AN EXPLORATION OF HIGHER EDUCATION TEACHING IN A VIRTUAL WORLD IN THE CONTEXT OF BLENDED LEARNING

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List of Abbreviations

AR	Augmented Reality
CMC	Computer Mediated Communication
HE	Higher Education
ICTs	Information Communication Technologies
ISTE	The International Society for Technology in Education
IBL	Inquiry Based Learning
IL	Information Literacy
LCD	Liquid Crystal Display
LIS	Library and Information Science
LMSes	Learning Management Systems
LSL	Linden Scripting Language
MMORPGs	Massively Multiplayer Online Role-Playing Games
MOODLE	Modular Object- Oriented Dynamic Learning Environment
MUVEs	Multi User Virtual Environments
PBL	Problem Based Learning
RQs	Research Questions
SLED	Second Life Educators Mail List
SL	Second Life
SLOODLE	Simulation Linked Object Oriented Dynamic Learning Environment
ToS	Term of Service
VCoPs	Virtual Communities of Practices
VLEs	Virtual Learning Environments
VR	Virtual Reality
VWs	Virtual Worlds
VWER	Virtual Worlds Education Roundtable

ABSTRACT

AN EXPLORATION OF HIGHER EDUCATION TEACHING IN A VIRTUAL WORLD IN THE CONTEXT OF BLENDED LEARNING

Ridvan Ata

This research explores teaching experiences of educators within the virtual world of Second Life and pedagogical practices adopted. A Case Study with an ethnographic perspective is employed. A blended approach is applied by using physical classrooms, Blackboard™, web-based resources, and the virtual world of Second Life in an Information Literacy class for 1st year undergraduate students at an institution in the UK. In reflecting on and evaluating the teaching experiences, evidence is drawn from observations, semi structured interviews, chatlogs, snapshots, and field notes. A thematic approach is used to analyse the data. The findings from the data analysis are presented in terms of seven themes: cybergogy, creativity, trial and error, wow moment, uncertainty, experiential learning, and dynamic relationship. The overall conclusion is followed by recommendations derived from the research, and the implications of the study for potential immersive teaching experiences are discussed.

CHAPTER ONE: FOCUS OF THE STUDY

1.1 Introduction

This opening chapter introduces the debate on teaching within VWs in HE. This chapter is divided into two parts. The first part presents a brief outline of the topic, an overview of the characteristics of current VWs, and some demographic data on the usage of them. A detailed discussion of aims and objectives is given, together with a list of RQs. This is followed by a *Definition of Terms* for the purpose of this study. In the second part, the chapter introduces the concept of virtual identity, and community, as well as the economy and topography of the study within SL. This chapter finally introduces the structure of the thesis.

1.2 Background

Over the last decades, HE has seen significant changes with the penetration of the Internet and ubiquitous technologies in individuals' lives (Bates 2011). There is little doubt that the Internet has considerably influenced the ways in which individuals across the world communicate, share ideas, interact with each other, and express themselves. Along with this remarkable spread, ICTs have played an important role not only in designing, developing and delivering educational courses but also in enhancing and enriching the quality of teaching and learning experiences (Oliver 2002). Therefore, numerous educational institutions, mostly in developed and industrialised countries, have adopted the use of ICTs so as to enhance the quality of teaching and learning processes. As a consequence of rapid developments in ICTs, VWs have become the focus of interest and have brought new opportunities for educators. The following paragraphs explain how VWs emerged, and give some information about one of the VWs, known as that is Second Life.

First of all, it would be of value to elaborate what the notion of "virtual" refers to. The Oxford English Dictionary (OED 2010) explains the meaning of "virtual", referring to something "that is so in essence or effect, although not formally or actually". Therefore, the concept of "virtual" can be understood, by implication, as being there without being physically there, within ICTs. (Slator et al. 2006, p.105-108) assert that

computer-generated VWs have existed since the 1970s in different forms and the first educational applications were seen in the late 1980s. Messinger et al. (2009, p.205) emphasise that online gaming and social networking have led to the emergence of current VW applications. They believe that rapid evolvement of user-controlled avatars, multi-user interaction, 3D animation and Massively Multiplayer Online Role-Playing Games (MMORPGs) were the stimulus for the socio-technical innovations that are VWs. MMORPG examples include World of Warcraft, Everquest and The Sims. Such platforms appear to have aesthetically influenced the design of VWs. According to Schroeder (1997), the concept of VR, which represents real time simulation and interactions to generate similar looking worlds, was encountered in the early 1980s. Salmon (2009, p.526) states that current Internet-accessed 3D VWs emerged in the first decade of the 21st century. Second Life, Active Worlds, OpenSim, Unity, and Club Penguin can be identified as currently thriving applications of VWs. Yet, SL is designated as the most advanced application - perhaps the most significant one; the rationale of introducing SL in this way is explained in Section 1.3 of this chapter- of VWs in the study of Salt et al. (2008, p.5).

VWs are often called Multi User Virtual Environments (MUVEs) or sometimes *"metaverse"*, a popular synonym for a virtual world, in reference to the characteristic of the real world within VWs (Metaverse Roadmap 2010). In a broad context, these are the terms that are currently used to describe a three dimensional (3D) graphical space where users can interact with each other simultaneously via the Internet. In other words, VWs are online spaces in which users can interact with others as "being there" for socialising (Steinkuehler & Williams 2006). There are various views on the definition of VWs and the term is used in different ways by academics, but the key characteristic features of a virtual world are given by Bell (2008, p.2) as "a synchronous, persistent network of people, represented as avatars, facilitated by networked computers". This implies that VWs are based on real time communication, persistence with or without a user's presence, interactions of users, digital representations of users and through networked computers. Sivan (2008, pp.7–8) looks at VWs from a slightly different perspective and says integration of 3D, community, creation and commerce comprise a "real virtual world". That is, integration of a spatial platform, community, creations of objects, tools and virtual commerce that ultimately become real is the fundamental feature of the "real" virtual

world. This appears to be the common consensus on the definition of VWs. So far, I have briefly explained the beginning of VWs. More specifically, the Metaverse Roadmap framework (Metaverse Roadmap 2013) presents an essential diagram as shown in Figure 1 below to explain how VWs differ from current digitised forms of technological application.

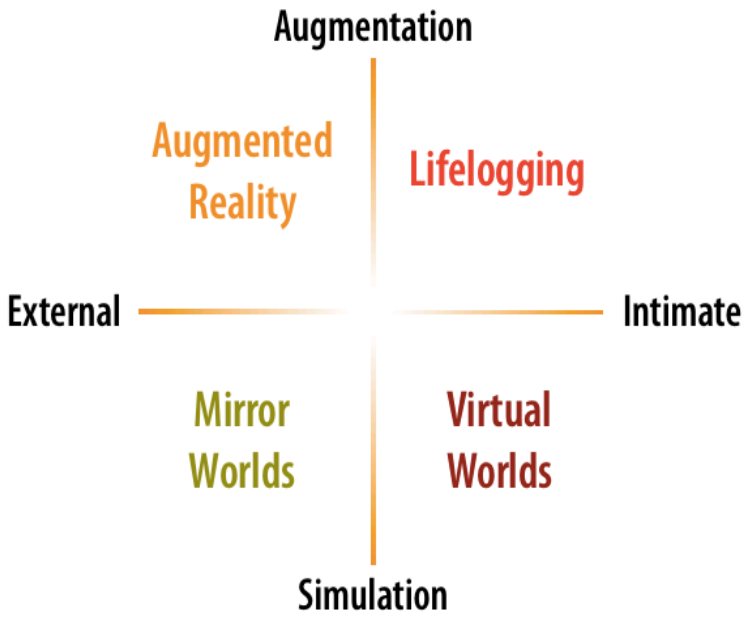


Figure 1: A Diagram for the Spectrum of Technologies and Applications

It is beyond the scope of this study to elaborate each concept presented in the diagram but this diagram clarifies key trends and the place of VWs within the spectrum of technologies. The diagram shows VWs are "Intimate Simulations", which means individuals experience a virtual world usually on their own in a private setting such as via a laptop or desktop and what they experience is a Simulated, i.e. created, environment. In this category, there is a meaningful distinction between VW-based multiplayer games such as World of Warcraft and VW-based social environments such as SL or Minecraft. VW-based multiplayer games have an entertaining nature and while they can have a social aspect, they are goal-oriented, which require players to carry out tasks or achieve pre-determined goals. Social VWs, by contrast, offer more flexibility; individuals can become engaged in the creation of environments and objects; in economic and social interactions; in a range of interpersonal networks. They may or may not have set tasks or activities; the choice is up to users. A key component is the user's embodiment within social VWs, allowing the individual to experience identity, self-discovery and role-play. Such environments are created by

individuals for their personal use and enjoyment. Similar to VWs, mirror worlds are simulated environments, yet they are Externals, meaning they reflect or model the physical world and are based on real-world places. Mirror worlds, for instance, can involve virtual mapping, or modelling and may promote tourism, for example, Geographic information systems (GIS) and global positioning system (GPS) are large classes of mirror worlds. Google Earth/Maps, which is a free, web-based digital map of Earth, is a well-known example of this category. Another good example is the website of Foursquare, which uses GPS technology on cell phones to allow individuals to see what is near them, which places their friends have been to, and so on. By and large, such environments capture, store and deliver compelling visual information, which might be either missing from, or very poor in other media formats. Mirror worlds can be very useful for navigation, education, commerce, marketing or understanding climate and geopolitics. They may hold great promise for making location tagging and spatial positioning interesting and productive. On the other hand, augmented reality refers to something away from the "desktop", rather than being a simulated environment, and the experience is added to or augmented into the user's field of view. Such systems depend on networked computational mechanisms embedded in physical objects; spaces and users access virtual information overlaid on the physical world. One type of interface is known as a heads-up display (HUD), providing information through cell phone screens or wearable screens. Lifelogging briefly provides the ability to record what the user sees, says, hears, and does and personalises the data, by capturing what is observed by the person wearing the device. In Lifelogging, augmented technologies capture, record and distribute everyday experiences and information of objects and users, as a way of providing useful information. Such systems allow users to retrieve what they see and hear for later checking. Unlike VWs, lifelogging enables users to document and keep track of their life experiences online. Fitness trackers, or more specifically Justin.tv, can be a good example of lifelogging services.

Kzero, which is a worldwide consulting company, provides de facto analytic reports for the sectors of VWs since 2006. According to Kzero (Kzero 2012; 2013), there are nearly 900 VWs, the majority of which have emerged since the beginning of 2009. The growth in the sector of VWs is shown in Figure 2 below.

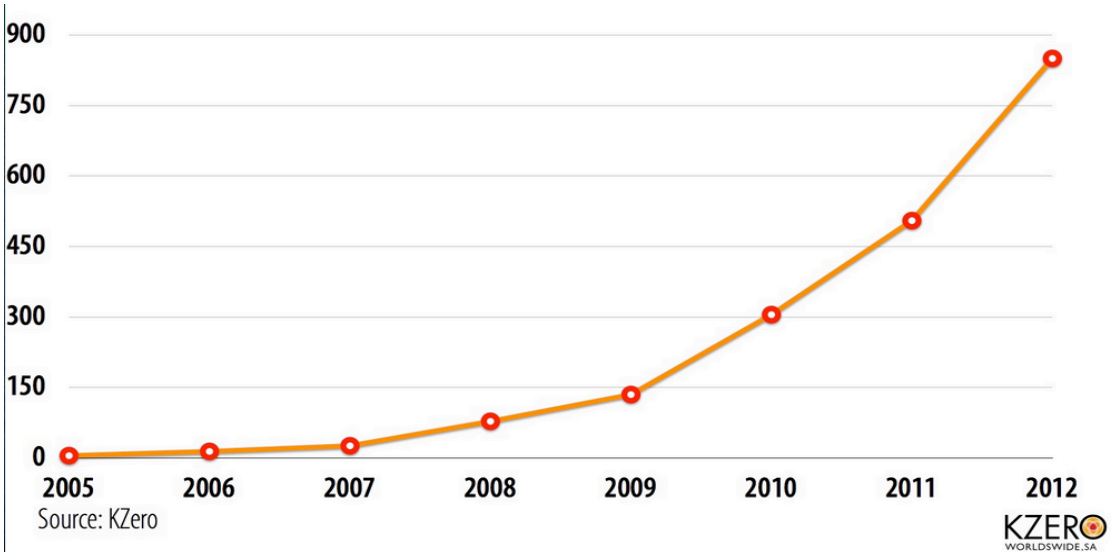


Figure 2: Number of VWs, Kzero 2012

As consistent with the growth of this sector, there is a wide spread in the number of users who engage with VWs. This is demonstrated in the next chart, Figure 3.

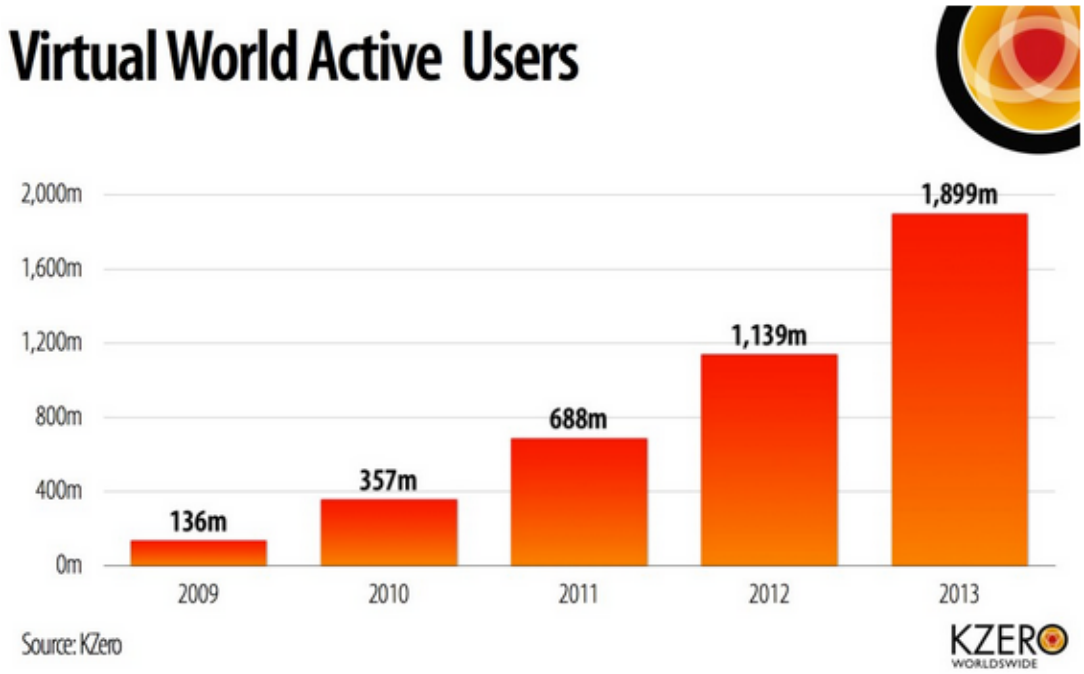


Figure 3: VWs Active Users Chart, Kzero 2013

The chart indicates that there has been a dramatic increase in the number of active users in the VWs between 2009 and 2013. By the end of 2013, the number of total registered accounts was expected to reach nearly 2 billion. This indicates that there is a continuation of major increasing awareness towards VWs. The next chart shows the Kzero's forecast by age band.

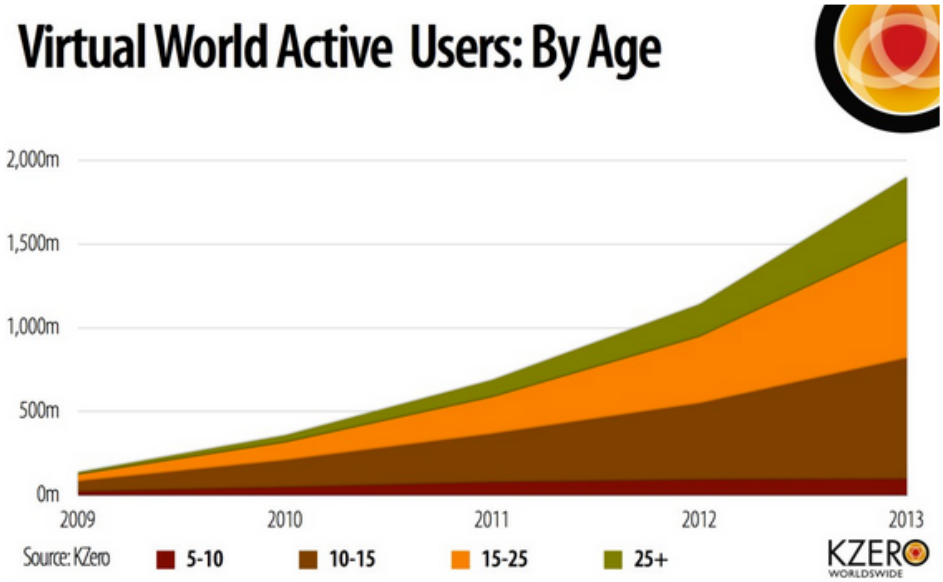


Figure 4: VWs Active Users by Age, Kzero 2013

The chart indicates that the age of users is most prevalent between 10-15 and 15-25. This is the largest growth area across all the age ranges. Approximately 75% of all users are in this age range. This is the group that is expected to drive the sector and push the overall economy in marketing. It is expected that genres such as gaming, learning and education will become key genres to watch within this age segment. Further, expansion of the 25+ year old group is interesting. A rapid increase in the sector, in the number of users and age segments create great interest and major attention towards VWs and education.

1.3 Second Life

SL was chosen for this research due to its accessibility and the pre-existing virtual locations created by other SL users. Thus, it is important to highlight what is so unique about SL. It was publicly released by Linden Lab, which was founded by former CEO Philip Rosedale inspired by Snow Crash (a novel by Neal Stephenson) in San Francisco in 2003. Users are free to download the platform but with a good computer graphics card and a reliable high speed bandwidth Internet connection.

SL is inhabited by millions of users all over the world. SL is described in its website as: “a place to connect people, a place to shop, a place to work, a place to love, a

place to explore, a place to be different, to be yourself" (Second Life Web Site, 2010). People are using SL to communicate, to establish businesses, to sell goods or services and buy virtual property, to organise events, for live performance, for movie making, even for charity. The main reasons for using SL are reported to be: exploring the environment, sharing experiences with others, meeting people and making friends around the world, and engaging in commercial activities (Graves 2008). The prominent characteristic features of SL are: it is a user-generated environment, residents can develop shared content collaboratively upon common interest, and it has economic transaction possibilities built in, for marketing based on Linden Dollars that leads to real world income (see further detail about economics in SL in Section 1.9). In addition, encouragement for interactivity, connectivity of the system, easy access to various materials, and different resources are main factors for engagement in SL. The above information implies that the primary aim of SL is to offer an environment in which users can interact with each other. However, SL also hosts many educational events, including classes, academic conferences, seminars, demonstrations and exhibitions. A great number of educational institutions such as universities, colleges and libraries, from around the world, have a presence as virtual learning and teaching platforms.

Linden Lab (2010) announced that about 800 educational institutions, including Harvard, Oxford and Imperial College, of which 60 are among the best 100 universities, and top companies such as IBM and the US Air Force were actively using SL. SL Wiki offers a directory of 153 universities (Second Life Wiki 2013). The study of Kirriemuir (2009) indicated that there was only one HE Institution that did not have a presence at any point in the virtual world. The number of registered users of SL has grown rapidly over the last few years, and great numbers of educational institutions have become involved with it. Floyd & Frank (2012) state that 5% of all regions in SL is covered by educational institutions' accounts and over 800 educational institutions maintain a full region in SL. Warburton (2009) and Mayrath et al. (2010) highlight that SL is by far the most widely adopted VW by academic institutions. Kirriemuir (2009, p.2) indicates that SL still remains the preferred VW for academia, particularly in the UK.

There are over 37.5 million users, and nearly 60,000 residents are online at any given time, as of March 2014, in SL (Second Life Grid Survey 2014). Yee (2006, p.18) reports that avatars spend on average 22.72 hours (N=5471, SD=14.98) each week in a virtual world. The lower quartile and upper quartile boundaries are 11 and 30 respectively. The distribution reveals that about 8% of users spend 40 hours per week or more in these environments. More specifically, Bowers et al. (2009) indicate that using SL as an educational environment in HE is split fairly evenly by gender (N: 162), with the majority of respondents being from USA, UK and Australia. The average age is 45 years with a range from 24 to 71. The median time spent by educators in SL in a week is five hours, ranging from zero to 80 hours in their study. Three main areas of discipline are identified as using SL for educational purposes, which are Education, Journalism/Media/Communications, and Computer Sciences. In 2014, over 3,400 unique avatars from around the world attended the four-day conference, VWBPE14 (VWBPE14 2014). There are over 6,000 educators on the SLED email list to discuss education, teaching and learning in VWs (Second Life Blogs 2013).

