

# Paper submission

## When the game becomes serious; what are the rights and responsibilities for and of the learner's avatar?

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Light Sequent in Second Life

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Stradd Ling in Second Life

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### Abstract

There is an ever-increasing use of virtual worlds where learners explore, experience, communicate and act. In these 3D immersive (3Di) environments the learner adopts an avatar and becomes the new persona they devise. The immersive element results directly from the cognitive, dextrous, social and emotional aspects of the experience. Virtual worlds, such as Second Life™, are becoming the home for serious learning as well as still retaining their more vicarious activities. This paper examines the issues relating to social justice and inclusion with respect to the safety, well-being, freedom and rights of avatars within a virtual world. It considers what responsibilities exist or should be made explicit when using virtual worlds as the vehicle for learning. It concludes that those responsible for training teachers need to raise awareness of the e-safety issues and provide strategies for dealing with them.

### Keywords

virtual world, teaching, avatar, cybergogy, e-safety

### Introduction

*'I am beholden by any promises my Avatar makes on my behalf and my Avatar will honour any contract I make'* So wrote Light Sequent when Stradd Ling was but a few months old. Stradd Ling is now 3 years old and sees the significance of such a promise when learners are in the virtual world.

This paper explores the issues arising from taking professional people into a virtual world for their online-learning experience, considering their reaction and proposing strategies of support. The context of the work is teacher training, the professionals will be ICT teachers and so, they tend to be open to the introduction of new technologies. Even so, there are mixed reactions to the novel experiences of emotional engagement, demands upon their dexterity, new way of thinking and the different features of social engagement. This analysis of their response parallels the 4 domains of cybergogy (Scopes, 2009): emotional; dextrous; cognitive and social.

The origin of virtual world learning lies in role-playing games (RPG), massively multiplayer online gaming (MMOG) and massively multiplayer online role-playing games (MMORPG). Those developments in the use of online resources utilised the affordances of avatar based, first person visuals and immersive features. The virtual immersive environment, 3D immersive applications (3Di) and virtual worlds (VW) where

the learner is represented by an avatar and can see themselves immersed in the learning environment. The current opportunities for educationally-based social networking and developing communities of practice include: Active Worlds, Open Sim, Second Life™, Small Worlds, SpotOn3D, Kaneva, Blue Mars and so on. Second Life appears to have established the strongest allegiance with the establishment, with leading commercial companies and educational establishments investing considerable sums of money in purchasing islands and building facilities to promote their businesses. This study is based in Second Life.

This work is set within a framework of thinking that supports the notions that the use of virtual worlds is a current and real educational and sociological phenomenon that deserves consideration. Recently, there is a raised public awareness of antisocial behaviours taking place on social networking sites such as Facebook where cases of grooming, bullying and victimisation have been reported. Incidents can have serious repercussions on the wellbeing of the targeted person, especially youngsters who are not in a strong position to defend themselves or indeed, unable to take a philosophical attitude toward it. Since awareness has been raised, supervisory adults such as parents, teachers and tutors are able to put in place preventive measures such as supervision and parental controls. There are also negative issues in the virtual world including: stalking; bullying; identity theft; prejudice based on appearance/status/quality of avatar; restrictions in freedom of expression (anti-BDSM); etc. where cyberbullying is a recognised issue. There are issues related specifically to virtual worlds. Known as ‘griefers’, there is a contingency of abusers who deliberately look for opportunities to disrupt events, damage land and property, in a similar vein to those who take pleasure in writing and distributing computer viruses, for fun. There are mechanisms that can be put in place to protect avatars, virtual property and content, however, those supervising a cohort of learners need to be educated in the execution of such. When we place our learners in virtual worlds and we have a duty of care to have safeguarding measures in force. We also recognise that there are potential positive opportunities including: exploring identity; enabling experience of others (e.g. exploring in a wheel chair); liberating by removing the effects of physical disability; etc. “Virtual Worlds liberate us from our bodies, but not from each other” (Guest, 2007:152). We recognise, regardless of the education exploitation of virtual worlds, that all trainers of teachers must be able to offer information, advice and guidance regarding safe-guarding and e-safety.

