasks, constant revision of curricula and regulatory options, gradual modifications where problems are detected and the introduction of new developments as in-world teaching progresses. The end result is that knowledge-building relating to harm minimisation within MMMORPGs becomes fused with knowledge-building on MMMORPG pedagogies, heightening the potential for students to learn both essential course content and appropriate norms for interaction within virtual worlds. For educators, this pedagogical task simultaneously promotes innovative course delivery, while enhancing the legitimacy of digital simulations through informed processes of reflection, correction, responsive evaluation and critical, open discussion.

The issues we identify in this paper recognise teaching, learning and governance in Second Life are fluid, evolving, interrelated and emerging issues. They are at once plagued by many uncertainties, but offer a wealth of creative potential. We are concerned that the deregulated, dynamic, responsive and individuated principles of net-federalism are not always adhered to in online educational policies and procedures, and that various bureaucratic requirements commonly viewed by educators as impediments to teaching innovation are ultimately inappropriate for the problems they are attempting to resolve. Therefore, our argument supporting 'governance-as-pedagogy' involves merging educational and regulatory issues, recognising that both fields are intertwined and relevant to producing meaningful teaching and learning outcomes. In addition, the body of informed material this approach will inevitably produce has a broader

purpose of dispelling the myths that often accompany debates surrounding new technologies, their uses and their potential hazards.

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