Given that a great numbers of institutions, companies, and individuals embrace SL, it is the virtual environment in which most educational events are happening. The decision to undertake this scoping study is therefore in part motivated by the level of interest in SL within the HE settings in the UK at the time of commencing the study. In sum, SL was selected for this study because of its popularity, relative longevity, and its potential for use in education.

1.4 Motivation, Aim and Objectives

As stressed earlier, numerous departments from different disciplines have used SL as a teaching and learning environment. However, despite growing interest in such environments for HE, only 1% of academicians in UK institutions are actively using SL (Kirriemuir 2009) This indicates that very small numbers of educators in each institution actively use VWs for teaching or research. More importantly, Bowers et al. (2009, p.728) argue that the use of SL as an educational environment is still in the early stages of the diffusion process, as personal motivation and desire factors tend to be stronger influences for educators. This is echoed by Kuksa & Childs (2014, p.102),

who state that the implementation of VWs in teaching is often due to the personal interest of an educator rather than being part of an institutional strategy. It is difficult to prove conclusively whether VWs should be taken seriously as a valid educational environment (Scopes 2009, p.5). At this stage, it has not been conclusively demonstrated that a VW environment such as SL has a considerable impact on the teaching and learning process (Herold 2010, p.792). Herold further argues that what seems missing is how SL is supposed to be integrated into classroom teaching within HE settings (ibid). Therefore, it can be argued that the links between pedagogy and practices in VWs need deeper scrutiny and consideration. Additionally, quite understandably, I believe that there have been attempts to focus on learner perceptions, experiences and outcomes rather than looking specifically at educator perspectives. Hence, the educational value of VWs for educators, and virtual world teaching is open to question. I would like to speculate as to whether experiences in SL might have an effect on the teaching process along with facilitating new abilities, identities and experiences.

1.5 Research Questions

To guide my research, this review leads to the following questions:

RQ1. How do educators teach in SL/f2f contexts?

It is anticipated that this study highlights the availability of SL for teaching and proposes innovative ways of practicing teaching. In particular, the study attempts to capture and reflect on whether educators perceive significant pedagogical advantages in using SL. The assumption is that educators' beliefs ultimately influence the teaching and learning potential for VWs. RQ1 is the leading question that directs other RQs, as this question helps me explore SL in terms of education.

RQ2. Does teaching in SL give educators any insights to improve their f2f pedagogy?

I will explore the intersections between classroom and SL pedagogies and how educators' classroom teaching is influenced by immersive experiences. I will identify whether teaching in SL gives educators insights which enhance their classroom pedagogies.

RQ3. How do educators learn how to approach teaching in SL?

Early exposure to SL is the third area of interest that I will discuss relating to teaching in VWs. It is anticipated that how educators become involved in SL helps to explain their most valuable learning from it. This is essential to indicate educators' motivation to sustain the use of VWs.

RQ4. How do educators overcome challenges such as learners' anxiety towards VWs?

My last area of interest is to identify strategies that educators implement when they have to deal with challenges, such as students' potential anxiety towards VWs.

This study aims to contribute further to the body of knowledge in the area of VWs in teaching, in the context of HE. The results of this study can be used by policy makers and institutions, and by educators in tertiary institutions to conceptualise their teaching by integrating SL. While this study attempts to raise awareness of educators in tertiary institutions about potential educational usage of VWs, social norms, psychological issues and social influence in SL that are addressed deeply by Krotoski (2009) will not be covered as this study does not attempt to reveal the relationship between social networks and behavioural changes. Furthermore, the study does not attempt to measure what impact educators' self-efficacy in the use of technology may have on their teaching practice within SL. Similarly, the effects of avatars' appearance on user social behaviour in VWs, appearance differences in social communication preferences, and behaviour in virtual public spaces are beyond the scope of this study.

The next section presents a definition of key terms and concepts used frequently to describe experiences within VWs. This is particularly significant when the experiences being investigated are still largely unfamiliar to some readers. Before delving any further, the following definitions explain how they should be understood in this study.

1.6 Definition of Terms

A number of terms are used in this study, based on usage in the literature and my own experience of usage in SL. I interpret them in a way specific to this study and to SL.

Alt: This term stands for "ALTernate Account", and refers to the practice of having more than one SL account, which allows an individual to have more than one presence in SL. That is, an alt usually refers to one person with multiple accounts. Alts are created for numerous reasons. Users sometimes refer to their "alts" for role-playing, or privacy.

Avatar: A user's visual representation in SL through a 3D customised appearance.

Augmented Reality (AU): A way of viewing the real and virtual environment simultaneously that is simply enhanced by means of computer graphics, but otherwise is completely real.

Chat: Participation in a synchronous exchange of remarks with one or more users in SL.

Drag/Drop: The action of selecting an item in SL and placing it in a specific position.

Head up Display (HUD): A display that is attached to an avatar to function in a specific way.

Embodiment: A robust relationship between the self and the digital representation of self in the form of an avatar. So, the term refers to the sense that one's self has a reality within the environment.

Face-to-face (f2f): The traditional classroom environment.

Freebie: An item/object made available free of charge or L$1.

Grid: The VW of SL is made up of a grid of servers that run sims. SL itself is often referred to as "the grid".

Immersion: In a general sense**,** the term is associated with 3D environment and refers to the experience of being involved in an activity to the degree that mental and emotional aspects may be involved, leading to a perception of presence in that experience. It is the fundamental experience that underlines all the interactions within VWs. It is often referred to interchangeably as "presence" but, in this study, immersion is considered for the degree to which the sense of being submerged during the experience of a VW.

Instant Message (IM): The text chat window that allows two users to have a private conversation with each other.

Inventory: The repository for all items/objects owned by a user. It is a list of items that users have full access to use and store in SL. Items/objects are placed in folders based on their types.

In-world: This refers to the presence of an individual in SL.

Island: The term most often refers to a simulator, or a group of simulators that can be accessed through teleportation.

Lag: The term generally refers to a slow reaction time or delay in something. There are a variety of causes for lag, such as slow Internet connection and computer graphics hardware.

Log: A transcript of chat.

Machinima: The process of making real-time animated films by utilising VWs, such as SL.

Newbie: The term is used to describe someone who is new to an experience or an environment. So it refers to a newcomer to SL who is relatively inexperienced and not familiar with the interface or space and the culture of it. They can usually be identified by the default clothes and features of their avatars, and birthday in SL.

Presence: The term is variously defined in the literature, but it is used to refer to the experience of "being there" in this study.

Primitive/Prim: Prim is a single-part object, multi-part objects are known as prims. Objects are made out of one or more prims, usually created in SL.

Resident: A user in SL is typically called a Resident.

Rezzing: The term is used in SL to describe the process of creating a new object. Rezzing an object/prim can be done by dragging it from a user's inventory or by creating a new object via the edit window. So the term means 'to create or make an object appear in SL'. Rezzing is also used to refer to waiting for a texture or object to load in SL.

Real Life: The term is used to refer to the real physical world.

Second Life Time (SLT): Time in SL, which is also known as Second Life Time Zone (SLT), is actually equivalent to Pacific Daylight Time, as Linden Lab, owners of SL, is headquartered in San Francisco in USA. This indicates that there is a time issue in SL. The ability to meet anyone from any real life location across the world means that timing is critical. There are hundreds of time converters available on the Internet. Specifically, for example http://gemixin.co.uk/slconverter/slconvert.php

website provides an application to convert UK time (GMT) to and from the corresponding time in SL.

Sim: This is short for "simulation". The term refers to any given simulated environment within SL. A Sim generally means a whole region or island. Less than a Sim is usually referred to as "land", typically with a specific size associated with it.

Simulator: The term is commonly interchanged with the term of Region. Each simulator runs a 256m x 256m (65,546 sqm) area in SL.

SLurl: A unique form of link address to teleport to SL locations.

Snapshot: A screenshot of the current view in SL.

Teleportation: This refers to moving an avatar quickly to the selected location in SL.

Three-dimensional (3D): Items/objects that are built in three planes (X, Y, and Z). Three-dimensional objects have the additional depth signs associated with the Z plane.

Viewer: Client software that connects to SL. There are a number of different free client programmes that Residents can use to connect to SL, such as Firestorm, Singularity, or Imprudence.

Virtual Learning Environment: A learning platform that provides teaching and learning tools designed to enhance students' online learning experiences.

Virtual Reality (VR): A computer-generated simulation of a real or imaginary structure that enables individuals to perform in virtual spaces.

The remainder of the chapter introduces the concepts of identity and community, as well as economy and topography of the study within SL.

1.7 Virtual Identity

One component of the conceptual framework that influences the experience of VWs is that of identity. Identity here is used in the sense of an individual's conceptualisation of self, the ways in which subjectively people perceive or experience themselves as individuals (Childs 2011, p.14). The concept of identity in a digital medium such as ICTs is called "virtual identity" (Sorrentino 2009, p.826). Individuals in VWs adopt an avatar to interact with each other and with the space around them. Avatars are the virtual characters of individuals within different forms of being, such as humanoid, non-humanoid or robotic. Markham explains that the computer-mediated construction

of identity has roots in the production of discourse in online environments, in the form of words, graphic images or sounds (Denzin & Lincoln 2005, p.794) It can be inferred from Markham's suggestions that construction of the self online depends on a constant interactive process of negotiation, and similar ideas in shared meaning with others as a way of being.

Despite that fact that individuals construct their online identity within the norms of the online environment, the formation of self in VWs is slightly different from Markham's explanation. This is because VWs, for example SL, afford very different opportunities and mechanisms for the presentation of self from those provided by a text-based online environment. It is the strength of the presentations in VWs, with the liveliness and effectiveness of these virtual characters that dazzle individuals as a mode of being. Human behaviours inside VWs are somehow the equivalent of human beings, as avatars walk, talk, smile, sit, learn and so forth. Therefore, it can be said that individuals' online and offline personalities are less diverse in VWs. To support this assumption, the study of Au (2007) shows that the majority of residents in SL represent themselves with respect to their real lives in some ways. This suggests that their online and offline personalities become more congruent. Further, as explained by Turkle (1994), people may explore and express new aspects of their identity to show their "ideal selves" thanks to ample opportunities provided by the anonymity, which means one's off-line identity is not necessarily known to others, in-world. Thereby, some avatars may also be idealised versions of an individual's personality and "a better self" (Turkle 2011, p.160). By contrast, some individuals may have an online identity that does not match their real life identity. It appears that the agent of the identity is not simply a participant in a VW, but becomes a generator of it, which may be exposed to multiplication and fragmentation.

Going beyond this however, the findings of Ducheneaut et al. (2009, p.1) indicate that "avatars might be a better vehicle to explore new forms of physical embodiment rather than for exploring new facets of one's personality." In other words, identity exploration of users primarily lies in their physical characteristics e.g. height, weight rather than their psychological characteristics e.g. assertiveness, self-esteem and so forth. Building upon these assumptions, the majority of problems related to identity on the internet are the presence of participants, i.e., the state of being physically at a

place, as it may be difficult to sustain online communication effectively not only in the absence of non-verbal cues but also the lack of f2f and physical interaction in text-based CMC. This challenge can actually be somewhat accomplished in VWs in which there is a possibility to construct identity and genuine relationships by the presence of avatars. Taylor (Taylor 2002, pp.54–55) suggests that avatars can be truer reflections of an individual than their offline selves. More specifically, trust is developed in the flows of social interactions in VWs. That is to say, permanent trust, i.e., authenticity, between individuals could be maintained by sustaining communications where they express their identities and selves. Consequently, VWs appear to give a strong twist to the concept of identity as a mode of being. Fluidity of identity can potentially encourage self-awareness and foster tolerance and respect for others.

1.8 Virtual Community

It is essential to elaborate what is understood as the virtual community before moving any further. Virtual community can be described as the community that is no longer located in a specific place or is not dependent on the place, i.e., virtual communities are not bound by space and time, and do not necessarily have to meet all of people' needs. Thus, many individuals can be members of communities with different aims, where common understanding rather than proximity unites them. Therefore, members of the community may never meet f2f, yet they consider themselves to be united by shared interest or experiences in this community. Networks of members may be more important than having a sense of place. This definition of virtual community should not be confused with the term "Virtual Communities of Practices" (VCoPs). Dubé et al. (2006, p.70) argue that, "this type of virtual community is different from what is usually referred to as an on-line or Internet community where people share and learn on a casual basis on any given field of interest." VCoPs are indeed used as "knowledge management" tools by organisations for information sharing and common purposes (e.g. Usenet). Virtual communities in the service of teaching and learning in this study may not be referred to as VCoPs in this sense, but as a community for teaching and learning extended via the Internet. As a consequence, this type of community may be distinct from that which is performed in the other forms of communities since it may be guided by an educator and linked to the disciplinary of educational settings.

As is clearly demonstrated by both Meadows (2007) and Boellstorff (2008), SL consists of many different communities living side by side, each with its own codes and etiquette and individuals immersed in the virtual world beyond the educational activities. In the world of SL, it is evident there are well over 100,000 active communities, some of which have over 10,000 members (Second Life Blogs 2013) For instance, Virtual Worlds Education Roundtable (VWER), which is also considered within this study (see Section 3.12.3 for further detail), is an inspirational example of a virtual community in SL. It was founded in 2008 in an attempt to share ideas and talk about issues that concern educators with regard to using VWs as a teaching and learning environment. It is not uncommon to see attendance of around 40 participants or more in a meeting in these group gatherings. This group meets in SL every week on Thursday at 11.30 AM.

1.9 Economy within SL

The economics of SL is not perhaps a principal interest for educators and it is beyond the scope of this study. Nevertheless, this section provides a brief overview. An active economy exists in SL, based on Linden Dollars (L$). This allows users to buy and sell objects created using the currency of L$. . At the time of writing this section, the Linden exchange rate is between L$270 to L$300 for US$1.00 (Second Life Web Site 2014.) The SL economy has an actual world revenue of "$7 million a month and is approaching $100 million a year" (Launch 2013). This revenue is generated through premium subscriptions, marketing, and microtransactions. In the SL economy, this includes virtual land purchase, premium membership accounts and user trading of virtual products, goods or services. Although residents do not need to own land, they must have a Premium account to purchase land in SL. Land prices vary depending on the region and whether they own or rent. In addition to land prices, residents also pay monthly maintenance fees depending on the size of their land. Here, it is necessary to specify a common criticism of SL, which is the high fees associated with land rental for educational activities (Fitzsimons 2012, p. 33).

1.10 Topography of the Study within SL

SL consists of interlinked regions that contain land, water and sky. Each region, called an island, has an area of 65,536 SL square meters. Each island has specific

coordinates and an associated SL location based linking system, referred to as SLURL, which is similar to a web page address identifier. By clicking on a SLURL, the user "teleports" to their selected location. Until recently there were two distinct SL worlds, a separate teen and adult world, which are referred to as "grids". The teen grid was launched in 2005 and accessible only to those between the ages of 13 and 17. However, Linden Lab decided to close teen SL in 2010 due to lack of sufficient income to sustain it economically. Currently, the SL adult grid is accessible to those over the age of 16 with respect to Terms of Service (ToS). Within the world of SL, the user can build, through LSL, a scripting language that is unique to SL. The user is able to create their environment and objects in the way they want through use of this script.

The island that is the focus of this study belongs to an institution in the UK and was purchased in 2007, funded for its initial year by an institutional centre[1] for Inquiry Based Learning (see Section 2.10.6 for further discussion) and for the subsequent years by the Information School and School of Education in the UK. I now present the bird's-eye view of the island in Figure 5 and then describe features of it within a table.

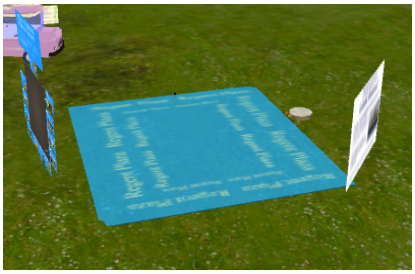
Figure 5: The Bird's-Eye View of the Island

The island is used for inquiry based, reflective teaching and learning activities, networking and continuing professional development. The area is an entire region in SL. Here I briefly describe the environment with embedded snapshots, I, however,

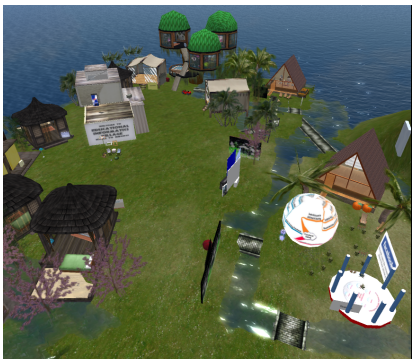
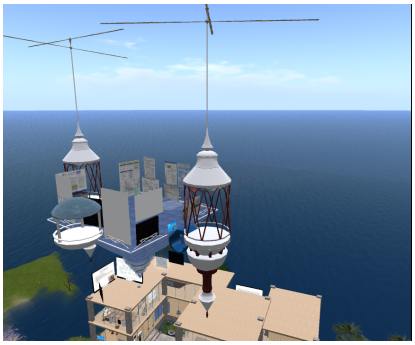
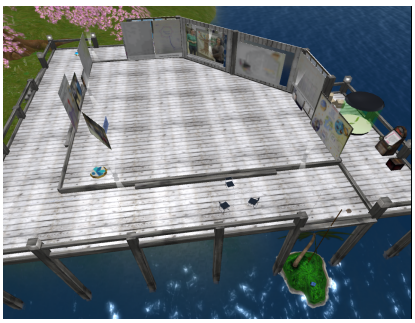
[1] Reference withheld to protect anonymity

elaborate and reflect in more detail about how the space is carefully designed to optimise teaching principles in Section 4.10.

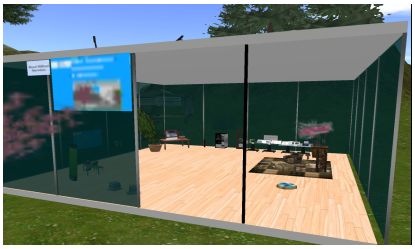
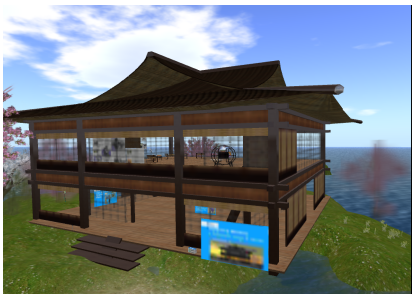
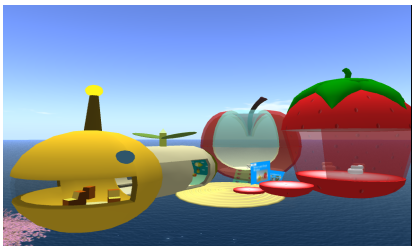
Locations at the time of the study were:

	*A Centre for Information Literacy Research, Information School & School of Education* This is the place in which discussion events or temporary exhibitions and special meetings take place. There are also some posters about Information Literacy (IL), and links, plus displays from IL weblogs.
	*The Plaza*[2] Here there is a teleport board to main locations and a poster with a notecard giving information regarding the island.
	*Centre for Information Literacy Research*[3] Here there is some general information with regard to IL

[2] Reference withheld to protect anonymity
[3] Reference withheld to protect anonymity

	*Build and Practice Area* This is the landscape area for the students to practice building, rezzing objects and basic SL skills.
	*Skybox Conference Platform* Here the students present their posters regarding their study.
	*Mountain Campfire* This place is for relaxing. There is an access to the tree house and over the bridge to the mountaintop.
	*The Platform Centre*[4] This is the platform area with choices of seating for interviews and displays of the students' project posters.

[4] Reference withheld to protect anonymity

	*The Common Room* This is the place in which a few of the owner of the island's colleagues have rooms and links relating to their studies.
	*The Library* The library has some links and academic articles relevant to libraries and SL. Outside the library is a café area where virtual food and drinks are served.
	The Sakura House This is the restful venue in which the owner of the island has her office and there is a discussion area with a circle of seating.
	*Insect and Fruit House* These are the colourful venues in the sky, with several chairs for a couple of people in each.
	*Hobbiton House* A Hobbit house for small group discussions.