### **The teaching scenario**

At three points in the one year teacher training programme, the trainees are required to enter Second Life, meet at the School of Education platform above the University of Southampton Island and take part in a number of activities that gradually introduce them to some of the potentials of the 3DiVW. The focus point for the activities is the “Staffroom” which is a platform above the School of Education. The Staffroom is a specifically designed space for trainee teachers to meet, experiment with building, communicate with each other through Instant Message (IM) and local text based chat and voice using VoIP, to explore a range of activities available to their avatar in a “safe” and supportive environment. Although the area is “public”, there is only a single convoluted route to the platform via the School of Education so strangers have never been encountered in the Staffroom. Visitors to the platform are monitored and unusual access or access by strangers during teaching periods would be noted. The Second Life URL (SLurl) is [http://slurl.com/secondlife/University of Southampton/22/26/806](http://slurl.com/secondlife/University%20of%20Southampton/22/26/806)

The traditional approach to teacher training in the UK is a program of University-based activity inducting, briefing and informing trainees of their roles and responsibilities in the classroom and providing a safe place to explore issues of policy, behaviour management, curriculum development and so on, integrated with in-school placements of observation, support and teaching in real classrooms with real pupils. The pervasive

and rapidly changing use of technology means that would-be ICT teachers need an increasing in-depth and wide-ranging exposure to the resources available. At this time, the virtual world is the point of challenge and opportunity. The challenge is to change our way of working and the means by which we enable trainees to develop their life-long skills for teaching and the opportunities are those of alternative and better ways of presenting the curriculum with an eye to the future and the continuing evolution of technologies.

The aims of the activity are three-fold. As part of the teacher training programme for would-be ICT teachers, widening the skills and experiences in technologies is important. Giving the trainees the opportunity to show their 'creative and constructively critical approach towards innovation, being prepared to adapt their practice where benefits and improvements are identified' (TDA, 2008) helps them meet the professional standards to be a teacher. Trainees are encouraged to be 'reflective practitioners'; the activity is an opportunity for them to develop those skills and attributes.



**Figure 1 Stradd Ling and the Staffroom, School of Education, University of Southampton**

The Staffroom is an elevated room. Underneath is a store of 'prims' which can be used to develop the skills of building educational resources in the virtual world. There are several bicycles that make exploration of the island more interesting and faster! There are landmarks for easy access to other selected parts of Second Life. In the Staffroom, there is a social area, with easy chairs and coffee table and there are a number of resources, in the form of downloadable pdf files that support the academic side of the programme. It is the place where trainees meet at the start of the activities before they set off for guided exploration of the world in a series of peregrination activities that continue throughout the three Online Days during the course.

### **The feedback process**

The trainee teachers are given a number of specific tasks to complete with the day. Each contributes to the aim of ensuring that trainees are fully comfortable working in online environments. In addition to meeting in Second Life and carrying out in-world tasks, the activities of the day include:

- make one-to-one contact with each and every other member of the group;
- participate in a synchronous chat session with several others;
- navigate around GIS systems such as Google Earth, Streetmap, Google Map, Locrating; Geocache (GPS);
- use internet search engines to discover new information and develop personal search strategies;
- collaborate with 2 or more others to develop a single online document;
- during the day (and certainly before 4.00 pm) make a brief report of the activities undertaken;
- write an evaluation of this teacher training activity;

The written report and evaluation is guided by a 'writing frame' (Figure 2).

During the online activities day I undertook... [Write no more than 300 words outlining the activities undertaken using the "objectives" above to guide the order and content.]

Then write...

The positive aspects of the day were... [Identify at least 3 activities that you have undertaken and the contribution that you feel they have made to your training as a ICT teacher.]

The activities that did not have a significant value were... [Identify activities that you have undertaken where you feel the contribution they have made to your training is limited; give your reasons.]

If there were activities that you did not do because there was not enough time during the day, please identify them.

The activities that were challenging because of software/hardware issues were... [Identify activities that were limited in value because of outside factors. Try to identify how the day could have been more efficient and effective through better planning and resourcing.]

My suggestions for next time are...

**Figure 2 The feedback writing frame**

Issues of anonymity and confidentiality are important. Being a reflective practitioner is valued highly in the process of becoming an effective teacher. The respondents are assured, 'Your comments will be treated confidentially by your tutors and mentors. They may be used to inform the feedback given to you. Occasionally, your comments, observations and statements will be used to inform our practice and the practice of colleagues elsewhere. In those cases the information will be fully anonymised.'

### **The analysis of data**

N=17.

100% response rate.

The responses are anonymised and analysis is independent of any trainee assessment process.

The results of this study are based upon the statements of engaged and motivated trainee teachers of ICT and computing. In addition, a number of formal and less formal comments by trainees has coloured the analysis process. This is inevitable when the

coding and analysis is so closely embedded with the support and guidance processes of the activity

The analysis of the data is by coding the text responses against 4 predetermined nodes of engagement of cognitive, emotional, dextrous and social domains with positive and negative responses being identified.

### **Some reflections of trainees**

The following quotations are the statements of individuals. They have been selected because they best represent the overall conclusions being drawn by the analysis. In addition comments have been inserted where appropriate by the trainers to address some of the points raised by the trainees and the overall reported experience is commented upon with a view to addressing a general perspective on the affordances and limitations presented by, specifically, Second Life and other alternative 3D immersive platforms (3Di) for teaching and learning.

Engagement seems to be a key feature of many trainees' experiences. The emotional engagement relates to the cognitive engagement we seek when devising learning experiences.

"It has a really WOW factor, with opportunities for gathering information that exceeds real life".

"The most striking exhibit I found to be the "hiding place", which oozed of claustrophobic dread. The authentic photo was poignant" (Holocaust Museum, 2010:in-world).

"I really enjoyed that environment (Studio 33, 2010:in-world). Some of the pieces were lovely. In the Art environment I was pleased to learn how to jump and move forward so that I could scale a wall. I was surprised when I found I could fly and walk through windows".

"The social and aesthetic quality of such a task would lend it to being an emotional experience. All of these learning threads should allow for improved learning and recall due to the multi faceted ways of encoding the learnt information through the rich experience".

The social elements of learning are well documented; social constructivism describes learning in terms of the engagement between individuals understanding arising from the communication process. The model of cybergogy has the social aspect as one of the four domains. If that communication is impeded then learning can be impeded. Trainees reflected upon the social aspects.

"It feels a bit strange walking around an environment where you don't actually know the social rules, and the social rules are definitely an area that needs to be defined in an online virtual environment when considering the mental and physical wellbeing of pupils". Knowing the social rules is important for effective social interaction. It is important that as we introduce learners to new environments that we are just not informing of rules – for example, the "six cardinal sins" of Linden's Second Life (Rymaszewski et al, 2008:13) (see Figure 3 below) but also the mores and netiquettes of life.

"Following the last session it only took a few minutes to get re-acquainted with the people, characters and 3D learning environment... I also enjoyed spending time with educated and experienced colleagues and seeing their views on the environment from a learning point of view, I hope to consider how this can be used in my teaching".

"Any time spare today was spent experimenting with the other opportunities that Second Life can offer. I spent some time joining distance learning groups where I had

discussions with the members about how they saw distance learning benefiting from interactive services such as Second Life”.

“There is great potential for communication. Focus on buying and selling adds an interest factor for students”.

Based on Second Life Community Standards  
<http://secondlife.com/corporate/cs.php>

Intolerance relates to actions that marginalize, belittle, or defame individuals or groups that inhibit the satisfying exchange of ideas and diminish the Second Life community as a whole.

Harassment relates to communicating or behaving in a manner that is offensively coarse, intimidating, threatening or causes annoyance to an individual.

Assault relates to shooting, pushing, or shoving another avatar but is defined by the recipient - assault prevents their enjoyment of Second Life.

Disclosure relates to privacy and the sharing of personal information, for example, sharing conversation logs without consent.

Adult Regions, Groups, and Listings – this ‘sin’ replaces an earlier sin of ‘indecent’ (Rymaszewski et al, 2008:13) and accommodates the fact that in adult areas objects, actions and information may be indecent.

Disturbing the peace relates to individuals’ ability to enjoy Second Life forbidding activity that impairs that enjoyment.

### **Figure 3 The Community Standards - the 'Big Six',**

“Second Life is popular with students – so this fact alone means that it should not be ignored as a potential platform for learning and communication, teachers should be informed of the opportunity it presents. In presenting a platform based on ‘virtual locations that appear physical’ , Second Life allows users to gather together around a theme of common interest, or to broadcast and share meeting places with other users. This model fits more closely to ‘ordinary’ human behaviour than any other social networking platform I am aware of where meetings are less fluid and perhaps less useful. The fluidity of making short acquaintances on Second Life, in a particular location, is helpful in solving problems or completing work on a short term basis; for example a unit of schoolwork”.

“My feeling about Second Life is that something of its nature will replace more traditional social networking sites eventually; because it is a more normal and familiar concept of social interaction. The future benefit in schools could be huge, with companies or academic experts making various resources (including interactive) available to schoolchildren. Teachers will need to remain aware of this platform, and similar emerging technologies. At this stage I would need more in depth study to conclude how useful it is at this present time; something I will plan to make time for”.