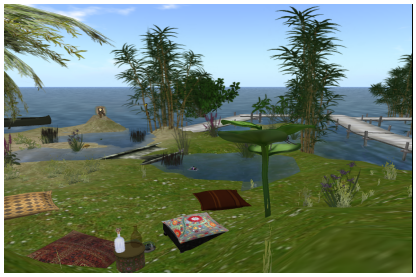
	*Water Garden* The water garden is a relaxing place which has a peaceful view with trees and plants.
	*Tree House* This is a pleasant tree house with choices of seating for interviews and which displays some posters of the students.

Table 1: Locations on the Island.

1.11 Structure of the Thesis

Chapter 1 introduced SL and the rationale for the chosen topic. Based upon this, the chapter first presented an understanding of VWs by exploring how they became popular. The chapter then outlined the aims, objectives, RQs and significance of the study. Following this outline, key terms were defined. The chapter drew a conclusion by presenting the concepts of identity and community, as well as economy and topography within SL.

Chapter 2 constitutes the body of knowledge within which this research is located and introduces the theoretical framework of the study. Thus, this chapter includes components such as the principles and synthesising theories underpinning the construction of teaching and learning. It aims to inform and locate this study within the existing literature as well as to structure a foundation for my RQs.

Chapter 3 is a comprehensive outline of the research paradigm that frames this study. This chapter starts with my positionality and continues with the methodological approach of the study, procedures and proceeding ethical paths. I discuss, analyse and justify the approaches and instruments and participants used to address my RQs in detail.

While Chapter 4 presents analyses and interprets data generated from the participants and the environment, Chapter 5 presents a detailed discussion of themes and evaluates the meaning of the findings in the light of both the existing body of knowledge and my RQs.

Chapter 6 firstly presents a narrative of my journey of immersion into SL. This chapter then presents a summary of the fieldwork and data analysis of the thesis and the answers to RQs. This review is then followed by an overall conclusion and recommendations for further studies derived from the research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the literature on teaching within VWs. In particular, it presents a background for understanding pedagogical strategies within SL in blended scenarios in HE. I give details of how the ranges of conceptual frameworks provide various affordances and provoke different kinds of teaching approaches and experiences within SL. Specifically, this study examines the intersection of approaches to teaching in HE, blended situations, immersive experiences, and professional or work-related motivation to engage in SL for educators. The presentation of the reviewed literature, however, is not limited to one designated chapter. First, the introduction chapter has already presented relevant literature to situate this study. Next, this chapter draws on a large body of literature on teaching and SL in the context of HE to present a comprehensive picture of the field of this research. In Chapter 3, I discuss my understanding of the research paradigm by considering literature related to the key methodological considerations. In Chapter 4, literature contributes to the description of my journey of study and immersion into SL. In Chapter 5, relevant literature underpins the presented themes. Finally, Chapter 6 draws on literature to explain and present my understanding of teaching and learning within SL.

In my first two years on the PhD programme, I observed that there was a wealth of literature on how students could experience presence and make learning experiences in VWs. In recent years, there has been a growing body of studies examining the effect of VWs on students' learning and achievement across different disciplines such as language (Atkins & Gaukrodger 2011), healthcare (Wiecha et al. 2010; Rogers 2011), architecture (Rodrigues & Magalhães 2010), business (Bonsu & Darmody 2008), and literacy (Merchant 2010). The findings of these studies encourage the idea that VWs can be used as an environment in which students are engaged in learning experiences. On the other side, there seemed to be less literature providing guidance on how to make essential pedagogical use of VWs. Therefore, it is important to understand how VWs may be beneficial for the design of enriching learning experiences, the identification of pedagogical activities, and to determine the ways to prepare educators for these sorts of immersive experience (Savin-Baden et al. 2010;

De Freitas et al. 2009). However, this review does not simply attempt to concentrate on how to teach within VWs, but also to consider how educators' teaching strategies are affected in classroom pedagogies. It is a new niche that leads to consideration of educators' ways of thinking about teaching. The driving factors for compiling this study thus were new teaching ideas and the sheer potential VWs may offer. Drawing on these factors, the review illustrates a range of concepts relating to research in the following domains:

- An overview of conceptualising teaching with an emphasis on VWs in HE.
- A summary of characteristics of blended learning in this study.
- A discussion of learning pedagogies within VWs.
- Implementation of teaching strategies in SL.
- The concept of CPD within VWs.
- A discussion of students' antipathy towards the environment and educators' reactions.

As part of the process of identifying a framework to organise the concepts, I applied various parameters as a guide to scope the literature. The review undertaken is therefore a result of a combination of strategies. For example, this study presents reviews of specific journals and databases such as the Journal of Virtual World Research (JVWR), the British Journal of Educational Technology (BJET), ProQuest, Educational Resources Information Center (ERIC), Taylor & Francis Online Journals, SciVerse ScienceDirect (Elsevier), SAGE Journals and Google Scholar to classify and understand VWs' potential as educational spaces. This also includes Springer Series in Immersive Environments, Information Science Reference Series in Multi-User Virtual Environments, and Emerald Series in VWs. These resources contain diverse studies which reflect the breadth of interpretation and application of teaching and learning in VWs. The keywords included: Second Life, Virtual Worlds, Higher Education, Pedagogy, Teaching, Learning, and Immersion.

The formation of a range of a community of VWs research is evolving. Nevertheless, to provide a base to build upon, I focused on the wide variety of topic areas that are involved in VWs research, including the history, culture and sociology of VWs, qualitative and quantitative research, virtual ethnographies, pedagogy and education within VWs, experimentation, and the intersection of VWs and classroom teaching. I

found these relevant to my research area and essential resources for my RQs, since they provided experimental results and experiences. The purpose of this review is not to articulate all aspects of the current discussion of immersion experience in SL, rather it is to introduce a number of concepts that could also be referred to in subsequent chapters, as well as in evaluating the overall results and conclusions. In this respect, I do not specifically focus on attitude and behavioural changes, individuals' social position and cultural experience, or attributions of trust, and credibility in VWs. I am aware that social change exists through SL, as a way of communicating across various cultures, yet this is particularly essential when students' experiences of presence and their identities are explored within VWs. Consequently, this review includes peer-reviewed published work, regarding principles of teaching relevant to my RQs, as well as studies that deal with HE and the blending of educational affordances of VWs with f2f teaching. This also includes giving examples from a range of implementations considering different aspects of teaching experience, such as classroom management, and scaffolding supports within SL.

I identified five categories then to form sections that were elaborated through the RQs. The first category begins with a brief account of approaches to teaching in HE (Section 2.2). In particular, the work of Prosser & Trigwell (1999), and Samuelowicz & Bain (2001) help outline conceptualising teaching in HE that can be adopted within VWs. The ways teaching and learning is conceptualised within academia, which also helps to orientate educators' dispositions to teach in particular ways, have come forward over the period of the study. This was particularly crucial to indicate educators' typical ways of thinking about teaching when they immerse in VWs. It became clear that this provides a bridge between the concept of VWs and its relevance to teaching and learning experiences. Following this, the second category looks at broad trends in the ways digital technologies are used in institutions and educational rationales for uses of "Blended Learning" based on a particular approach (Section 2.3). The reflections over teaching and learning in the study of Sharpe et al. (2006) is considered in order to extend discussion of the experience of blended learning..

The third category focuses on educational uses of VWs and discusses some issues within immersive experiences (Section 2.4 & Section 2.5). This is followed by the Hype Cycle (Gartner 2013), and the diffusion of innovation model (Rogers 2003), in order to illustrate how VWs are expected to evolve over years and how educators perceive teaching within them. The adoption of these environments by educators is based upon a particular disposition for the diffusion of a virtual world in HE (Section 2.6, Section 2.7, & Section 2.8). The fourth category discusses the emerging learning theories and pedagogical practices around immersive teaching experiences and examines the concept of "cybergogy" (Scopes 2009) in detail (Section 2.9, Section 2.10, Section 2.11, & Section 2.12). As the conceptual framework evolved, links between different paradigms such as identity, social presence, and performance within an embodied social experience became apparent. Following this, educators' professional motivation to participate in VWs other than the requirement of a class activity is argued (Section 2.13). This is particularly important when educators negotiate or co-operate in-world to frame their teaching. Eventually, the fifth category considers educators' strategies towards students' potential antipathy to the immersive experience in order to sustain learners' experience within VWs (Section 2.14). This endeavour is expected to overcome personal barriers that could be represented through immersive experience by focusing on the crucial role of educators in learning through immersive experience.

2.2 Approaches to the Concept of Teaching

It has been well acknowledged that the way in which teaching is performed in HE is dependent on the educational beliefs and assumptions of academics (Pajares 1992). Furthermore, Bain et al. (1998) suggest that new teaching initiatives, such as those related to technology and the Internet, are likely to have new insights and practice due to differences between the educational assumptions in the new initiatives and those of academics adopting them. Another way of expressing this point is to suggest that educators' attitudes and beliefs towards technology in educational settings can have a significant influence on providing new insights for their conceptions of teaching. It appears that educators' thinking and beliefs about teaching and learning are linked to what they do in their classroom and the choices they preferred in deciding how to integrate ICTs in their teaching strategies (Jimoyiannis 2009, p.328). It emerges that

educators are likely to adopt practices with technology that reflect their beliefs and conceptions about teaching and learning.

Samuelowicz & Bain (2001, p.300) state two primary orientations, based on their phenomenographic study, that form educators' beliefs, which are: knowledge transmission (transmissive, teaching-centred) and learning facilitation (facilitative, learning-centred). The fundamental difference between them is that the former is more about helping students whereas the latter is more about facilitating understanding to develop expertise (ibid, p.312). This suggests that within a teaching-centred model, educators are the main characters and are expected to establish understanding of their subject matter. Consequently, teachers expect students to remember what has been taught and recall their reasoning in similar situations when needed. Consistent with this way of "delivering" the subject, the roles of educators are anticipated to encourage students to ask questions to clarify their understanding. Whereas, within a learning-centred model, students are anticipated to become self-determining learners and learning becomes a lifelong process. Within this process, students are expected to become self-critical and reflect on their approaches to identify the factors that lead to success or failure. Consequently, the role of educators is to enable students to become involved in controlling their learning.

Similar to Samuleowicz and Bain's teaching and learning orientations, Prosser & Trigwell (1999) offer a model for understanding teaching and learning in HE, which relies on the idea of "constitutionalism". They approach learning as "about experiencing the object of study in a different way, where the experience is a relationship between the person experiencing and the object experienced" (ibid, p.12). That is, from a constitutionalist perspective on learning there is an internal relationship between the individual and the world, and they are not constituted independently. In adopting this constitutionalist perspective, they argue that in any act of learning and teaching, prior experiences, perceptions, approaches and outcomes are simultaneously present, considering some of these aspects may be more to the foreground of awareness, while other aspects may be more to the background. In other words, students approach the new learning and teaching context with substantial variations in their prior experiences of learning and teaching. The ways educators perceive their teaching situations, their conceptions of what constitute teaching and

learning within the context in which they are teaching, and how they approach the outcome of their teaching are all essential for the quality of students' learning process. Prosser & Trigwell 1999, pp.145–147) identify six conceptions of teaching, based on their phenomenographic study, that educators bring in their teaching contexts. These are:

- Teaching as transmitting concepts of the syllabus.
- Teaching as transmitting the teachers' knowledge.
- Teaching as helping students acquire concepts of the syllabus.
- Teaching as helping students acquire teachers' knowledge.
- Teaching as helping students develop conceptions.
- Teaching as helping students challenge conceptions.

The relationship between these conceptions of teaching could be seen as transmission of information, through helping students to acquire the concepts of the discipline, and then develop and change their conceptions (Trigwell & Prosser 1996, p.278). This spectrum is also consistent with the range of teaching-centred to learning-centred orientations. This suggests that educators who adopted a student-focused approach to their teaching focus on conceptual change, whereas educators who adopted a teacher-focused approach focus on information transmission. In connection with these conceptions, it can also be said that individual perceptions of educators' teaching situation affects the way they approach their teaching. This finding by Prosser & Trigwell (1999) is not necessarily inconsistent with the perspective on teaching and learning of many educators and they may only be intuitively aware of this position.

Another consideration for educators is to take students' learning preferences into account. The basic assumption is that being aware of students' learning styles can be used to align the teaching style of educators. Due to differences in students' preferences, educators might be typically expected to address the need to classify teaching strategies according to students' characteristics, strengths and preferences. Felder & Silverman (1988) propose a widely recognised model of learning styles and its relations to other models, such as Kolb's theory of learning styles (Kolb 1984), which is presented in the study of Felder & Spurlin (2005). An individual's learning style is determined by five main dimensions with each including two directions. The dimensions contain:

- **Perception**: The information type the student prefers to perceive, which can be sensory (e.g. sights, sounds and physical sensations) or intuitive (e.g. memories and thought).
- **Input**: The type of information sensory information the student effectively perceive, which can be visual (e.g. pictures, diagrams, graphs and demonstrations) or verbal (e.g. written and spoken texts, and explanations).
- **Organisation**: The type of organisation of information the student comfortably perceives, which can be inductive (e.g. facts and observations are given), or deductive (e.g. principles are given, consequences and applications are deduced).
- **Processing**: The ways the student prefers to process information, which can be active (e.g. through engagement in physical activities and discussions) or reflective (e.g. through introspection).
- **Understanding**: The ways the student progress towards understanding, which can be sequential (e.g. in continual steps), or global (e.g. in large jumps).

Based on the Felder-Silverman learning style model (Felder & Silverman 1988; Felder & Spurlin 2005), there are different types of learners (e.g. active/reflective, sensing/intuitive, visual/verbal, inductive/deductive, and sequential/global). Regarding processing, for example, active learners prefer to test the phenomena and work well in groups. In contrast, reflective learners prefer to involve examining and manipulating the information. In terms of perception, for example, sensing learners like facts, data, and concrete information and are good at doing experiential work. In contrast, intuitive learners like abstract concepts as well as exploring new concepts. With respect to input, visual learners like pictures, diagrams, charts, films, demonstrations, whereas verbal learners prefer the information to be presented predominantly within written or spoken words such as lecturing. In relation to organisation, inductive learners like observing and measuring the information, whereas deductive learners like inferring principles and deducing consequences of inferred principles. With reference to understanding, sequential learners prefer to learn in a logically ordered progression and follow linear process, while global learners sometimes learn better by engaging directly with more complex and difficult information.

Zaharias et al. (2010) address learning styles in VWs based on an empirical study, which was conducted with 49 undergraduate students for whom a simple static web site and a VW were used to introduce a short course. They state that there was not enough evidence to indicate whether adapting VWs optimises teaching and supports individual learners regardless of their learning styles. They suggest that one explanation might be that the authentic 3D graphics in VWs could distract learners to a certain extent. There might be also an innovative way of exploring and navigating within VWs (Wrzesien & Raya 2010; Papastergiou 2009). What is more, they find that there was no significant correlation between the learning modality or intervention on students' learning performance and the learning style. Considered solely, this finding is in conflict with the study of Barnett (2007), as he brings the attention firmly onto students' dispositions and qualities, such as the willingness to engage, self-discipline, and resilience, to promote good learning. Likewise, Cheng (2014) investigates students' learning styles in relation to their attitudes using SL and the study measures the learning styles of 32 undergraduate students by the Index of Learning Style (Felder & Silverman 1988). Cheng (2014, p.114) finds that the main preferred learning styles of the participants were visual learning, sensing learning, and sequential learning respectively. At the same time, more active learners than reflective learners agreed with the aspects of usefulness, identity play and satisfaction, whereas a higher percentage of verbal learners agreed with the aspects of communication, identity play and satisfaction. This suggests that active students like experimenting with their learning through hands-on activities and verbal learners like communicating with peers through avatars.

The aforementioned perspectives give some indications of the type of practices that result from students' individual learning styles or orientations. The role of an educator is to provide learners with a variety of experiences so that students each may find a match between their learning preference and the style of the teacher. However, this interpretation appears mechanistic and problematic. This is because it may be misleading to allocate particular learners to particular styles, as students may not fit one particular style. This also does not consider whether the preferred learning style is desirable in all instructional situations, depending on the nature of skills that are taught or the context in which students are taught. What also seems missing is the fact that educators can influence the approach students take to learning (Tudor et al.

2010). That is, students' orientations could be considerably dominated by their perceptions of the demands of the learning activity and students may adopt different approaches in different contexts and different teaching contexts may evoke different approaches to learning (Laurillard 1997). Consequently, the approach educators adopt to their teaching imposes links to the approach their students adopt to their study, which I discuss within the VWs context. Given these complexities, Barnett (2007, p.115) suggests the concept of "pedagogy of inspiration" that may help educators crossover interactions between their teaching style and students' preferred learning style. The idea of inspirational teaching aims to consider each student and to provide space in which they can find excitement, inspiration and energy. He attempts to bring the attention onto new techniques and experiences that form students' interests and willingness. More accurately, Barnett (2007, p.119) states that educators could be a source of inspiration through their own qualities, dispositions and energies or they might orchestrate the students' experiences with responsibility for their own learning. According to Barnett (ibid, pp.119-126), this could be indicated by being enthused for their own subject matter, having a care for the students and allowing students to become beings-for-themselves. In the category of teachers' conceptions of the learning, Prosser & Trigwell (1999, pp.147–149) present the point that educators see learning as about conceptual change and personal process . This provides insights into bringing immersive experience into the classroom for authentic self-creativity in which students may be committed to themselves. In this respect, VWs may have the pedagogical value for steady engagement to encourage each student's willingness.

Furthermore, drawing on Mayes & De Fretias (2004, pp.7-9) category of types of teaching approach, teaching is considered to consist of three main perspectives, which are "associative", "cognitive" and "situative". In broad terms, associative strategies approach learning as activity through structured tasks and an acquisition of knowledge. Cognitive techniques attempt to approach learning as "learning through understanding", building upon the learners' prior experiences with tasks such as problem-based or experiential learning activities. Situative strategies approach learning as social practice and learners construct knowledge through discussion and collaboration. Each of these approaches draws different pedagogical models of learning which I discuss in detail in Section 2.10 of this chapter. One feature that immersive experiences may offer is the ability to deepen understanding of concepts

by allowing manipulation and exploration of the subjects. Critical to this process is the use of strategies to foster challenges and opportunities for innovative teaching. Moreover, the adoption of VWs in educational settings raises questions regarding educators and learners' roles, power and control, and how learning occurs in these environments. The different characteristic of a VW such as SL also involves educators in adapting the ways they teach and manage classes to support students. Further, educators have the opportunity to enable students to experience, albeit virtually, allowing them to move outside of their comfort zone where they normally reside and pushing them into a contact zone where different cultures encounter, clash and engage with each other, as promoted by Pratt (1991). With the educational opportunities in VWs, the term "avagogy" – leading avatars – is introduced by McKerlich (2008) owing to shifts in how educators approach teaching and learning in VWs. Cheney & Bronack (2011, p.80) suggest that "avagogy is the set of skills, dispositions, strategies, and styles instructors employ via their avatars."

Prensky's notion of " digital natives" (2001; 2005) has been pervasive to refer to young learners who have sophisticated "digital literacy" (Gilster, 1997) skills and learning preferences surrounded by different digital modalities. The term "digital natives" can also be meant by others such as "Homo Zappiens" (Veen & Vrakking 2006), "Net Generation" (Oblinger & Oblinger 2005), "Google-Generation" or "I-Generation" (Rowlands et al. 2008; Rosen 2011), and "Generation Z" (Jones et al. 2007), to refer to a new generation of learners who are highly "linked" with the social media technologies and Internet and learn in a different way. Through the lens of this argument, learners in this generation develop on their own, and without structured instruction, the skills necessary for making their own implicit and explicit learning through discovery and critical thinking. From an educational point of view, it is the teaching process in which educators give students the opportunity to practice self-regulated and self-determined learning that is sustained interaction with technology. However, a noteworthy criticism indicated by Kirschner & van Merriënboer (2013, p.178) is that these widely believed and implemented innovations do not prove that students are the best directors of their own learning who have already acquired essential digital literacy skills and choose the best way to study and learn.

I now turn to the form of the context in which this study was conducted and present its implications over the teaching strategies taken in this research. This is primarily because of the fact that instructional practices and strategies can easily be dominated and directed by technology (Hussain 2009, p.71). Further, there appears to be great value in combining f2f teaching and other online applications with the pedagogical affordances of VWs (Salt et al. 2008), and this study is contextualised within the blend of f2f, Web 2.0 applications and SL. In addition, the function of educators in facilitating the learning process of students appears to be in line with the concept of teaching in HE within the implementation of the blended approach. I now draw key aspects of blended learning and discuss its impact for education.

2.3 The Context of Blended Learning

Although the term "blended" is widely and differently used within the context of teaching and learning, it has been defined as a mixture of online and f2f learning using a variety of resources and communication options available to students and educators (Harding et al. 2005, p.56). Blended learning is defined by Chew et al. (2010) as a "combination of face-to-face learning and teaching mediated by technology". It is therefore a practice within the learning environment that combines both online and f2f approach. There has been widespread use of e-learning technologies, recently, across the HE institutions in the UK, as predominantly supplementary to f2f teaching (JISC, 2003; Oliver & Trigwell 2005). That is, it is the blend of e-learning and f2f teaching which is becoming increasingly established in the UK institutions. The fundamental pedagogical aspect behind this growth is that ICTs are widely perceived as a catalyst by bringing benefits to learners and educators within shared learning environments. Furthermore, a blended learning approach facilitates the development of digital literacy skills by its characteristics, directing individuals to operate in digital environments. A blended learning approach therefore is essential to understanding the skills necessary for the students.

The term "blended" within educational concepts also suggests combining pedagogical approaches to produce optimum learning outcomes, but it is being used in this study to refer to the combination of online forms of instructional technologies with f2f teaching, often in the form of lectures. Oliver & Trigwell (2005) criticise descriptions

of blended learning as involving a mix of online and f2f teaching, a mix of media or a mix of contexts. The important point of their critique is that there is nothing particularly special about learning online, exploring the mixing of medium, or blending contexts. This highlights the question of whether the mix is essential to describe this way of practicing teaching in HE. Their suggestion for blended learning is upon the perspectives of learners and they argue that "actual blended learning would involve students learning through experiencing variation aspects of what it is that they are studying" (ibid, p.22), referring to "variation theory" (Pang 2003). For Oliver & Trigwell (ibid), it is the relation between variation theory and course design that leads to actual blended learning. That is, students experience certain patterns of variation in the object of learning in various blended learning contexts. The variation theory of learning is based on the concept that students learn by discerning the aspects of the variation as a phenomenon during their learning experiences (Marton & Tsui 2004). In other words, furnishing variety in the ways in which students experience learning is recognised as being crucial. One example of an attempt to do this, blends of e-learning with other media such as VWs, may help students experience the variation in different aspects of the subject being learned. Another example is to recognise students' existing learning experiences and allow them the opportunity to draw on previous experiences.

The nature of this study offers online forms in the sense that VW practices and supplementary resources for the subject matter through an institutional VLE, instead of other forms of learning at a distance. To understand blended learning within VWs holistically, I highlight how educational rationales for it have been based on a particular pedagogical approach such as social constructivism (Bronack et al. 2006; Dede 1995; Garrison et al. 2001; Salt et al. 2008) or situative learning theories (Greeno et al. 1996) in Section 2.10 in this chapter. Within these considerations, the term embraces three key aspects: delivery mode, technologies, and chronology. As stated earlier, the course in this study has blended f2f modes using the institutional VLE and other online applications including the discussion board, group, and e-portfolio functions, and external web sites and the virtual world of SL where learner-tutor and peer-to-peer interactions are typically synchronous. Sharpe et al. (2006, p.22) finds these three aspects alone insufficient for being effective and satisfying learning experiences and they state that learning and teaching remains predominantly

traditional in this way of practice. They suggest five other dimensions, of which three are "locus", "roles", and "pedagogical approach" to take blended learning further. They highly value authentic work or practice-based settings along with multi-disciplinary groupings of learners and educators, and different pedagogical approaches where VWs can empower the adoption of blended learning.

Building teaching methods upon the concept of blended learning with considerations of Oliver & Trigwell (2005), Sharpe et al. (2006) shift the emphasis from educators to learners, and from content to experience. Arguably, this position suggests that certain patterns of the variation in the experience of the learning of students in the blended learning context are the key to be considered by educators. From this point of view, educators design a space for learning where a range of variations is presented to experience the object of learning. One way of doing that is blending for variation by using a mix of media including VWs. The idea of experiences of variation also appears to encourage educators to reflect and engage with new teaching ideas and experiences, which may occur across the boundaries. Rather than focusing solely on learners' experiences of blended learning, educators can situate their learning by exploring differences in practice across the forms of teaching such as a classroom and a virtual world of SL experiences. In applying this theoretical perspective to educators' learning, they encounter experiences of variation that may lead to changes in practice as a result of using blended learning. This also includes recognising the informal and incidental learning by sharing their teaching practices with their colleagues in their offline as well as online communities (Mackey 2008).

Next I introduce educational projects in SL in education settings before I delve into the conceptual frameworks that were built around learning pedagogies within VWs.

2.4 Prominent Examples of Educational Activities and Projects in SL

It is possible to see various examples of virtual world applications from a wide range of fields such as education, medicine, art and design technology and so forth within the nature of distance or traditional educational settings. It is beyond the scope of this study to explain all the projects and studies that have been conducted and applied in SL but it is worth highlighting noticeable ones.

In April 2007, the New Media Consortium (NMC) presented the availability of low-cost SL educational sims including a multi-media amphitheatre, a conference room, classrooms, a gallery suitable for exhibiting student work, and a resource centre for rental to educational institutions. Various institutions across the world had a presence for teaching and learning. Students were able to have immersive learning experiences and develop collaborative learning. In 2008, the Open University in the UK conducted a project called SCHOME -"not school, not home: education for information age" in the SL teen grid to meet the needs of today's learners and to give a sense of "lived experience" (Gillen 2008). The primary aim of the project was to prepare learners aged between 13 and 17 for the needs of the 21st century society by enhancing their skills for communication, collaboration, problem solving and learning to learn within a closed or restricted virtual area. In this project, students were able to experience and explore the environment and work collaboratively with each other. In the meantime, students had projects such as creating a machinima, building vehicles, or organising social ceremonies. The Schome Park Programme managed to raise some important issues about virtual environments and developed a way of engaging learners by giving learners a sense of "lived experience" within metaverse (Peachey 2010, pp.53–55).

Another project is SLOODLE (Kemp et al. 2009) that has emerged as one of the new instrumental ways that aims to re-conceptualise the concept of virtual learning environment by integrating web-based VLEs and 3D MUVEs. It is the integration of MOODLE, which is an open source VLE, and SL that attempts to integrate a variety of activities. The main feature of SLOODLE is its accessibility, as users who cannot access SL for any reason can participate in the same class in-world and also that class can be widened through asynchronous communication in the Moodle forums. Based on research conducted by Kemp et al. (2009), they found from the first pilot study that SLOODLE could offer benefits to educators providing technical support and user engagement. Furthermore, Kluge & Riley (2008, p.132) draw attention to the lack of affordances of SL compared to VLEs. They tell us that SL does not offer many features of VLEs such as providing a grade book, an assignment drop box, asynchronous discussion tools, online surveys and so forth. Yet, SLOODLE has facilities to address all these issues.

In the same year, Gardner et al. (2008) developed the MIRTLE project to create a mixed-reality environment for teaching and learning in the University of Exeter. The key hypothesis of the project was "avatar representations of teachers and students can help create a sense of shared presence, engendering a greater sense of community and improving student engagement in online lessons". In other words, the presence of avatars enhances engagement and learning. Since the majority of distance students may feel socially and pedagogically isolated not only from each other but also from institutions (Brown 1996), they believe that this project particularly helped distance learners to feel a sense of social presence. The aim for this project was to bring together the physical and SL to foster a sense of community between remote and local students along with educators. As a consequence, they sought to eliminate the isolation of distance students, since feeling themselves as really being there may inspire them and ultimately enhance their learning process.

Furthermore, there are a number of studies that are examining the educational affordances of VWs and investigating the potential of using them in teaching and learning context (De Freitas et al. 2010; Macedo & Morgado 2009; Reeves & Minocha 2011; Savin-Baden et al. 2010; Warburton 2009). Some studies focus on the sense of presence and identity in VWs (Aas 2010; Evans 2011; Peachey & Childs 2011; Savin‑Baden 2010) with their unique opportunities. Others focus on the simulations and the new experiences that may not be possible, non cost-effective and dangerous to represent in the real world (Aldrich 2009; Honey et al. 2012). It is possible to enlarge the number of examples and their implications within VWs from the relevant literature.

2.5 Ethical Issues in VWs

Recent research has indicated that users of these virtual platforms may have more than one avatar and also have multiple identities, with differences in gender, class, age and background that may influence the ways residents establish confidence between each other. The mix of personal identity in a metaverse therefore may cause a wide range of behavioural distortion between users. Perhaps more importantly, the online identity of a user may directly influence the real character of that user. Associated with this, Yee & Bailenson (2007) found an effect that is known as "proteus effect", in

the use of avatars, which determines that users develop certain characteristics and behaviour depending on the appearance of their avatars. For example, a tall avatar acts more confidently than a small avatar in negotiation. In this sense, it may be crucial to allow participants to play with their avatar's appearance, hairstyles and clothing for efficient learning outcomes. Another concern is the potential dangers of sexually explicit content which sometimes appear in SL. SL allows users to access many places in which sexually explicit content may be encountered without age verification. This may be a cautionary pause for thought regarding access to VWs in institutions. With regard to exposure to inappropriate material in SL, though bearing in mind that students are over 18 in HE, they are expected to challenge or cope with their experiences even though occasionally they might find themselves offended.

Furthermore, some may argue that SL is a game-based environment, however Bell et al. (2010, p.177) argue that SL environment does not have a game mechanism since there are no missions, aimed goals, challenges, rewards or risks. In addition, it is a user-generated environment. In fact, the argument here is not whether it is a game or not. The argument is that SL looks like a cartoon for fun, and not serious. Some may think that since SL is designed for fun, it cannot be a proper medium to learn in, and therefore it has no value for educationalists. Yet, it can be argued that learning in SL is not for fun but that it is fun. Webber & Nahl (2011, p.13) affirm this idea and state, "For me SL is an environment where I teach, learn, feel creative and also have fun". In sum, the central arguments about using SL and other VWs in education are that; considering VWs as an extended version of chat rooms, the lifelike representation of space and self and the game-like atmosphere of VWs is irrelevant to the educational experience and distracts from the seriousness of the educational mission (Nesson & Nesson 2008, p.273). Here I mention briefly some concerns in virtual learning platforms, but ethical issues are discussed in depth in Section 3.12.1. In addition to institutional, cultural and ethical issues, I consider the strengths and weakness of these environments in the following section.

2.6 Advantages and Disadvantages of VWs

According to a survey by the NMC in 2008 based on 358 respondents, the most affirmative aspects of SL were that it allowed rich interactions between users, allowed

users to meet each other, allowed the expansion of networks between residents, allowed sharing between communities, allowed educational events and teaching and learning. However, it was reported that griefing/abuse, perceived violence and technical issues in SL were the worst experiences. In addition, a survey conducted by Eduserv in 2008 on the use of VWs in institutions in the UK revealed that creative and collaborative opportunities were the most cited positive aspects (Kirriemuir 2008). This implies that SL affords an environment where experiments that could be considered unethical and impossible in real life can be carried out safely (Bignell 2008). In this way, SL may offer new ways of interacting, thinking, developing skills and having experiences in diverse learning styles and cultures. A study conducted by ScienceDaily (2008) revealed that interacting with others within VWs helps to improve real life social skills on this matter. In a similar vein, Babu et al. (2007) assert that avatar-mediated interactions can facilitate social verbal and non-verbal communication skills.

On the other hand, it is pointed out that SL is very time-consuming and has a high learning curve. Likewise, Thackray et al. (2010, p.151) found in their study that constructing anything or preparing learning materials demands considerable amounts of time. Funding support for those who wish to have a presence in SL, technical infrastructure, high demand hardware for graphic card and learning the interface could be seen as major barriers to adaptation of the platform in institutions. Moreover, some researchers such as Carr et al. (2010, p.19) draw attention to the initial period of using SL. Their study showed that many students who entered SL for the first time experienced what they call a “pain barrier moment"; it was difficult, frustrating, even annoying. Based on recent studies, identical cultural, technical, and economical matters therefore can be identified as main obstacles to innovation in VWs. While some learners may enjoy using SL as their learning platform and may feel SL enhances their learning process, some may find it difficult to use, of no value for teaching and learning and feel discouraged from having an immersive presence in virtual platforms. I discuss this further in Section 2.14 when I refer to students’ potential antipathy towards the environment. I now turn to the latest release, the Hype Cycle (Gartner 2003), and the diffusion of an innovation/adoption technology model (Rogers 2003) to indicate how and when VWs move beyond “hype” as well as how and why VWs may be embraced by educators.

2.7 The Hype Cycle and Diffusion of Innovation Model

Gartner's Hype Cycle was initially introduced in 1995 to illustrate the typical progression of an emerging technology from over-enthusiasm, through a period of disillusionment, to an eventual understanding of the technology's relevance and role in a marketplace or domain. Figure 6 illustrates current cutting edge technologies and VWs on the cycle.

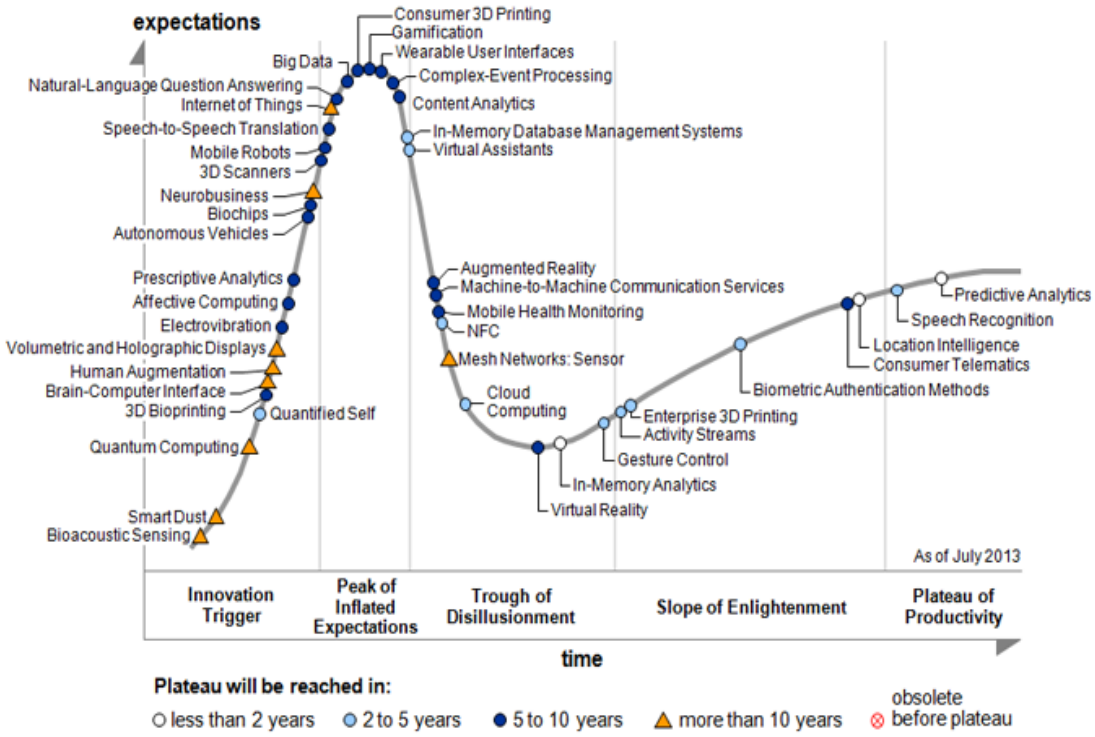


Figure 6: The Hype Cycle (Gartner, 2013)

The hype cycle graph is broken down into five phases:

- **Technology Trigger:** This phase includes a technological breakthrough, public demonstration, press release or other events that generate significant interest in an emerging technology.
- **Peak of Inflated Expectations:** This is the phase when the new technology takes its hold in the mainstream and generates a number of success implications with great excitement, much of it based on perceived potential.
- **Trough of Disillusionment:** In this phase, the new technology is characterised as having poor performance and the lack of a clear value proposition and eventually rapidly loses interest.
- **Slope of Enlightenment:** This phase includes more instances of how the new

technology can benefit individuals and best practices emerge about how to use it.

- **Plateau of Productivity:** This phase represents the beginning of mainstream adoption when individuals' benefits of the technology are demonstrated and accepted. The technology becomes increasingly stable and embedded into the marketplace depending on its established utility.

The graph gives a range of expectations in technologies from first awareness to eventually a settled level of productive use. Phase two of the hype cycle involves unrealistic expectations of the technology supplied, with excitement and novelty followed by a period of disappointment when those unrealistic expectations are not met. This indicates that VWs currently just passed the very bottom of the trough of disillusionment phase, which appears to suggest people are still rather disappointed with VWs but they have started to become positioned at the start of the Slope of Enlightenment phase and are closer to beneficial practice. However, while enthusiasm for the adoption of VWs in teaching is essential, the impact of unrealistic expectations may cause negative reactions in the third phase of the cycle. Besides, it is not exactly clear from the graph if it was referring to a virtual world such as SL, or MMORPG such as World of Warcraft. I take the position that it would be an ill-defined assumption that every virtual world is at the same location on the trough of disillusionment. For example, Kapp (2012) disagrees with Gartner regarding VWs location on the hype cycle and states that VWs are clearly appearing on the area of Plateau of Productivity at the cycle by referring to more practical, and applied implications. Nevertheless, the hype cycle is valid to give an idea in terms of anticipated expectations of VWs whilst it is doubtful whether the hype cycle is essential as a normative and predictive model.

On the other hand, the diffusion of the innovation/adoption of technology model proposed by Rogers (2003) is useful, together with contributions in the work of Geoghegan (1994) and Moore (2002) to this model, considering the hype cycle offered by Gartner. VWs are considered environments where students are asked to engage in a new learning experience, which may involve unexpected challenges and a degree of risk taking (see Section 2.14 for further detail about learners' potential antipathies towards VWs). Here the diffusion of innovation model is helpful in

seeking how educators perceive teaching in a virtual world. It is proposed that individuals adopt new technologies or innovations at different rates, depending upon their social and psychological characteristics. Five categories of adopters are identified as innovators (2,5%), early adopters (13,5%), early majority (34%), late majority (34%), and laggards (16%). Geoghegan applied these categories to educators as follows:

- Innovators ("techies"): individuals who are truly interested in the technology itself and understand the hardware and software requirements.
- Early Adopters ("visionaries"): individuals who explore new technologies as a way of increasing teaching effectiveness with a range of available methods. In this category, educators appear to be risk-takers who apply an interdisciplinary approach to teaching, learning and research. They often have considerable ability to use technology, although not to the same extent as the innovators.
- Early Majority ("pragmatists"): individuals who tend to be reasonably comfortable with technology, but are more interested in the daily business of teaching and research than in exploring new technological tools. Individuals are expected to take the success stories of colleagues into consideration and are willing to adopt tools which have been shown to be useful. In a general sense, pragmatists are more risk-averse, less likely to crossdisciplinary boundaries.
- Late Majority ("sceptical"): educators who adopt well-established technologies that come with complete support throughout the implementation. They appear to have little interest in technology and expect it to work or they tend to reject it.
- Laggards: Individuals in this category are considered the Luddites of instructional technology and are unlikely to adopt technology, except under pressure (Thackray et al. 2010, p.144).

Moore (2002) indicates there is a "chasm" between innovators and early adopters, and how and whether this chasm is overpassed determines whether or not a technology becomes a mainstream. Whilst Rogers argues the concept of the chasm, he acknowledges Geoghegan and Moore indicating that there are clear differences

between the visionary early adopters and the more pragmatic early majority. Jennings & Collins (2007, p.181) suggest SL, like other VWs, does not yet mainstream, and challenges them to cross the chasm to become mainstream in educational practices. The location of VWs on the Gartner's hype cycle also supports Jennings and Collins' argument here, considering the hype cycle reflects perceptions of a new technology to a point within Early Majority of the lifecycle including the "chasm". Zemsky & Massy (2004) further argue that for an innovation to move from "innovator" to "early adopter" status, a "dominant paradigm" needs to emerge. Arguably this has not yet been fully seen for VWs in the areas of implementing teaching and learning.