### **Reflections upon living in a virtual world**

Tom Boellstorff, in his book *Coming of Age in Second Life* debates the meaning of the ‘real’ and ‘not real’ existence. He notes that those in Second Life use terms such as ‘real life’, ‘first life’, ‘the physical world’ or the ‘real world’ (Boellstorff, 2008:20). He challenges the implication that being ‘in world’ is not real and does not have real implication, impacts and consequences for the user. The reflections of trainees in this study indicates that their experiences, regardless of the degree of immersion and emotional engagement, are embedded in real experience, just as much as attending a



lecture, going to a party or meeting someone on the street. However, the physicality of movement in the virtual world is distinct and different.

The dextrous domain of cybergogy (Scopes, 2009) focuses upon the fine-motor skills of moving the avatar, negotiating obstacles and pathways and using gestures and actions. It also includes the use of the interface, for example, using the camera to zoom out or disconnect from the first person perspective. The gross motor skills includes peregrination (travel to locations) and the confidence to explore and navigate through different environments including teleporting and flying. Trainees commented upon the challenges and engaging elements of both activities.

"I enjoyed becoming more comfortable with the environment, particularly the camera movements, as that makes the whole experience so much smoother and more useable and therefore more likely to make me want to use the environment, potentially for teaching".

"At the appointed time we met up with Light Sequent and Stradd Ling. I joined in the poster creating competition. I followed the instructions and attempted all the activities. Earlier in the day I had manipulated a box into a ball and attached a photo as texture".

"The day was fantastic and the dexterity course was brilliant for those who are currently getting to grips with the application."

"Learning to walk up spiral staircases and ramps was challenging and I even felt like I was suffering from vertigo at the top but after falling (but remaining unharmed) I mastered manoeuvres and really enjoyed flying. Riding a bicycle provided a quicker means of getting around than walking."

"I learned to create and manipulate "prims" or objects. Starting with a box, a group of us were instructed how to edit most of the features of the box ending up with a large "canvas" upon which we applied textures. We were told that we could apply our own images but this required parting with Linden Dollars, the virtual currency of Second Life. At that time, I had empty pockets and made do with the library of free textures. I understood how one could create anything and everything from these initial building blocks. I thought how I might replicate my classroom (when I have one!) and replicate wall displays." Attempts at replication of physical spaces in the 3DiVW is not encouraged by the Trainers. It is hoped that the notion to do so will fade after the trainees experiences mature through witnessing examples of the many alternatives to the mundane that have already been created.

Reporting on research at Ohio University, Kapp and O'Driscoll (2010) observed that there is a difference when students recalled and retold previous embarrassing moments. Those that were asked to do so in the third person, taking a view point from outside themselves, were able to "reflect on the meaning of their miscues and then actually grow and change psychologically" (Kapp and O'Driscoll, 2010:93) whilst those students reporting in the first person did not reflect a similar change. Kapp and O'Driscoll's thesis is that by developing an avatar and being placed in a position of third-person perspective, the learner can develop psychologically differently and in better ways. They conclude that the avatar persona is a large part of the learning experience and process and needs to be understood as part of our comprehension of the values and affordances of virtual worlds.

### **Reflections on social justice and inclusion**

"Pedagogies make a difference" argues Bob Lingard and Martin Mills in the introduction to the International Journal of Inclusive Education (2007). They identify that issues of social justice and inclusion can be addressed by the pedagogies in place. Many references they cite relate to the social nature of teaching (such as Anderson,

Delpit, Townsend), the inspiring nature of the contexts (including Munns, Noddings) and the independence of the learner (including Bourdieu, Hayes et al, Lingard et al). Cybergogy has the potential to inspire, liberate and socialise the learning processes. It can underpin pedagogies that are inclusive and socially just by providing learner control, equality of presence, independence of action and opportunities to explore and experiment.

The observations of trainee teachers on their early ventures into the virtual world reflect both the affordances of the environment and the positive attitudes of future teachers.

“Any time spare today was spent experimenting with the other opportunities that Second Life can offer. I spent some time joining distance learning groups where I had discussions with the members about how they saw distance learning benefiting from interactive services such as Second Life.”

“In conclusion I would be grateful to learn of any further training that I can undergo on this subject as I feel it is an exceptional way to reach learners. I thoroughly enjoyed today and spent time with a member of the Southampton group who has just completed a Masters qualification in learning online and held a lengthy discussion whereby I used the Second Life software to view the dissertation. I would encourage that the two days I have spent on this program are fantastic but that I have even now only just scratched the surface of this type of learning.”