Thackray et al. (2010, p.145) suggest that educators are more likely to be characterised as early adopters and students as early majority, considering the characteristics of the different group as identified by Geoghegan, in the teaching and learning context of VWs. This finding is supported by Bowers et al. (2009), in a study of post-secondary educators' adoption of VWs, who found that 10.5% of respondents were innovators by having more than two years of teaching experience, and 69.8% were early adopters by having six months to two years of teaching experience. Considering educators as early adopters and students as early majority suggests that educators are in a position to implement changes in a formal teaching context, but students may be dissatisfied by any changes in their learning context even though they might be familiar with VWs. Having said that, Oblinger & Oblinger (2005) describe the older generation of educators as likely to be "digital immigrants" (Prensky 2001) who are less enthusiastic about implementing innovations into their teaching. However, the findings of Kennedy-Clark (2009) suggest that younger generation of educators are not more likely than older generation to adopt new ways of employing technologies into their teaching. As the adoption of SL as an educational environment moves further along the S-curve, it serves as a valuable complement for later adopters. Given the characteristics of educators in the teaching and learning context of VWs, I present key affordances for teaching and learning within VWs in the following section.

The concepts of "affordances" were originally developed by Gibson (1979) as a means of relationships between what an environment offers or provides for a being. Later Norman (2004) elaborated on Gibson's theory by distinguishing between

"perceived affordances" and "signifiers" and applied the theory to virtual environments and computer interfaces. Norman describes the user's "perceived affordances" of a technology as more essential to the designer while there may be an additional set of affordances. This suggests that the perceived affordances may differ across individuals. For educational purposes, it may not be necessary to identify all possible affordances of VWs, rather it is the blending of these in educational settings perceived by the individual. This outlines my understanding of affordances and provides a useful way to describe what VWs can offer within this study.

2.8 Key characteristics of educational practices within VWs

The initial discussion about VWs that I outlined earlier provides key characteristics of educational practices, according to Sampson (2012, p.216). These are:

- The Sense of Presence: Users apply presence via avatars, which enable them to manipulate identity either similar to or different from theirs. The concept of presence has been conceptualised differently in VWs and identified in three forms (Hodge et al. 2009). Those are: the "cognitive presence", which enables learners to understand experiences in VW; the "affective presence", which enables learners to feel emotionally engaged with the learning activities conducted in VWs; and the "social presence", which enables learners to socially interact and communicate via avatars. Accordingly, the concept of "co-presence" is characterised as the experience of "being in" VWs together (Dalgarno & Lee 2010). The experience of "being there together" is considered to be a key affordance of VWs.
- Immediateness: The immediateness of VWs is implemented within communication artefacts, allowing peer-to-peer, and peer-to-teacher real time interactions to occur. Furthermore, the immediateness could be seen subsequently as the ability to present outcomes of the student performances within VWs. Finally, other implications of the immediateness offered by VWs could be seen as the ability of exploring and interacting or manipulating virtual objects within the educational content.
- Adaptability: VWs provide opportunities that could be adapted to the students' preferences with real time educational practices.

- Real world simulations: VWs have potential to simulate places, environments and activities, which might be difficult, dangerous, or too expensive to be implemented in the physical world.
- New experience: VWs could be seen as a means of implementing impossible situations in real life giving learners the opportunity to explore environments.
- Experimentation: VWs offer opportunities to enable learners to carry out experiments that offer different learning outcomes. It is also possible to design and develop experiments in creating the virtual objects.

Kapp & O'Driscoll (2010, pp.56–57) examine and briefly summarise these as the "seven sensibilities of a virtual immersive environment", which is consistent with the characteristics of VWs as described above. These are:

- The sense of self.
- The death of distance.
- The power of presence.
- The sense of space.
- The capability to co-create.
- The pervasiveness of practice.
- The enrichment of experience.

Based on the affordances, which have been stressed above, the study of Ryan (2008, p.269) reveals some pedagogical applications of SL to the use of VWs in educational settings. Ryan's ideas help us to consider SL for learning by doing, learning by exploring, learning by collaborating, learning by being and learning by expressing. The phrase "learning by doing" suggests that the learning requires doing activities, which are normally performed in the real world. Such activities could potentially involve simulations, training, and so forth. The phrase "learning by collaborating" describes the learning that occurs when students work in groups or with peers on a task of enquiry. The phrase "learning by being" expresses the learning that is concerned with exploration of self and of identity. Such learning involves role-playing activities and performance of plays of actors. The phrase "learning by expressing" evokes the learning, which occurs by reflecting on in-world activities to the outside

world. That is, the learning results when the learners reflects on their understanding by externalising. As a consequence, the ideas stressed above help us to understand the pedagogy of learning with SL, which I will discuss next. The following section argues some key theories, principles, and assumptions behind learning pedagogies within VWs. Similarly, it aims to inform and locate this study within the exiting literature as well as to structure a foundation for my RQs. Although a large volume of learning theories could be adapted to effectively implement any educational technology, I specifically focus on the learning pedagogies in an online and f2f environment that require interactive social immersion in which students engage with cognition, peers and educators.

2.9 Conceptual Frameworks within VWs

A review of current literature indicates that Community of Practice (CoP) (Lave & Wenger 1991; Weller 2007; Wenger 1998), affinity spaces (Gee 2004), third space, (Oldenburg 1999; Bhabha 1994), and Connectivism (Siemens 2006) are relevant theories that have been applied to educational virtual environments. Teaching and learning is transferred by both informal (Marsh 2008) and formal (Webber & Nahl 2011) means in VWs. 'Informal exchange' suggests that learning occurs spontaneously, i.e. without implementing any disciplinary format when participants experience in SL, whereas 'formal exchange' has the sense that learning occurs in the context of education in which it is situated within structured content (the curriculum). This section argues that VWs could be characterised as bridging informal and formal learning. This could be seen, for example, with incorporating principles of informal learning mediated by VWs into a formal setting, or with drawing learning points from an informal setting to associate with the formal. In doing so, learning may become a much more dialectical experience for which educators can leverage teaching strategies. By crossing boundaries between the informal and the formal, and bridging them through VWs, educators may develop dispositions of augmenting students' learning experience.

2.9.1 Community of Practice (CoP)

The idea of CoP is explained by Wenger (1998) as groups of people who are willing to engage in a process of collective and interactive learning. He suggests that learning

occurs by doing, by experiencing, by becoming part of the process and belonging to a community. Wenger et al. (2002, p.4) elaborates this definition of CoP saying it is "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis." That is to say, a CoP is a sustained social network of people who have similar mindsets and share common values, experiences and knowledge of common practices. Lave & Wenger (1991) suggest the process of "legitimate peripheral participation" to describe how learners become members of a CoP. The idea of Lave and Wenger for CoP proposes that newcomers of the community have opportunities to learn from the more experienced individuals in order to enhance their understanding and skills. According to Wenger, a CoP shares a common domain of interest, engages in mutual activities and discussions and develops a joint practice formed with common stories, problems, and symbols. Consistent with this collective concept of social likeness, learning occurs through participation in a CoP and educators develop a set of dispositions reflecting attitudes, beliefs, and values shared to the CoP (Bronack et al. 2008, p.60). With the concept of CoP, teaching and learning appears to require collaborating, and exchanges of best practices with others. With this paradigm, individuals learn by role modelling, by performing and by receiving feedback (Hung et al. 2012, p.1073). CoP is not a new concept, but it seems that this model can be essentially adapted to SL by framing learning as a social process. However, this concept is seen to be problematic by Gee (2004). He argues that CoP attempts to label a group of people and is based upon being a "member" and that it is not clear how to draw boundaries around such communities. Gee (ibid) proposes the notion of "affinity space" instead of community. He suggests that the extent to which people are interacting within a space may not form the community but still their interactions may be fruitful, in what he calls an affinity space.

2.9.2 Affinity Space

Gee (2004, p.98) describes affinity spaces as spaces where participants interact with each other for a common goal, interest, and endeavour and shared practices in the first place, not primarily for shared culture, gender, ethnicity or f2f relationships. Therefore it is feasible to experience the communal without being a part of a community. That is why he prefers to call it an "affinity space" instead of "community". In essence, while Wenger uses space as a metaphor, Gee, in his concept

of affinity spaces, refers to literal spaces in which individuals are unified by a common endeavour to work together. In this way, I see Gee's theory of affinity spaces embodied for SL, wherein participants build up experience by practising or sharing their common interests and goals or simply by sharing a space. In the context of Gee's definition, participants feel a sense of belonging for a shared endeavour or organised experience to perform. It would also be of value to mention that much knowledge in affinity spaces often appears to be "tacit" which may be built up in practice but may not be explained entirely in words for which the form of SL is likely to be favourable.

2.9.3 Third Place

It is noteworthy here to indicate the difference in meaning between place and space . In VWs, place exists within a virtual space. Thus, an SL place cannot be physically experienced, however as meaning relates to the immaterial, a virtual space can be expressed as meaningful. Another way of conceptualising spaces here is the idea of a "third place" (Oldenburg 1991) and "third space" (Bhabha 1994). Oldenburg defines the concept of a third place as a social environment that "...hosts the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work." Oldenburg describes taxonomy of place wherein an individual's home is a first place, their workplaces are a second place, and their informal/social gathering places as a third place. Similarly, Bhabha echoes the idea of a third place and contributes to Oldenburg's argument by stating that boundary areas between two places are often a region of overlap. In other words, a mixture of characteristics of each of the two bordering places forms. In this sense, SL can be perhaps described using the concept of a third place as an appropriate model to build a community for leaners. Based on Bhabha's theory and Oldenburg's argument, SL may also be perceived as a third place where participants can build up different knowledge, learn reciprocally or create new ideas from the diverse cultural perspectives to foster broader and more fruitful interaction. For instance, the project of Peachey et al. (2008, p.206) indicates that virtual community in SL provides a third place for many which is a regular social facility that is neither at home nor at work. Peachey (2010) also argues that SL reflects the concept of third place providing valuable insight for creating a community of learners. In this regard, events such as art exhibitions, visiting speakers, collaborative builds, discussion groups, themed parties and in-world Christmas pantomime have been organised on the islands in their project. Bhabha's

work takes the idea of looking at learning as a social practice which articulates my own understanding of the way third place works for SL. Gee's description of the features of affinity spaces share features in common with third place to share and develop new ideas in SL. Furthermore, Childs (Kuksa & Childs 2014, p.93) introduces the idea of a "fourth place" which is not necessarily separated from a first, second, or third place. Childs (ibid) suggests that fourth places require a willing suspension of disbelief, a concept that I discuss in Section 4.3.1, from participants to feel fully immersed in the experience. Thus SL could be characterised as a fourth place in which the ability to engage belief may be required to participate. Within their description, individuals' characters can be carried across the threshold into a fourth place if they prefer so. The experience of a fourth place therefore may well have an impact on the experience of the participant's life (ibid, p.98). This view of a virtual space could also be considered to approach towards SL in order to understand participants' use of the space.

2.10 Emerging Learning Theories and Pedagogical Practices Adopted in VWs

Learning theories are typically introduced through instructions into respective disciplines, which are situated in the forms of curriculum. Such learning designs represent attempts in the practice of the disciplines. A description such as social constructivism is the prevalent theoretical framework embraced within VWs (Minocha & Reeves 2010; Duncan et al. 2012). Within the social constructivism paradigm, situated cognition, connectivism, experiential learning, problem based learning, and inquiry based learning are the emerging approaches in SL. Such pedagogic approaches might all justifiably be considered with disciplinary ways of teaching. I explain these approaches below.

2.10.1 Social Constructivism

Social constructivism refers to social interaction, collaboration and thinking. The theoretical assumption is that learners construct understanding by interacting and collaborating with others as well as with learning materials and tools. This suggests that knowledge is built through joint interactions and learning processes could be more productive through social settings by negotiation and sharing as learning is acquired on the social level in the first place then on the individual one (Vygotsky

1978). The role of educators is expected to be facilitators in the students' learning process, as opposed to disseminators of information. In essence, the constructivist theory argues that learning experience is best fostered through social negotiation and interaction.

Vygotsky's (ibid) "zone of proximal development" (ZPD) appears to have significant influence in design for learning pedagogies within this paradigm. This concept stresses the importance of students' engaging in collaborative activities where they have opportunities to interact with more experienced others. Accordingly, socio-constructivist learning activities embrace teaching strategies where students are expected to express their inner thoughts. The assumption is that during verbalising learning occurs. Students are basically encouraged to commune with peers to express their ideas so that they have opportunities to share, negotiate and reflect on their understanding. While some view that knowledge is gained individually and personally and transferred from learner to learner (Yilmaz 2008, p.166), participants develop meaning of knowledge within a social group from the constructivist perspective. VWs may be seen as a milieu where participants spend considerable time that could be a prerequisite motivator for constructivist learning as mentioned in Vygotsky's ZPD. In this regard, SL may be seen as one of the new instrumental ways that aims to revitalise the concept of social constructivism and to construct knowledge using virtual artefacts since, as Bronack et al. (2006, p.220) indicate, based on their experience, "virtual worlds offer participants a sense of presence, immediacy, movement, artefacts, and communications unavailable within traditional internet-based learning environments." Oishi (2007) endorses Bronacks et al. thoughts by suggesting that SL "adds a rich visual aspect to internet activities such as socializing, fact finding and doing business" which may also help to reduce the effect of feeling a sense of isolation. Within VWs, students are active participants interacting with content. Hence VWs place students into an active learning environment when used as a platform for teaching. VWs offer educators opportunities to provide a range of interactions, activities, scenarios that can be adapted to address a range of ZPD where students are challenged to understand new concepts. This approach advocates the use of a range of teaching strategies including group work, project based learning, peer tutoring, mentoring, and apprenticeships (Holmes & Tangney 2001, p.5). Unlike social constructivism, Girvan & Savage (2010) identify specifically "communal

constructivism" as a pedagogy to create a successful learning experience within VWs. Communal constructivism suggests that learners create virtual artefacts and objects for themselves as well as others to influence the learning experiences of subsequent learners in the environment. Within this paradigm, learning experience of the past groups of learners influence future learners to deepen their own understanding. This is particularly important to the design of learning experiences that engage and benefit other students, as well as themselves.

2.10.2 Situated Cognition

Cognition is classified as three different types: situated cognition, social cognition, and distributed cognition. Cognition as situated suggests that the social and physical contexts in which knowledge is construed are an integral part of learning (Brown et al. 1989). Situated cognition typically claims that learning is related to the practices and context where it flourishes, based upon the assumption that human thoughts and beliefs are considered to be adapted to the context in which they occur. Within this paradigm, the environment and social interactions in which students learn become part of the experience they gain and learning is inseparable from activity, context, culture and language. Cognition as social asserts that how people think and grow ideas are outcomes of their interactions and negotiations with their CoP or personal learning network (Wenger 1998). The key to learning the concept is sharing ideas with others for a common understanding of a concept. Cognition as distributed states that cognitive characteristics are distributed across all individuals involved in a learning situation (Lave 1993; Salmon 1993) which highlights that different aspects of knowledge come from various people within one's personal learning circle.

Situated cognition is clearly in line with constructivist propositions and basically integration learning and doing. From the situated cognition perspective individuals learn through experiences. Therefore situated cognition can be considered experimental. In this sense, Nelson & Ketelhut (2007, p.269) emphasise that "educational MUVEs have emerged in recent years as a form of socio-constructivist and situated cognition-based educational software." Participants can practice and interact with others and objects into VWs which may be impossible or tremendously costly to simulate in real life. To support this aspect, VWs can be adopted to implement authentic learning activities described by Lombardi & Oblinger (2007,

p.2) as “authentic learning typically focuses on real-world, complex problems and their solutions, using role-playing exercises, problem-based activities, case studies, and participating in virtual communities of practice.” In this regard, VWs may offer a social model of learning, including the ability for learners to repeat activities in a simulated and safe environment.

2.10.3 Connectivism

So far, a great emphasis has been placed on social constructivism to underpin the importance of social interactions in affecting individuals’ learning experience where learners are also actively involved in a participatory endeavour. In line with this approach, Siemens (2006) offers the idea of connectivism that characterises learning as a process of connecting information sources and specialised nodes, i.e., the right people in the right context. In other words, Siemens suggests that learning is not located in any given place but rather it consists of the network of connections formed from experience and interactions. Within this paradigm, knowledge can reside in non-human objects and in networks, learning can rest in diversity of opinions and capacity to know is more crucial than what is currently known (Siemens 2006; Downes 2005; Kop & Hill 2008). The principles of connectivism emphasise the distribution of learning across networks of individuals and things and the capacity of learners. The idea suggests that learners are expected to be fairly autonomous to be able to learn and engage in activities independently which is positioned outside the sphere of formal education. However, connectivism has been criticised as a learning theory regarding its contribution to existing theories (Verhagen 2006). Verhagen considers this concept as a pedagogical view rather than a learning theory, by arguing principles of connectivism are not sufficiently coherent to function the theory into practice. However, it is credited as a network theory of learning situated within a discourse of change in education (Bell 2011, p.103).

Connectivism is influential in the practice of teaching and learning within VWs. This approach can be implemented in SL as users of SL are interconnected in a way and they all influence each other. From Siemens’ perspective, SL enables users to connect with people who have diverse opinions and different links that may ultimately enhance the learning process of user and facilitate natural learning. Thus, learning may be constructed in SL in which participants represent their online identity in safer

ways, residents communicate and interact, and also users practice, explore and create. For instance, Loureiro & Bettencourt (2010) apply connectivism theory into learning contexts that they developed in SL, favouring its characteristics for the social interactions and the creation of links, connections and nodes.

2.10.4 Experiential Learning

The experiential learning approach is based on the idea that experiences of students essentially have an impact on the students' knowledge construction and understanding of the subjects. Experiential learning is, generally speaking, an approach that promotes learning by doing, which has been described as a promising learning style (Green 1995). In this approach the experience, as a key element of the learning, is placed at the centre of the learning process. This approach is based on the work of Dewey (1938), Piaget (1952), and Kolb (1984) with the underlying Neo-Vygotskian social constructivism assumption of learning "as the process whereby knowledge is created through the transformation of experience" (Kolb 1984, p.41) that is, construction of knowledge requires learners to be actively engaged as participants in the process of learning. Kolb's argument is important as it relies upon an engagement with social interactions and experience drawn from the physical world. However, what I mean by the "learners' experience" differs from Kolb's context, in which experience is entirely linked to lived experience. It is rather to harmonise with the understanding of experience, which may relate to virtual experience, tasks and activities between peers.

Experiential learning in HE is a practical approach through case analysis, role-playing, and live or computer-based simulations. Learners apply what they are learning to new situations with these activities and learn by doing (Correia 2014, p.118). Learning by experience is not a new idea and Bruner (1996), who is credited as one of the pioneers of constructivism, argues for the importance of learning by doing. Yet learning through immersive experience developed from the premise that there is potential for students to develop new abilities and knowledge from being immersed in virtual experience (Aldrich 2009). There is an argument that traditional teaching is largely mediated through written text or spoken word. However, teaching with VWs seems to form a different path in which the students have the sense of immersion, which is a feeling that transports users to another place (Fewster et al.

2011, p.218), of learning through experience.

Within the context of VWs, immersive experiences of the learners, their use of multiple media, and activities between peers lead to "transactional" learning (Barton & Maharg 2007) that is learning based upon transactions, i.e. tasks, activities. It is from this perspective that VWs are a good example of providing an environment wherein the tutors could configure the environment to augment existing (generic) teaching practice, i.e. lectures, with the ability to foster optimum learning process. To support this idea, for example according to White (2008) teaching and learning in VWs is "an experience". Teaching in these contexts provides less emphasis upon the schedule of the module and more emphasis upon sequencing the learning experience, meta-reflection, peer assessment and group work (De Freitas & Neumann 2009, p.343). It is therefore the task of the tutors to equip the students with the necessary skills to develop an understanding of their knowledge based on personal experience and through experimentation.

2.10.5 Problem-Based Learning

In PBL, students are encouraged to learn by addressing authentic and open-ended problems and reflecting on their experiences (Hmelo-Silver 2004). A typical PBL context incubates an experiential, social and active aspect of learning to enhance students' skills of critical thinking. In this sense, educators take experiential learning further and provide opportunities for learners to identify a problem, suggest possible solutions, test them and observe outcomes. This encourages students to think critically, evaluate solutions and analyse options as well as cooperate in teams to negotiate and analyse real-life problems.

Framing the problem can be enhanced in several ways in VWs. First, VWs allow diverse groups of students and experts in a problem-based scenario to come together without needing to organise a physical location. Further, VWs allow the use of multiple media sources such as audio, video, and printed materials. Providing a robust representation of a problem within an enriched environment can benefit students to comprehend the scenario and see the relevance of various contextual elements. In addition to helping students to have experiences similar to those in real-life contexts, VWs provide enhanced opportunities for educators to establish ill-defined problems

where students work through situations that might not be achievable in the classroom due to time, safety or logistics. In the context of PBL activities in VWs, students have a shared persistent space where they can also perform self-directed learning in order to discuss the design problem. PBL is a recognised approach within different disciplines, and the various aspects of PBL are explored in depth and eventually adopted in VWs. To give a few examples, Good et al. (2008) take PBL as a framing pedagogy to organise students to work in teams to design and build a learning experience in SL. Parson & Bignell (2011) use PBL for teaching Psychology utilising VWs within avatar-driven or information-driven scenarios. It is evidently characterised in their study that PBL is an ideal approach within immersive experiences. In the study of Esteves et al. (2011), students develop a project within SL through the use of LSL in combination with collaborative pair work to learn computer programming.

2.10.6 Inquiry Based Learning

The main characteristic feature of this approach is identified by Kahn & Rourke (2005) as involving the students with their discipline through self-directed inquiries in a collaborative and engaging way. In essence, it is learning and teaching approaches that are based on student-led inquiry and on deepening students' engagement with the discipline. With this approach, the students are expected to learn and build knowledge through guided exploration and investigation of the questions or problems that are established with the open ended nature either by the tutor, the student, or by negotiation among them. Unlike PBL, students or educators are expected to establish questions or problems. Students then draw on their existing knowledge and decide on the direction and methods of their inquiry with support mainly from their tutors. Within this process, students explore evidence or conduct experiments interacting with a variety of sources. Similar to other learning pedagogies, students reflect, discuss, critique, analyse, conceptualise, synthesise, and receive feedback. The basis of IBL suggests involving uncertainty and critiquing assumptions where students draw on their existing knowledge.

Levy (2008) identifies two main conceptual frames in seeking students' experience of inquiry, based upon a study of first year undergraduates from the Faculties of Arts and Social Sciences at Sheffield University, which are "exploring and acquiring existing

disciplinary knowledge" and "participating in building disciplinary knowledge". Levy's frames (ibid) focus on the way in which students are engaged with disciplinary knowledge. In the context of these frames, students explore questions, problems, or scenarios through existing knowledge or they produce new insights to create new disciplinary knowledge. Experiencing IBL in this way can help to scaffold students' skills and understanding. The application of IBL can be, for instance, shaped by exploring the knowledge base of the discipline through design questions within VWs. More specifically, the work of Papamichail et al. (2010) suggests that employing an IBL approach in SL evidently stimulates active engagement and boosts students' self-confidence. For instance, the study of Webber (2010) identifies that experiencing IBL within SL helps to scaffold students' skills and understanding of the subject. The value is located to provide insights into how students encounter and navigate different sources of information (Webber, 2013).

By this point, I emphasise an innovative culture of teaching and learning within VWs, which evoke paradigms such as learner-centred, self-directed, power and responsibility, immersiveness, embodied presence, social and peer-to-peer, networked, inquiry-based, collaborative, and co-learning. To amplify this point, Warburton (2009) suggests that SL can involve both formal and informal education with its affordances to encourage productive interaction, visualisation and contextualization, authentic content and culture, identity play, immersion, simulation, presence, and content production. These insights seem applicable to the use of VW in teaching. Conversely, I point out that the central obstacle for educators when they consider teaching VWs is perhaps their preconceptions that they carry with them. Next I specifically challenge embedded assumptions within teaching and learning experiences and discuss the concept of "pedagogy of uncertainty" and "cybergogy" that can be brought with immersive experience.

2.11 Pedagogy of Uncertainty

The idea of "pedagogy of uncertainty" is well explained by Barnett (2007, p.36) and key to understanding this concept is the idea that genuine HE helps students to live "purposively with anxiety" and able to involve and practise terms such as "risk", "anxiety", "disorientation", "thresholds", "liminality", and "uncertainty". At this

point, Bayne (2008) describes VWs as "uncanny space", which might not be necessarily comfortable, where the students might reflect in an unpredictable way. Bayne asserts that anxiety-provoking and the characteristic of uncertainty in the environment might provoke new and potentially uncertain teaching and learning experiences with the willingness to open to different ways of thinking. For Bayne, this is a new metaphor in which teaching practices are refreshed and often productive with the strange act of teaching. Bayne (2008, p.8) suggests that VWs "materialise this uncertainty in new ways by defamiliarising our sense of selfhood and our being together within the pedagogical context". For White & Le Cornu (2010, pp.193–195) this nature of in-world culture enables "disjuncture" to occur which could open out teaching opportunities to harness the students' learning processes. Disjuncture is an essential dimension of learning through VWs where learners are confronted with an experience, which challenges their understanding of concepts that they have developed up to that point.

2.12 Cybergogy

Scopes (2009) defines the terms of "cybergogy", an adaptation of pedagogy, which is more about the art of teaching, and "andragogy", which is more about learner-centred education, as being more appropriate for self-directed learning and refer to a mode of teaching augmented by the use of ICTs. The model of cybergogy is situated within a social constructivist epistemology deriving philosophically from the Vygotskian socio-cultural approach of learning. Her model was inspiring for this study, but it should be noted that the relevant work (Chase & Scopes 2012) took place after the data instruments for this research had been framed and therefore it was not influential on this study design. However, I use their model to infer and conceptualise the data, which emerged from this study in Chapter Four.

Scopes initially developed this model referring to Bloom's Revised Taxonomy (Anderson & Krathwohl 2001), the work of Churches (2008), which includes digital aspects of Web 2.0 technologies, and the ability-based model of Emotional Intelligence (Salovey & Mayer 1990), which indicates the ability to perceive and manage emotion. Further, she imported the "social" domain from Wang and Kang's Model of Cybergogy for Engaged Learning (Wang & Kang 2006). Following their

paths, she later designed a set of categories of learning activities for unique immersive experiential learning experiences. Chase & Scopes (2012) applied this model to introduce building classes in SL for architectural design students, yet others have also embraced their frame to design teaching strategies in VWs (see Sharma 2012; Woollard 2012). Woollard (2012, p.42) further includes the aspect of protection of the learners from inappropriate content and contact to his understanding of cybergogy. Woollard (ibid) requires educators to have procedures in place in case learners take actions if they feel any threat or uncertainty about the identity or intentions of avatars they meet.

In this model, learners are expected to internalise knowledge within social processes. That is to say, knowledge and social interactions are inseparable and can prompt collaboration. Chase & Scopes (2012) state two core components of this model that are "learning archetypes" and "learning domains". These learning archetypes were originally denoted by Kapp & O'Driscoll (2010) to emphasise the possible learning affordances of VWs. Learning archetypes are categories of learning activities, afforded by VWs that engage four learning domains; "social", "cognitive", "emotional", and "dexterous". These learning archetypes provide a conceptual framework to support learning activities. I now explain these categories in turn.

The five categories of Learning Archetype are:

1. **Role Play:** It is regarded as a role to engage individuals to immerse themselves within an alternative form, living or inanimate, and interact with people through portrayal of emotions. For instance, role-play allows learners to experience an opportunity to dress their avatars in historical clothes and represent a figure from the past. Besides, they may re-gender their characters in terms of physical appearance and seek to play stereotypical persona roles to understand interpersonal differences that attribute gender perception. This archetype is framed as "Free Form" where participants act out a scenario spontaneously, "Structured" where avatars act out a scripted narrative, "Dramatised" where participants experience an authentic scenario, and lastly "Morphic" where participants experience a scenario by interacting within 3D models.
2. **Simulation:** This represents real or virtual conditions to explore and experience the complexities of real world issues. For instance, learners are

provided with 3D models of objects to implement authentic experiences. This archetype is framed as "Conceptual Orienteering" where participants compare similarities and differences in various situations, "Operational Application" where participants practice skills needed within SL, such as navigating, manipulating etc., and lastly "Critical Incident" where participants practice activities to be considered dangerous or difficult if conducted in the real world.

3. **Peregrination:** This involves travelling to locations in which learning circumstances might take place. It is sub framed as "Treasure Hunt" where participants explore the environment for specific information, and "Guided Tour" where participants visit locations of general interest.
4. **Meshed:** This provides opportunities in which individuals or groups come together to achieve desired aims and outcomes. For instance, the course content is structured in small group forums and learners are encouraged to communicate their ideas and opinions to peers and the tutor. This frame is sub framed into "Co-Creation" where a couple of participants work in collaboration to design or produce a new object, "Group Form", where a large numbers of participants come together to share or present information, "Small Group Work" where small numbers of participants come together for the purpose of brain storming or discussion, and "Social Networking" where participants utilise modes of communication such as text chat, voice, IM etc., to share information and exchange ideas.
5. **Assessment:** This offers evaluation and feedback as part of the learning process. Learners are supported to evaluate the perception and understanding of materials. This archetype is framed as "Formative", "Summative", "Criterion", "Performance", "Review", "ePortfolio", and "Learning Contract" (Scopes 2009, pp.33–43).

Scopes refers to Bloom's revised blended taxonomy of the four learning domains, which is the second core component of the Cybergogy model, and focuses on the desired learning outcomes with different levels of implementation. This component gives a pedagogical understanding of levels of learning in the avatar-mediated VWs (Table 2).

Level of Implementation	Cognitive Domain	Emotional Domain	Dextrous Domain	Social Domain
Level 6	Creating	Influencing	Mastering	Channeling
Level 5	Evaluating	Empathising	Naturalising	Networking
Level 4	Analysing	Engaging	Articulating	Affiliating
Level 3	Applying	Self Regulating	Developing Precision	Communicating
Level 2	Understanding	Attending	Manipulating	Contextualising
Level 1	Remembering	Perceiving	Imitating	Personalising

Table 2: Blended Taxonomy of Learning Domains, with Learning Outcomes

This model of Cybergogy enables tutors to enhance learners' experience and immersion into 3D virtual environments by engaging the four sensibilities of learners. The Cognitive domain is addressed from the perspective of Bloom's Taxonomy by considering Web 2.0 applications to accommodate desired learning outcomes. Cognitive aspects of learning indicate the factors that initiate an individual's construction of knowledge. It focuses on the ways an individual enhances personal relevance and meaning through knowledge construction. In this cognitive process, individuals' prior knowledge/experience, learning goals, learning activities, their cognitive styles such as verbal-imagery or wholist-analytic (Riding & Rayner 1998) and individual differences are important factors. At the basic level of its implementation, learning outcomes are expected to reflect the individual's ability to archive and recall information. At the top level of its implementation, learners are required to demonstrate abilities of knowledge construction/destruction and abstract conjecture.

Emotional aspects of learning indicate the parameters that contribute to a positive educational experience or attribute to a negative educational experience. This domain includes techniques for self-motivation, change adaption, feeling and behaviour that may affect the learning process. Within 3D virtual environments, for example, "a fear of falling from a height or a moment of aesthetic appreciation contributes to a deepened level of immersion and learning" (Scopes 2011, p.11). Similarly, Kapp & O'Driscoll (2010, p.63) state that experiences in VWs can cause real physical

reactions such as increased heart rate, laughter and perspiration. Learning outcomes in this emotional domain require individuals to acknowledge internally their own emotional reaction within the fundamental level, whereas they are required to become capable of influencing the emotional experiences of others within the top level.

The dexterous domain within the cybergogy model indicates the process of dexterity such as where an individual manipulates virtual objects using a keyboard and mouse and functions affordances of different versions of the virtual world viewers. This also includes management of environmental conditions to secure events and activities from undesired disruptions. For instance, learners can be escorted to other locations in SL to acquire free clothing and accessories to further personalize their avatars and progress in dexterous skills by practicing navigating camera controls, flying, walking in-world and manipulating with virtual objects.

The social domain within this model has actually been adapted from Wang & Kang (2006), whose model of cybergogy was attempted to establish engaged learning by accommodating web-based social media such as blogs, wikis etc. along with affordances of VWs into classroom activities. Within higher levels of implementation in the social domain, learners are expected to form useful affiliations individually and as a group, as well as to develop networking and connections among others.

This model of cybergogy offers opportunities to combine VW affordances in conjunction with real-life learning within each domain, at all levels of implementation. However, the main concern in terms of designing teaching within VWs is to ensure that the designed learning activity is the finest choice for the desired learning outcomes. Scopes (2011, p.14)indicates three essential principles to consider the whole effectiveness of teaching content within SL, which are: if the use of SL is necessary, if the activity is sustainable and manageable in the environment, and if the learning activity produces the desired learning outcomes in a timely, economic and effective manner. Likewise, learners are expected to act and interact toward the desired goal, fail, and try again in a different way to demonstrate the optimum learning experience that occurs within VWs. In essence, adherence to these principles requires ensuring that the learning intervention is addressing the most effective and efficient value of pedagogical need. Once it is satisfied that designing a context within

VWs is optimally suited, the next step is allow learners to experience and internalise the learning objectives.

There are other guiding principles clarified by Kapp & O'Driscoll (2010, p.73) to consider and to include learners into the learning experiences. The first principle is that participants are placed in the centre of the learning experience within the immersive environment. This is followed by creating the optimal authentic and engaging context in which the learning experience occurs. Once the appropriate situational context is formed, sustained and engaged interactions within VWs are expected to establish. To help establish a flow of interaction and engagement, participants are provided to explore the context within a discovery-driven manner along with set of minimum guidelines. Next is to consider the learning objectives to embed within the form of experiential activities. In VWs, learning experience is considered within action-oriented nature and learners are expected to perform the given exercise and improve their ability by trying and trying again. Providing immediate constructive feedback is a core component of this principle. Ultimately, learners are encouraged to work together to fulfill the task and learn from one another through collaboration.

Similar to Scopes' categorisation of learning archetypes, Kapp & O'Driscoll (ibid, p.80) introduce eleven learning archetypes that have been identified within 3D environments and mapped into four categories. As I stated earlier, these categories are initially modified from Scope's learning domains and renamed in an attempt to broaden and simplify the detailed work of Scopes. Therefore it can be easily observed that some archetypes overlap and crossover with Scope's definitions outlined earlier in this section. I outline these categories and describe the corresponding archetypes within each associated category in the following paragraphs.

The first category they clarify is "agency" which means the ability of a participant who operates the avatar within VWs to take action. Under this category, they identify "avatar persona" and "role play" archetypes. Avatar persona is the ability in which learners act within the form of avatar. It is a concept of personalising the avatar and thus building the identity within different forms, including fiction, or non-humanoid ones. This provides a sense of self that helps students to communicate and interact with each other. It is considered that the third-person perspective has some

educational values over a first-person perspective typically experienced in a classroom. As participants' experiences within 3D environments are through their avatars within the third person perspective, individuals' behaviour is expected to change over time by viewing them performing that behaviour in third person. Thus, the avatar persona is considered as an essential component of the learning experience within VWs. Role play is defined similarly with Scope's definition of role-play, which is to take a role in an alternative form, living or inanimate, to perform and understand aspects of that role. It is a concept related to situated learning that propels students into various roles which they never might have experienced before. This provides an enrichment of experience to students that might encourage them to participate in activities.

The second category is "exploration" in which learners are encouraged to navigate and examine the environment. Under this category, they identify "scavenger hunt" and "guided tour" archetypes. Scavenger hunt is an activity wherein individuals interact with others and move through the environment to seek specific information. It is a concept of using relevant information to reveal hidden educational outcomes within VWs. Learners are expected to develop understanding based on moving from virtual place-to-place and collecting information or clues. This helps students to connect their understanding with the new knowledge by including teamwork and gaming elements. It can be used to orient learners to a new space in which they will be experimenting. "Guided tour" has similar attempts, with the idea of "scavenger hunt". Students are directed to relevant locations to visit, providing text information to study. Therefore, a guided tour is a situation in which learners are encouraged to understand the connections between locations and features within an area along with escorted guidance. It provides opportunities to learners to explore spaces that might otherwise be limited due to safety or restrictions in the physical world. Self-guided tours are also types of guided tour, which take place with the aid of pre-programmed heads-up displays that guide the participants.

The third category is "experience" in which learners are encouraged to engage in activities, and interact within the environment. Under this category, they identify "operational application", "conceptual orienteering", and "critical incident" archetypes. The key to operational application archetype is that learners are

encouraged to manipulate objects and apply their skills in an attempt to gain proficiency in their performance, which is a form of learning by doing. It is related to using tools within VWs to manipulate or operate objects and experience their behaviour in such conditions. Learners practice and apply their understanding to operate instruments that are produced in VWs. In doing so, students are expected to enhance their operational and navigational skills. Conceptual orienteering is situations in which learners are provided with examples of the concept and allowed to determine the aspects that describe the concept by comparing similarities and differences. It aims to situate students into an engaging role to experience and extract core attributes of the given concepts and then compare these attributes to other concepts. Teaching concepts involves providing learners with examples and non-examples of the concept and then asking students to determine attributes that explain the concept. This may also include data visualisation to understand the concept, with graphical images. Critical incident is situations in which learners are expected to practice the activity and recall their prior knowledge to solve the problem. The activities of critical accident aim to place students into situations in which they solve an issue, incident or a problem by using their prior knowledge. This could involve situating students into critical incidents without considering safety issues. Learners are asked to deal with unexpected or dangerous incidents when practised in the physical world.

The last category is "connectedness" in which learners are encouraged to interact with each other to build knowledge and understanding. Under this category, they identify "co-creation", "small group work", "group forum", and "social networking" archetypes. The concept of co-creation activity is about designing a new object within VWs by working in teams or groups, where each student brings their ideas and collaborates with each other. That is, co-creation involves learners in working together to construct new items within 3D environments. Learners are expected to develop their creation and personal skill sets. Small group work is where learners gather together and exchange ideas for the purpose of sharing and presenting information. Learners use different communication modalities to participate and contribute to the activity. Group forums archetype is where a large number of learners gather together to share and present information. This may include, for instance, addressing the whole class to introduce the activity and provide information. Social networking is where learners are encouraged to connect with one another in an

attempt to share and present information within 3D environments. Learners are required to exchange information and ideas within a team or group and foster cooperation. Such activities could be used to engage students in discussion, brainstorming, or round table meetings.

The 3D learning archetypes described above are essential to understand the principles of experiencing within an immersive environment. The archetypes provide the practical learning designs that enable the approach to teaching within SL. I identify how this model can be used as the foundational frame for teaching and learning in-world. There are other studies that present learning activities and learning designs to employ using SL or other VWs. For example, Salmon et al. (2010) develop a five-stage model of learning in SL, designing "SL-tivities" to illuminate scaffolding learning. Their model is beneficial to developing learning activities in SL. Likewise, Ryan (2008) outlines 16 pedagogical approaches that can be implemented in VWs, based on the data gathered from surveys, interviews, informal conversations, observations and reflective journal entries. Other similar attempts have been performed by a number of studies such as Kay & FitzGerald (2013), and Duncan et al. (2012) to classify educational practices within VWs. Types of educational activities identified in these studies are somewhat similar to the educational categories of Scopes (2009) and Kapp & O'Driscoll (2010), describing a broad educational affordances of VWs. Based on the conceptual frameworks, which have been stressed above, Lim (2009, p.7) characterise the main educational affordances of SL as being the "Six Learnings of Second Life", which are "Learning by exploring", "Learning by collaborating", "Learning by being", "Learning by building", "Learning by championing" and "Learning by expressing". Dalgarno et al. (2013, p.36) identify ten major categories of learning and teaching applications for which VWs are being used across HE institutions in Australia and New Zealand, based on data collected from 117 respondents and 13 interviewees who broadly represent different disciplines. Their categories include "place exploration, concept exploration, task or skill practice, rope-play, gaming, communication, instruction, slide show, machinima, and building or scripting". In many of the studies carried out in this area, the concepts of affordances and benefits of VWs have centred on these aforementioned educational activities and practices.

Next, I discuss another factor, which is Continuing Professional Development (CPD), when educators approach teaching within VWs before going further about students' potential resistance towards the environment. This is particularly important when educators negotiate or collaborate in the virtual communities to construct their teaching frameworks within VWs as well as to sustain their motivations to participate in VWs other than the requirement of a class activity. Developing strategies within VWs to enhance educators' teaching may provide ongoing collaborative practices that educators find meaningful and relevant opportunities for immersion. Besides, the review attempts to indicate that changes in teaching strategies can occur by discussing the implementation of professional development in VWs.