Elements of social justice relate to “staying safe” and the general area of e-safety. When working with young people and children teachers must not take risks. When working in environments that host a range of vicarious activities, teachers can not be satisfied that learners can learn through “trial and error” as those errors may have profound emotional and physical outcomes. Teachers are expected to “establish a clear framework for classroom discipline to manage learners” behaviour constructively and promote their self-control and independence” (TDA, 2008:10). A keyword in that requirement is “independence”. Rules, guidance and advice cannot be created for every situation. Importantly, the teacher can not be there for the learner in their future lives. The education process must equip the learner for the current and future experience. Another aspect of real-world teacher behaviour that affects learning is the teacher’s attire – the way they dress and appear. The Byron Review in the UK identified an important element of education with regard to e-safety as developing children’s endurance and resolution in the face of inappropriate and potentially damaging materials and contacts that the internet can present. The report of the review states, “we must also build children’s resilience to the material to which they may be exposed so that they have the confidence and skills to navigate these new media waters more safely” (Byron, 2008:8). Resilience is key to safe online learning. Preparing the teachers and tutors who will be taking their pupils and students into virtual worlds needs support through agencies such as CEOP (2010) and the government education departments (DoE, 2010).

When “considering the mental and physical wellbeing” teachers should not make the learning environment stressful or frustrating. One trainee reported, “The major issue was finding the PGCE IT Staffroom and as a result, the other problem with exploring environments – it is easy to waste time!” Another said, “The positive aspects of the day were using new software such as Second Life, which has been extremely time consuming, but has shown me that working collaboratively, I was able to grasp the basics and get on with the product. I can see that introducing a new piece of software in a classroom would need to be done in stages, with guideline and help rather than making it a self taught class. So pupils, like me, would get frustrated with the seemingly unhelpful screen in front of them”. Hart and Staveland (1988) defined frustration as the participant’s experience of feeling insecure, stressed, discouraged, and annoyed versus feeling secure, gratified, content, and relaxed while engaged in a



task. Frustration is not associated with a good learning environment. As noted by Kristen Moore and Ehren Pflugfelder, there is a need for pedagogical and technological scaffolding in preparation for taking students into online environments if they are to function as ‘fun and creative spaces’ (Moore and Pflugfelder, 2010).

A trainee reflected “For some reason I could not teleport and after much help from Light Sequent and John I still could not follow the others. I recall a moment when Light Sequent said to me “Don’t worry I wouldn’t leave you alone”, which made me giggle. How silly I thought “its only Second Life”. Eventually Light Sequent did have to leave me alone due to her commitments to the group, and I can honestly say for a spilt second I actually did feel abandoned. Then after 10 minutes of waiting for teleportation I felt a little lonely. Feeling these emotions made me realize the full potential of building and maintaining relationships in Second Life. I felt the same frustration and disappointment about not being able to join the rest of the trainees as I would have if I had been locked out of or stopped from entering a room during a training session at University”. Lonely is a feeling that is not associated with wellbeing and again not conducive to good learning.

The challenges associated with using virtual worlds are not insignificant. Mark Meadows noted that children online are less risk-averse in their dealings with others. “Over 75 percent of Internet users feel safer speaking their mind when they use an avatar” (Meadows, 2008: 36). They feel safer and speak more readily with those that they do not know in the physical sense but only know in the virtual world. “The lack of contextual clues frees up social inhibition but also loosens commitment and trust” (Shortis, 2001:97). They more readily confide secrets and more readily expose themselves in both a physical way (Jenny’s Story, 2005) and in a verbal way.

### **Reflections upon interactivity and engagement**

Edgar Dale proposed a hierarchy of engagement in the learning process from the least engaging, reading about something, to the most engaging, actually carrying out the task by doing the real thing. It is interesting to consider where on that scale the 3dimmersive experience lies. When a learner is surprised, shocked or inspired, experiencing reactions based essentially in the emotional learning domain, they are more likely to remember the topic and context.

reading
hearing words
looking at pictures
watching a moving image
looking at an exhibit of the artefact
watching a demonstration of the activity
seeing the activity being carried out on location
seeing and discussing the activity with other learners
preparing and giving a spoken presentation about the activity
preparing and then carrying out a dramatic representation of the activity
preparing, rehearsing and then simulating the real experience of the activity
doing the real thing