2.13 Continuing Professional Development in SL

There is currently a trend towards online learning to provide opportunities for teacher preparation, and educators are no exception to the need to engage in ongoing development to cope with challenges in rapidly changing digital technologies. What is more to the point, Merchant (2010) highlights that there would be a need for changes in teacher preparation, professional development (PD), or CPD, as well as wider educational reform if VW practices were to become mainstream in teaching and learning. The concept of CPD is described, within the modern student-centred educational approach, as a process that fosters the ability to critically examine the teaching practice as well as to cope with and adjust to ongoing changes (Levy-Feldman & David Nevo 2013, p.154). This definition underpins three key components of CPD, which are experience, reflection and construction (Burden 2010, p.149). CPD plays a key role for educators to maintain and improve professional competence and keep up-to-date with new technology and practices. Further, there is great emphasis on being educators who see themselves as learners and take responsibility for their own professional learning instead of using CPD organised by others for educators. CPD that offers content in a teaching-by-telling mode of practice is no longer adequate to accomplish change in teaching practice. CPD strategies that are based on inquiry models are recognised as being essential for educators' development (Darling-Hammond 1998).

Action Learning (AL) is acknowledged as a highly effective learning strategy for fulfilling active, inquiry-based educator CPD that includes inquiry and reflective practice (Downes et al. 2001) and it has been used essentially as a CPD strategy in teachers' learning (Stark 2006). The phenomenon rests on the premise that the learner improves by questioning insights based on experiences to find solutions to related issues. Unlike traditional learning, the process of identifying and implementing courses of action and seeking for solutions, which includes exploration, planning, action and reflection perspectives, are at the heart of this learning strategy. In this paradigm, learning is centered on the need to find a solution to a real problem and individual development is key, as well as finding the solution to the problem. The learning process takes place within an action learning set. The set is facilitated by an action learning advisor, whose role is essential, particularly at the beginning of the process, to increase cohesiveness, confidence and commitment (Spence 1998).

AL is also applied in VWs as a CPD strategy that is based on a high level of interaction and social presence. In other words, allowing educators to practice CPD efforts within VWs potentially may provide opportunities such as innovative ways to accomplish travel, flexible time, engaging speakers, variety of modality, and professional learning networks. The ability to bounce thoughts and ideas around with like-minded individuals, regardless of geographical distance, can be seen as an important aspect of this sort of CPD experience. Orwin (2011) investigates the affordance of VWs for CPD, using an AL approach, by designing a prototype learning environment in SL, and demonstrates that the AL program is a useful and effective development experience. Specifically, providing flexibility, global access, a larger pool of participants and guest programs, and reducing the time lost to travel, minimising the interruption to work for in-service CPD, are prominent outcomes in Orwin's study.

More specifically, Gregory et al. (2011) design VirtualPREX in VWs (referred to as professional experience) for pre-service teachers to apply pedagogical theories in an authentic teaching situation. VirtualPREX provides practical opportunities for the pre-service teachers to engage in activities to practice their classroom teaching skills via "role-play, learning, teaching, evaluation, reflection and self/peer/educator-assessment" (Gregory & James 2011). By doing so, the pre-service teachers aim to be

more aware of their skills before they are placed in the classroom. There are other studies that focus specifically on educators' experiences through their participation within VWs in order to sustain CPD such as Girvan & Savage (2010) and Parson & Bignell (2010). Within these studies, the extra pressure and the lack of understanding of the possibilities afforded by VWs have been highlighted. This suggests that pedagogically meaningful implementation of VWs still remains a major challenge for educators (Sampson 2012, p.212). Kallonis & Sampson (2010) propose models of teachers' CPD design for educators regarding educational practices using VWs as part of their CPD. In so doing, they aim to support teachers through their CPD to explore VWs, understand the concepts related to them and acquire competences for teaching within VWs. More precisely, this model consists of seven phases that feature different educational activities and their relevant VW functionalities. Those are:

- First phase: Substantive input, such as the presentation of new concepts and discussion of the new concepts, aiming to identify rationales for implementation.
- Second phase: Direct analogy, such as presentation of the analogy and discussion of the parts where the analogy connects with the traditional classroom.
- Third phase: Personal analogy, such as reinforcing the analogy by expressing new potential possibilities.
- Fourth phase: Comparing analogies, such as brainstorming on the analogy similarities by describing and justifying similarities.
- Fifth phase: Explaining differences, such as brainstorming on the analogy differences by describing and justifying differences.
- Sixth phase: Learning the basics, such as collaborating with a colleague to create their own presence within VWs and providing immediate and constant feedback. This also includes exploring VWs to understand how to communicate, use, or manipulate the objects as well as self-assessing on the exploration to indicate educators' competences.
- Seventh phase: Generating analogy, which includes dividing into groups, organising and presenting educational activities, as well as commenting on the activities and on the module (Sampson 2012, pp.225–226).

Although they define their model as in the novice level, it has been designed and developed for educators' CPD to help them understand the unfamiliar concepts presented in VWs as well as design educational activities dependent upon their previous experiences and ideas. In addition to this, a great number of CPD events are available, including informal discussions and entirely virtual conferences with refereed papers, which the majority of them are free of charge. For instance, some virtual communities such as "Quest Atlantis Global Teacher Community", "New Media Consortium" (NMC) and the International Society for Technology in Education" (ISTE), "Jokaydia" have been designed to provide a venue for educators to network and learn together, and support a range of regular CPD opportunities for educators, including talks, presentations and social events as well as newbie tours, in-world workshops, symposia and regular round table meetings.

Considering the conception of professional development and VWs, Webber & Nahl (2011, p.9) identify key values of SL for CPD, specifically in the context of library and information science (LIS), as:

- Having experts across the world for speakers and audience.
- Networking without travel cost and time restrictions.
- The ability of having a sense of social presence.
- The variety of formats of events such as conferences, tours, themed and commemorative events, training courses, and interactive exhibits.

Their identification of SL for CPD suggests that educators have opportunities to meet academics from many countries, and learn from each other formally or informally. Being active in SL also allows attending many more conferences, discussion series and academic meetings in a socially rich and engaging environment in order to create sustainable collaboration and interaction, which enrich professional lives of the individuals. SL can offer ability to access experts, discussion groups, ongoing seminars, presentations of best practices and lesson plans that could be an ongoing and intensive way of fostering ideas which are linked explicitly to the educators' subject area.

In this section, I conceptualised educators' teaching and learning approaches in HE. Two major orientations are foregrounded, which are teacher-centred and student-

centred forms. I then introduced and discussed the concepts of VWs, a graphical view of maturity and adoption of VWs in the marketplace using hype cycle and the process by which VWs are communicated through educators over time. It was highlighted that VWs appear to have just passed through the disillusionment area hype cycle, whilst this position is considered problematic and misleading within educational contexts. Educators appear to be categorized as early adopters on the diffusion of innovations model. Following these, I introduced a comprehensive connectional framework that combines aspects of teaching and learning experiences in VWs, using the featured learning pedagogical approaches. Specifically "cybergogy model" was discussed to indicate educators' strategies and its implications in VWs. I then discussed the concept of CPD for educators within VWs. I presented some professional interest groups that host professional activities, events and meetings in SL. Next, I discuss the concept of learners' anxieties and antipathies that may occur during the immersive experience and continue with the typology of students' resistance towards the environment.

2.14 Students' Potential Resistance towards VWs

It has been recognised that there are certain barriers to adopting VWs in HE. For example, Warburton (2009) identifies eight main types of obstacles in using SL for teaching and learning. These eight challenges consist of: technical issues, identity issues, cultural issues, collaboration issues, time issues, economic issues, standards issues, and scaffolding issues. Likewise, Kelton (2008) briefly outlines the challenges into four main categories, which are perceptual, technical, operational, and pedagogical. Also, Kirriemuir (2007a, 2007b, 2008a, 2008b, 2009a, 2009b, 2009c, 2010a, 2010b) well identifies problems relating to adoption of VWs in HE in the snapshot reports for VWs in education.

Immersing within VWs may lead to feelings of stress, or anxiety for some students based on the existing challenges. For example, technical barriers such as platform performance, lag, crash, insufficient graphic card capacity, the Internet bandwidth, as well as steep learning curves, confusion, disorientation and loneliness could be seen as factors that discourage students from in-world experience. Further, immersion within VWs might be inauthentic for some students and they may not develop any

sense of connection with their avatars, and may not experience presence (Childs 2011; Childs et al. 2012; Trinder 2008). Accordingly, the feeling of exposure through being embodied within VWs may lead to a sense of disquiet for some students. Kuksa & Childs (2014, p.146) indicate that one in four participants appears not to feel immersed in such experiences and this inability to connect with VWs might be a new form of disability.

Therefore there is a risk of losing or excluding those who choose not to engage, which might be a great challenge to overcome for educators. Wood (2010, p.251) argues that students' resistance to the environment has impacted notably on their capacity to immerse themselves in VWs. This suggests that the primary causes of this anxiety are perception of ability, control and discomfort with new social experiences (Trinder 2008, pp.356–358). There is perhaps a sizeable minority of the students who resist the idea of using a VW for their learning experience and most are not likely to have negative issues. However, these arguments prompted a parallel strand to this study that is worthwhile following, which is to identify educators' strategies, if any, and their positions and how to address students' resistance towards learning experience in VWs.

Students' negative reactions and antipathies towards immersive experience raise issues of the ethical implications of VWs and address different learning styles in a general sense, which might not fit with the idea of using VWs for some. Needless to say, many of these VWs are not dedicated to learning and teaching, but are social environments inhabited by a wide range of communities of individuals. Likewise, VWs are the environments where avatars are represented as being embodied within the space, identity and social life of users. This sense of embodiment can also be disconcerting and challenging for students. An attempt at educational practices and experience in-world may therefore consequently carry potential anxiety between students and present ethical dilemmas for educators. Furthermore, it is an essential factor for educators to establish the common ground teaching style and apprehend differences in students' preferences in order to limit placing students at risk in their learning experiences. This study, however, neither aims to establish ethical guidelines nor addresses different learning styles and preference in VWs, rather it is my attempt to argue educators' strategies if they come across any negative reactions from

students. Peachey & Childs (2011) investigate the issue of discomfort at being in an unfamiliar environment and, pointing out that this category by nature might be arbitrary to some extent, identify the typology of students' resistance as:

- Students who are not embodied, as they did not find the experience in VW immersive.
- Students who equate virtual with inauthentic, as normative values such as relationships and identities are manipulated and may be seen as morally wrong.
- Students who disapprove of games, as they perceive VWs as games and only for young people.
- Students who disapprove of the culture and social norms of the virtual world, since they object to the behaviour of the other residents.
- Students whose need for realism and challenge break from all constraints of physical.

Their classification of student reactions to experiencing in VWs helps to understate sources of these attitudes, which educators then need to minimise or at least reflect on. By knowing these potential barriers and pitfalls, educators can develop strategies to support students for engagement in VWs. Once students move along an attitude continuum from having concerns towards favouring, the potential for those students to develop their competencies for immersive experiences may improve.

2.15 Summary

The focus of this study is to explore the teaching experiences of educators and their strategies within VWs in blended situations. Further, this study aims to examine whether teaching in VWs gives them insights to improve their classroom pedagogy. In so doing, I also examine how educators learn how to approach teaching in VWs, as well as how they overcome challenges such as learners' resistance towards the environment.

This literature review takes a critical look at pervasive approaches to teaching and learning in HE. These approaches can be seen as variations on one central theme, explicitly that it is the learner who has maximum control over their learning. Thus,

educators' dispositions to teach in particular ways are dependent on the idea of helping students change concepts and facilitating them to become independent learners. This also includes recognising students' specific learning styles and the pedagogy of teaching is matched to the preferred style of the learner. In this paradigm, the emphasis is placed on the learning and students' role, rather than on teaching or the teacher. One way to confirm the learning-centred orientation lies in educators' conceptions of teaching as an interactive process that involves mutual negotiation. What also underpins this orientation to teaching and learning is the perception of learning as a challenging process to promote students' motivation, interest and enthusiasm through the use of engaging tasks.

Furthermore, blended learning within the learner-centred orientation can offer an essential opportunity to fully integrate teaching strategies within an immersive experience in VWs. This study considers the contention that employing a variety of media and methods, most often of a blended nature, that is with a combination of online and f2f modalities, plays a critical role in enhancing teaching activities. When f2f content is blended with innovative student-focused methods, VWs seem to offer opportunities by involving students in the experience itself. Furthermore, the Hype Cycle (Gartner, 2013) model together with the "Technology Adoption Lifecycle" model popularised by Rogers (2003) has given some insights for VWs. The technological adoption lifecycle model suggested that typical profiles of educators who embrace VWs in teaching are early adopters who appear to realise the capacity of VWs, foresee the challenges and identify the features to bring about the immersive experience for their learners. The conceptual framework to identify the relevant concepts therefore was influenced by these bases in order to include a more coherent review of the literature.

The primary teaching method referred to in this study is "cybergogy", which includes highlighted learning pedagogies in the context of VWs, as I have found it to be an essential way of engaging students in the immersive experience. Further, teaching in VWs within HE may be challenging and possibly includes the risk of alienating some students. The fact that the identity of learners is a core component in the learning experience in a virtual world leads me to consider strategies to minimise learners' antipathies towards immersive experience, addressing how identity is impacted by

immersion. Furthermore, educators need to improve their teaching skills if the VWs practices would become mainstream in teaching to provide a rich immersive environment for cooperative learning activities. One way to provide this is to practice CPD within VWs in order to sustain pedagogically meaningful implementation of VWs as well as to foster social presence in-world. Encouragement of educators to develop a new pedagogical culture for VWs in teaching can be sustained by integrating self-development into their CPD planning.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

In this chapter, I explain and justify approaches that I took to answer my RQs. That is, I outline the theory of generating knowledge, the consideration of the best ways, methods or procedures to gather, analyse, and interpret data that produced the evidence base for this study. This discussion begins by considering the philosophical basis for qualitative inquiry. Following this, I discuss the overall design and structure of the study, advantages and limitations of each data collection method, and the benefits of combining data collected via different methods. I continue with ethical and sampling considerations that arise in these approaches. I finish this chapter by identifying the stages in the analysis process, which are data management, coding, selection of themes, checking for credibility, and data presentation.

3.2 Philosophical Assumptions within Qualitative Inquiry

The research design process is not separated from its philosophical assumptions in a qualitative inquiry. Furthermore, researchers bring their own set of beliefs to the study under investigation, and these shape the conduct and discussion of the study. It is expected that an authentic study will clarify these assumptions, make paradigms explicit in the writing up and raise awareness of the influences of the research process. In this section, I briefly discuss assumptions and paradigms available in qualitative research and give theoretical frameworks that influence the content of the study.

Creswell (2007, p.15) identifies five principle philosophical assumptions that determine qualitative research, which are classified as ontological, epistemological, axiological, rhetorical, and methodological. Additionally, Creswell notes four other principal sets of beliefs that researchers bring into the qualitative research, which are post-positivism, constructivism, advocacy/participatory, and pragmatism. When qualitative research is conducted, we maintain assumptions that constitute our stance towards the research context. I address these assumptions and paradigms in turn in the following.

- The nature of reality (ontology), which is a matter of questioning what exists and what it means for something to exist and embracing the idea of multiple realities.
- How the researcher knows what they know (epistemology), which is a study of reflection and understating of the nature of reality.
- The role of values in the research (axiology), i.e. the researcher acknowledges that research is value-laden and includes biases.
- The language of research (rhetoric).
- The methods used in the data collection process (methodology) (Creswell ibid, pp.16–19).

In terms of practical implications of these assumptions, I intend to gather quotes from participants to provide evidence of different perspectives (ontology) and spend times in the "field" with participants (epistemology). Further, I explicitly discuss my position and include values that I bring into the study (axiology). I employ the language of qualitative research, such as using metaphors (rhetoric), and eventually I follow a path of data collection and analysis process (methodology). Considering these assumptions, I acknowledge that I take a particular stance within the study of teaching in VWs in blended situations.

Further to these assumptions, Creswell (ibid, pp.20–23) elaborates the paradigms, which shape the study as:

- Post-positivism attempts to involve a scientific approach to research and its cause-and-effect orientation by putting an emphasis on empirical data collection.
- Social constructivism seeks to develop understanding of participants' experience by forming through interaction with others and by looking for the complexity of views.
- Advocacy/Participatory has a tendency to involve an action agenda that may influence the lives of participants. It focuses on bringing the changes in practices.
- Pragmatism focuses on the outcomes and the practical implications of the research. Therefore, the important aspect of the research is the problem being studied and the questions asked about the problem by employing both qualitative and quantitative methods.

Although the four paradigms given above may intertwine in some ways and reinforce each other, I identify my approach for this qualitative research as social constructivism. That is, I characterise my research as framed within a social constructivist orientation by focusing on the specific context in which participants live or work, SL in this case. I now outline an overview of my positionality and its potential influences in the production and interpretation of data about teaching in VWs at different stages in the research process.

3.3 Positional Journey to the Research Topic

Sikes (2004) states that positionality reveals one's stance as a researcher. In other words, positionality reflects a researcher's fundamental assumptions concerning social position such as class, gender, race, political allegiance, values and so on. Wellington et al. (2005, p.99) argue that a researcher's background unconsciously influences the process of knowledge production. These arguments have been approved by a growing number of scholars who acknowledge that the researcher's positionality influences his/her conduct of social investigation (Winter 2000). In light of these assumptions, I explain, in the words of Sikes, "where I am coming from as a researcher" (2004, p.18) and problematise my positionality in relation to the research being conducted in the following paragraph.

To reflect on my positionality, I first state the role of my educational background. I graduated from a university where I was taught technical subjects to educate students in technical based institutions in Turkey. The biggest problem that we faced as learners was that the majority of taught courses remained "in theory" rather than "in practice" due to lack of sufficient tools or materials. Further, there was not any social facility to share or to discuss what we learned with peers. As a result, all we learned was forgotten in a short time without being fully absorbed. Consequently, I developed a great interest and enthusiasm in investigating an environment that may meet the demands of the learners as well as enhance their learning experiences. I also sought ways of delivering education off-campus and for a large number of students. My Masters study represented a part of this research, looking for a digital solution. I investigated the current status of VLEs in order to discover to what extent they are student-centred learning and to what extent they meet the demands of today's

learners, since VLEs promise to transform education and provide students with the necessary skills and knowledge for the challenges of today's society. Upon completing my dissertation, I found that students:

- Prefer f2f learning as they think they may learn better. Yet, they prefer to use their VLE as a supplement to their learning.
- Believe that they benefit from online content but this does not make much difference in their learning.
- Use their VLE as a repository for documents in learning and teaching courses as well as a store for various digital learning resources.
- Feel their VLE to be an isolated environment rather than social (Ata 2009).

All these findings urged me to carry out a more detailed scrutiny of an environment where both distance and on-campus students socialise, participate, explore without feeling isolated, and practice. Therefore, I decided to do my research on teaching and learning in VWs in the context of HE.

I am Turkish and my first language is Turkish. VWs tend to be dominated by English speaking countries and western culture; in particular, the culture of SL is based on US society. Thus, it is possible that my interpretation of observations and activities in SL may be influenced by my cultural background. In the same spirit, my ontological and epistemological positions may impact on the nature of the research. I explain the methodological framework of the study in the light of these assumptions in the following subheadings of this study.

Mccaslin & Scott (2003) describe "The Five-Question Method" approach to selecting an appropriate technique on the determined topic for five of the prominent qualitative methodologies, which are: biography, ethnography, phenomenology, grounded theory, and case study. They tell us that biography seeks to reveal the meaning of one individual's lived experiences. Phenomenology seeks to discover the "essence" of experiences of a phenomenon for some individuals. Grounded theory seeks to develop a theory that is grounded in the data to explain some actions, interactions and process. Ethnography seeks to reveal experiences of different cultures or social groups by living or observing within the field and, finally, case study seeks to investigate what actually occurs and is experienced in a single lived case with set boundaries. Building

upon these assumptions, I was keen to answer my RQs with virtual ethnography. After my upgrade viva, I realised I could not carry out a full ethnography and instead decided to carry out a case study, but also sought to give this study an ethnographic perspective. I considered that, arguably, this was a better way to frame the study, which I argue extensively in the next sections.

3.4 Shifting from Virtual Ethnography to Case Study with Ethnographic Perspective

Before I describe the design of the study, I first elucidate the shifts in methodology of the research in this section. This study was originally framed as a virtual ethnography. This is because my initial aim was to participate, together with other students and educators, in SL to investigate different facets of their virtual experiences and to interpret directly their competencies, perceptions and behaviours in their learning and teaching experience. I therefore sought to elicit, observe and analyse patterns of their beliefs and behaviours, to investigate the ways they operated and the decisions they took in SL. Since the focus of the study is an attempt to deduce how educators and students use SL in their teaching and learning, an empirically driven qualitative, reflexive and experiential approach capable of providing comprehensive understanding of the informants' attitudes, actions and behaviours in a cultural and social environment was required: an ethnographic approach (Denzin & Lincoln 2005). To do so, I needed to determine possible institutions within which I could work. The factors to identify these institutions were, primarily, tutors' active usage of SL in their courses and, secondarily, accessibility to the institutions.