**Figure 4 Hierarchy of engagement, based on Dale (1969) and Woollard (2011)**

When software-driven tasks are designed to present information in a predetermined, pre-structured and didactic way, they lead to efficient knowledge transfer. When those tasks enable learners' achievements to be presented and assessed then they lead to effective learning through feedback. When those tasks are drill and practice, they heighten response and accuracy and lead to more skilled learners. When the tasks enable collaboration and communication they lead to socially constructed learning that is both engaged, effective and safe. When the learner reflects that the experience is strange, different, novel, new or even perverse or wrong, then they are engaging emotionally with the activity. It is that emotional engagement that can drive the cognitive engagement – the preparedness to learn, the motivation to learn and the context for learning.

All teachers have a responsibility to provide a safe environment for learning. They have a duty of care. In the UK this is reflected in the requirement placed upon trainee teachers to "establish a purposeful and safe learning environment conducive to learning" (TDA, 2008:10). For it to be a safe environment the learners need to know how to behave; they need to know the social rules.

Many adult users of virtual worlds do so with confidence and competence gained through experience. Some adults gain that confidence and competence quickly whilst for others it takes time and they learn through "trial and error". There is a need to understand what makes some adults more able to deal with new learning environment more quickly than other adults. This is called varyingly: e-literacy (digital knowledge, internet safety and security, netiquette), computeracy (computer literacy, using rather than programming a computer) or ICT capability (choosing the right application for the task in hand and being able to apply current skills, knowledge and understanding to new or more complex situations). It is a necessary element of all training programs to ensure that the basic skills are established and enhanced. Consequently, it is necessary to set the prerequisites in terms of skills and knowledge for working in virtual world learning environments and ensure the learners are prepared.

Mark Meadows describes the avatar as a tool for regulating intimacy because intimacy and interaction with others is more easily controlled. In real life it can be difficult to remove oneself physically from uncomfortable positions but in the virtual world "isolation" or "home" is always just a mouse click or key press away. But, as Mark Meadows explains, "in a world where information is more important than physical proximity, we are not as safe as we might assume... I have seen some extreme tragedies unfold because of the assumption of the mask... because we can immerse ourselves more and more into these environments we let our guards down" (Meadows, 2008: 36).

## **Summary**

"It feels a bit strange walking around an environment where you don't actually know the social rules, and the social rules are definitely an area that needs to be defined in an online virtual environment when considering the mental and physical wellbeing of pupils".

The words of a newbie trainee teacher echoed great pertinence with regard to the actions we need to take to ensure learning in virtual worlds is to be a rewarding, effective, efficient and, importantly, safe experience. We conclude:

- Not knowing the social rules and mores makes the learner vulnerable. They can become victims of social predators, commercial exploiters and the purveyors of inappropriate or untruthful material. This is against the principles of an inclusive and socially just educational policy and the challenges must be addressed.
- The popularity of online gaming, the demonstrable value of interactive programs for teaching and training and the growing potential for teachers to design and build

their own 3Di environments, makes an imperative that teacher training includes experience of virtual worlds such as Second Life™ in their teaching.

- An online day where trainees work on their computers, in their work or home environment, offers many opportunities for them to be independent and personalise their own learning and start to vision education of the future where their learners see them as avatars and they see their pupils as avatars.
- The structure and resourcing of online experiences must be considered so that learners do not feel isolated or unsupported.

In our work in teacher training we have seen trainees growing in confidence in their use of virtual worlds. Subsequent visits have elicited an increase in positive impressions as the students began to feel less estranged in the virtual environment. They are becoming accustomed to the concept of the metaverse - the term coined in *Snow Crash* by Neil Stephenson (1992) describing the network of 3D virtual worlds that is expanded when new 3D worlds are added.

Teaching and learning in virtual worlds provides trainers with the opportunity to meet another UK Government requirement that teachers should “identify opportunities for learners to learn in out of school contexts” (TDA, 2008:10) – in-world is out-of-school. Teaching and learning in virtual worlds has affordances of: stimulation, engagement, motivation, interest, context and contemporaneity. Teaching and learning in virtual worlds has the challenges of: understanding a new pedagogy (cybergogy), building environments that stimulate, structure and facilitate learning; and protection of our learners from inappropriate content and contact and ensuring they conduct themselves appropriately. Through that guidance and support we suggest that a virtual world can provide an inclusive and socially just environment for learners to socialise, explore, become immersed and learn.

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