By the time I competed my upgrade paper, it became apparent from the literature on the subject that there is plenty of evidence to suggest that students who feel presence strongly in VWs are satisfied with their learning activities. That is, students' sense of presence correlates directly with the effectiveness of educational activities conducted within VWs (Montoya 2008; Childs 2010). It also became evident that the range of learning activities that were available, and the institutions that were accessible to be investigated, were limited. After the upgrade viva and during the main study, therefore, this qualitative study was altered to focus specifically on a case study to investigate educators' experiences of VWs in their teaching and to elicit theoretical and pragmatic insights in their teaching strategies in blended situations. In addition, a

parallel qualitative component, interviews, was added to the study that provided another source of insights to articulate perspectives of educators in teaching within VWs. Interviews were not directly part of the class I examined (see Section 3.9 for further details), yet they helped employ a variety of methods to gain richer data for the main RQs.

The focus of the study has therefore altered, from gaining perspectives of learners in VWs activities to educators' teaching pedagogies within VWs. Yet, the study still entailed a degree of immersion as a participant observer both in the classroom and SL and the study design has an ethnographic texture (Green & Bloome 1997). I view this part of the methodology as having an ethnographic texture instead of being a full ethnography since they argue that doing ethnography "involves the framing, conceptualising, conducting, interpreting, writing and reporting associated with a broad, in-depth, and long-term study of a social or cultural group,…" (ibid, p.183) Typically, this "social or cultural group" is expected to be together for an extended period of time, so that their shared language, patterns of behaviour, and attitudes have emerged into a discernable pattern, which I cannot fully grasp without immersing with a lengthier effort. Instead, Green and Bloome suggest the concept of an "ethnographic perspective" (ibid, p.6) to study particular aspects of everyday life and cultural practices of a social group. This helps me to look at the relationships between the context the data emerged within, and the data itself. Following Green and Bloome, I bring this perspective when I consider focusing on the value of the teaching experience to describe educators' responses to new pedagogical efforts in the classroom and SL. It could be argued that, even looking through an ethnographic perspective, VWs must still somehow be related to everyday life, I consider that VWs are accessible for a close study of how the teaching is constituted, in relation to VWs and the classroom pedagogy, using ethnographic texture methods. I therefore felt that the methodological implications of bringing virtual ethnographic texture and a case study into dialogue with each other were more useful as a set of research techniques. Below, I describe the overall design and characteristics of each, virtual ethnography and case study, methodologies sequentially.

3.5 Virtual Ethnography

The origins of ethnography lie in anthropology and it has historically been the methodology of anthropology, with the pioneering study of Malinowski (Young 1979) at the beginning of 20th century (Hammersley 2006). Since then, ethnographic studies, mainly of a qualitative nature, have spread through social science. Further, with the growing number of internet-based studies, new research areas and approaches have emerged in social studies. This is because human communication and interaction have been reshaped by the vast impact of the Internet over the last decades (Markham 2005, p.793). Therefore, the social implications of the Internet have changed the nature of ethnographic studies and virtual ethnography has increasingly been embraced by a great numbers of researchers with the advent of studies of ethnography through the Internet (see Domínguez et al. 2007; Hine 2000; Leander & Mckim 2003; Marcus 1998; Markham 2005; Wittel 2000).

This new form has emerged principally with the great amount of electronic communication environments as a way of interaction, yet having roots into assumptions on which ethnography is based. As a result, numerous qualitative and quantitative methods including interviewing, focus groups and surveys have been re-constituted to function in online social settings (see Bardzell & Odom 2008; Browne 2003; Crichton & Kinash 2003; Markham 2005; Stewart & Williams 2005; Teli et al. 2007). Hammersley & Atkinson (2007, p.3) describe the role of the researcher, the ethnographer, in light of these assumptions as:

> The ethnographer participates, overtly or covertly, in people's daily lives for an extended period of time, watching what happens, listening to what is said, asking questions; in fact collecting whatever data are available to throw light on the issues with which he or she is concerned.

This is the point which articulates my position, which resides in a kind of in-between world both as an observer and a participant to authentically understand the ways in which people interpret the environment with which they engage and organise their lives. Thus, my role is to observe and analyse practices that take place in the environment, and to present them in a new light. Yet, it is arguable that my behaviours, beliefs, and assumptions may lead to misunderstandings the setting, thus eventually influencing the validity of the study since ethnography relies mainly on observation. This may be the case in particular if the researcher only spends a

relatively small amount of time in the setting.

Some (Teli et al. 2007) view the term "virtual" as problematic and they claim that virtual ethnography has lost much of its heuristic power. Instead of "virtual ethnography" they suggest *'cyber-'* ethnography that deals with both online and related offline situations. Despite their critique, I treat "virtual", "cyber", and "online" as equivalent, whilst some may develop circumstances in which their meanings differ. Besides, Boellstorff et al. (2012, p.4) find labels such as "digital ethnography," "virtual ethnography," and "internet ethnography" misleading as they believe that ethnographic methodology can be adopted smoothly into VWs, and core conceptual understanding of ethnographic research paradigms are fundamentally similar in these spaces, yet I follow Hine's description of virtual ethnography as it has its own set of considerations.

3.6 Challenges and Promises of Virtual Ethnography

One of the key considerations in this sort of study is online identity. The majority of problems related to identity on the Internet are concerned with the nature of online presence, as it may be difficult to sustain online communication effectively not only in the absence of non-verbal cues but also the lack of f2f and physical interaction in text-based CMC. In addition, as Markham (2005) points out, ensuring anonymity as protection could lead to problems in establishing authentic identity. These issues can actually be somewhat overcome in VWs where it is possible to establish genuine relationships by presence of avatars that ultimately help build trust to sustain varying degrees of communication. Avatars could be seen as digital representations of users that are relatively models of their desired or fantasised appearance and behaviour. Therefore, communication and interaction between informants could be replicated in avatar form, which helps create identity. Perhaps more interestingly, graphical communities allow the user to explore the landscape visually, which was until now only imagined within text-based environments (Williams 2007, p.9). This implies that spaces, buildings, objects and participants do not need to be imagined by the user as they are represented graphically. However, Williams also highlights the importance of textual conventions. In Williams' view (ibid, p.15) "Text remains a key part to interaction within Cyberworlds and it still retains its idiomatic form." Hammersley

(2006, p.5) indicates one of the main problems in this approach as the assumption that people's behaviours and beliefs in virtual platforms also represent exactly who they are and what they do in the rest of their lives. As Hammersley stressed, this perception may be misleading since observations of the researcher are the result of a limited period of time and activities. In addition, there may be problems with sampling and generalisation, since ethnographic studies are considered to be detailed but small scale research. Therefore, it could be argued that my outcomes may not be representative for wider samples and the data is not generalisable, perhaps not necessarily, beyond the boundaries of the institutions with which I work. However, according to Boellstorff et al. (2012, p.180) valuable insights can be formulated and generalised by working in a comparative mode that is, analysing similarities and differences between this research and other research. By this means, I am elucidating my understanding of sampling and generalisation influenced by their position.

3.7 Virtual Ethnography in SL

Prior to addressing the issue of 'how' virtual ethnography could be used to examine the teaching process in VWs, it is perhaps useful to firstly address 'why'? According to Hine (2000, p.14), the Internet can be seen as a place in which culture is formed, or as a product of culture that is a cultural artifact of two aspects of cyberspace. Thereby, the potential of using virtual ethnography for this purpose seemed to be to explore and unpack the virtual experiences of educators in VWs in the similar ways of Hine`s feeling on the Internet. This is because VWs can be platforms where users live their virtual everyday lives, to construct knowledge by participating or to enhance their cognitive skills since they may act as they are in the physical world and educators adopt these environments into their classroom pedagogy for a quality teaching experience. Similarly, recent theorists emphasise that learning, knowledge and communication are constructed and distributed in the social and cultural context (Hutchins 1995) and research into them is inseparable from the context.

The ethnography of SL may also provide an opportunity to consider whether using the virtual environments significantly is about acquiring the cultural competences within which it makes sense. In other words, it may also reveal whether the social environment of VWs can be judged as linked or bounded to social spaces and formed

or sustained through social relations of the users within the environment. From a perspective of virtual ethnography, community development within SL and belonging to a virtual world community may benefit users to maintain relations between them. Hence, it is my expectation that ethnographic understanding of teaching within SL allows me to understand motivations and implications of interactions in SL, to focus on the value of in-world experience and tutors' reactions to new pedagogical efforts.

3.8 Boundaries of Virtual Ethnography in the Study

The boundaries of the study may be shaped by the researcher's choices about how to find places, whom to interact with, when and where to conduct interviews and so forth. In this sense, one could argue that boundaries are not mainly determined by location, but rather by interaction. Thereupon, as the researcher, then as a participant observer, the study may be considered as virtual travelling practice. Furthermore, perhaps more importantly, I may not have to seek connections and relations or may not have to imagine the field solely in discourse within graphical online environments, as the field is presented into three-dimensional landscape with physical boundaries. Nevertheless, Moschini (2010, p.45) affirms that the location where educational activities take place in SL has tremendous affect on the experience generated. That is to say, the right type of venue is a key factor for educational research, which may require dedicated spaces.

So far I have discussed characteristics of virtual ethnography and the ways it can be used in VWs. Nevertheless, the purpose of this study also links closely with the case study approach. This is because, case studies are considered to expose in depth, rich and holistic information for the study by examining a "bounded system" (Stake 2008, p.121) such as a person, a group, an activity or a process (Creswell 2003, p.15), which is a detailed examination of a single instance or an instance of a class of a phenomenon (Merriam 1998, p.153), i.e., unit of analysis (Miles & Huberman 1994, p.25). I explain how the research design fulfils the circumstances required by the case study paradigm (Creswell 2003; Merriam 1998; Stake 2008) following discussion of the blending of the two approaches in the next section.

3.9 Case Study

Case studies reveal comprehensive data to understand the context and process by forming links between causes and outcomes of a phenomenon, e.g., a particular event, situation, program, or an activity, within a bounded system through answering questions of "how" and "why" (Merriam 1998; Yin 2003). Thus, the case study method is relevant when the research addresses either a descriptive question, "what has been happening?" or an explanatory question, "how or why has it been happening?" is posed. The case study enables the researcher to examine various phenomena, such as individuals, communities, organisations, relationships or programs. The case study is also quite relevant when the boundaries are not clear between the phenomenon and context (Yin 2003, p.13). Although Stake (1995) criticises a case study approach as a methodology, but a choice of what is to be investigated, others view it as a strategy of inquiry, a methodology (Flyvbjerg 2011; Merriam 1998; Yin 2003).

Case studies can have multiple complementary units of analysis, i.e. "embedded subcases" (Yin, 2012, p. 8) within an overall holistic case. Within this perspective, the holistic case is about an exploration of teaching in the context of blended learning. This includes teaching experiences of educators as one unit of analysis and educators' perceptions in the context of their teaching in SL as another unit of analysis, which together form an embedded, single-case study. A case study was chosen as the case involved perceptions and teaching experiences of the tutors, but the case could not be considered without the context, the classroom and VLE, and more specifically the virtual setting of SL. It was in these settings that teaching experiences and strategies were developed and utilised. It would have been impossible for me to have a holistic picture of experiences of the tutors without considering the context within which it occurred. As I deal with the educators' teaching pedagogies within SL in blended situations, particularly their experience of the teaching in which they take part in SL, a case study is capable of consolidating my understanding of the study, by putting a greater emphasis on the phenomena under study with its depth and intensity principles. Case studies allow examining the phenomena within its real life context by enabling the researcher to employ diverse methods that produce various sort of data such as narrative, text or numerical. Having multiple sources of data is beneficial to producing a decent case, which I discuss in Section 3.12 later. The case study method

is thereby a highly convenient approach to investigate and infer the ways in which tutors implement teaching in blended situations. Therefore, it is probably best to synergize and interweave the two approaches in the research process. For this reason, I emphasize virtual ethnography as a set of ways of exploring, knowing and acting in SL and a case study as a set of ways of describing, understanding and explaining. I believe that the ethnographic texture approach allows me to explore a sense of cultural and educational practice in the context of everyday life in SL; whereas, the case study approach allows me to look through tutor's eyes for a deep understanding of what they actually do in terms of teaching in SL and f2f. Thinking metaphorically in this way helps me to conceptualise the data analysis process at a higher level.

The literature provides a large number of examples of use of case methodology in social research. Yin (2003) classifies case studies into three categories, which are exploratory, explanatory and descriptive case studies. Descriptive studies seek, as it suggests, accomplishing descriptive analysis whereas explanatory studies aim to yield causal explanations, yet exploratory studies look for the depth of understanding of the incident. Besides, Stake (1995) adds three others: Intrinsic, instrumental and collective. Stake suggests that an instrumental case study could be used to gain insights and understanding of a specific event or phenomenon. As stressed earlier, this study embodies two essential components of the case; it focused on particular educators within a specific module in an educational institution, and it sought to understand educators' teaching strategies and pedagogy. As it looks for gaining insights into pedagogical principles in blended situations, this study could be described as an instrumental (Stake 1995; Stake 2008) and exploratory case study according to Yin's classification (2003). In this case study, I adapt and follow the case study structure of Guba & Lincoln (1994), which is: defining the problem, describing the context, the issues and discussion of the "lessons learned". I also reflexively bring my personal experiences into the discussion and advance practical implications of the study in presenting Chapter Four.

3.10 Challenges of Case Studies

A common criticism of a case study methodology is that a single case is limited in its ability to provide a generalising conclusion. In defense of this criticism, Yin (2003) argues that the aim of the research ought to establish the parameters so as to provide acceptability of the study and disproves the criticism by stating that generalising from case studies depends on the making of logical inferences. In other words, findings ought to be judged on an analytic rather than statistical basis and emphasis ought to be placed on applicability and transferability of findings. A number of single cases could be examined, as Merriam (1998, p.154) suggests, to strengthen the results of the study and to increase generalisability of the findings as well as to broaden the scope of the study. However, focusing on a single case forced me to devote careful attention and to delve into the class with whom I worked. Likewise, due to the small size of either the case(s) or the study population, the strength of a case study as a legitimate research methodology has been questioned, specifically by Stake (1995). However, referring to Yin (2003), a credible case study can be designed and carried out by establishing strong practical procedures. In the next section, I explain how I approached and ended up with the module I studied.

3.11 Selecting the Module

This unit of analysis focused on educators' experiences of IL in the context of their teaching. Theoretically, this embedded subcase contributed to the achievement of the purpose of this study in five ways:

- Firstly, I specified the tutor of a class who was actively involved in SL for both personal interests and educational aims. The educator has a deep knowledge of the competencies to employ SL in her teaching. As one indicator, the institution has its own island that was founded in 2007 and the educator has been teaching within SL since then. Another is that the educator maintains several blogs and other social network accounts such as YouTube, and Flickr where she reflects on and shares her experiences with SL.
- Secondly, the tutors have broad experiences of developing and delivering the module within a blended form. That is, the context and nature of the module is shaped around f2f contact with their tutors and peers, wide range of generic and subject relevant resources to accomplish their learning tasks and the

virtual world of SL. Such learning and teaching experiences enable me to identify the scope of the study.

- Thirdly, the IBL is the primary approach that is taken in teaching for the activities and the additional focus of the environment has links with CPD. That is, IBL is seen as a means to engage students deeply with IL modules and scaffolds their skills and understanding. Then, the environment is also seen as a means to maintain improving skills and keeping up-to-date with developments related to educators' professional lives. One of the good indicators is that the island holds monthly journal discussion events where participants share their conceptions and learn from each other which also could lead to developing a feeling of solidarity and inspiration amongst participants. This allows the environment to be recognised by others and makes me feel more enabled to scrutinise the island.
- Fourthly, the class I examine has already been identified as worth investigating by several other academic studies (Alarifi 2008; 3DVLE Project 2010; Webber 2010). This means that the set of activities in this module can be identified as being already deemed interesting educational practices. This helps me justify considering the module as my embedded subcase.
- Fifthly, pragmatically this selection assures accessibility for the study. Module educators are identified as key informants suitable for the purpose of this study. The experiences of educators are used as key constructs or paths through which IL is explored and illuminated. However, I also use other sources of evidence such as module outlines and documents, and several methods of data collection such as observation and interviews to gather needed data for this study.

Such characteristics make the class an interesting focus, as developing holistically deep insights into teaching VWs can provide educators with approaches to challenge their teaching assumptions and implement novel teaching strategies. I summarise the research territory and the area of the study in Figure 7.

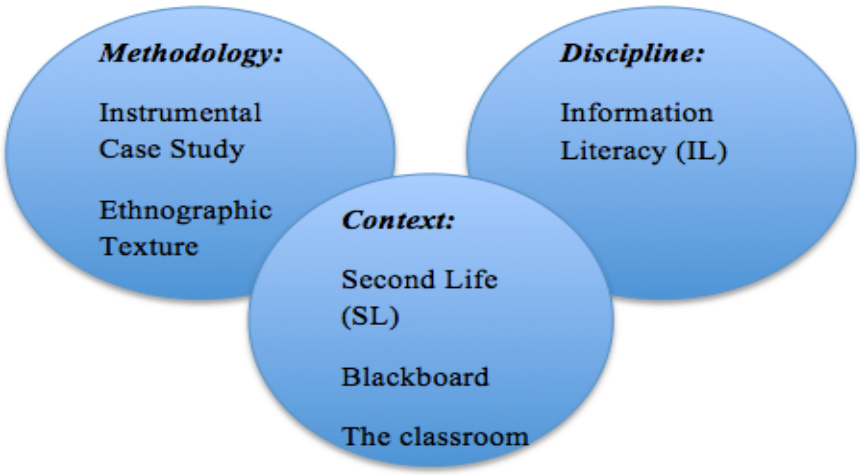


Figure 7: Research Territory and the Area of the Study

3.12 Procedures and Methods of Data Collection

The research design involves a combination of classroom and SL observations, interviews, elicitation interview, snapshots and filed notes to gather rich data which help me develop understanding of activities, practices, ideas and strategies that take place within SL. In this section, I start with a discussion of ethical issues and considerations for the research. I then outline, justify and describe each method used. That is, I explain the methods that I use to address my RQs. Next, I discuss phases of data analysis process along with the research and interview questions. Following this, I explain what I found in the pilot study. I finish this section by elaborating on how I approached and derived the codes.

3.12.1 Ethics in VWs

It is considered that the advent of VWs raises new ethical issues for conducting research in them, by becoming a primary means of communication and social interaction. Ethical concerns over VWs are concentrated mainly on recruitment of participants, privacy, confidentiality, anonymity and reputation of users and their avatars, data collection and storage, retaining anonymity, and approval of the research by the ethics committee of institutions. One of the issues is that raised by Williams (2007, p.17) on the nature of communication, which is privacy and publicity in VWs. It is feasible to collect data and leave without contributing to in-world activities by altering the appearance of avatars or by recording behaviour and interactions covertly. In this respect, Williams draws attention to ethical considerations in graphical

environments and he emphasises that the researcher is required to take a sensitive approach to observation so that the distinction between public and private graphical spaces in online virtual environments is clear. In other words, conversations held within private spaces need to be conducted with a degree of sensitivity to maintain the anonymity of the informant and permission from the informer ought to be taken, should conversation be a part of analysis. This problem can be handled by seeking informed consent from participants. The second issue is then related to the circumstances of informed consent. The common sense is that it needs to be sought for revealing information to the public even after certain precautions have been taken for anonymity of participants (Sharf 1999). Thus, I clearly state in the consent form that their words and images may be used within a PhD thesis and academic papers. Similarly, The British Educational Research Association (BERA 2004) provides a set of ethical guidelines for educational research that concerns informed consent, deception, right to withdraw and ethical respect for any persons involved in research. Likewise, there are several guidelines to be followed when the research is conducted in VWs. For instance, Terms of Service agreements, known as TOS, consist of information about acceptable behaviour in virtual communities. Moreover, there are sets of documents available at SL website for privacy, community standards which address the issues of intolerance, harassment, assault, disclosure of one's personal information, indecency, online safety and so on.

Accordingly, potential participants were informed about the nature and the purpose of the research study to seek willingness of them (Appendix 1: Information Sheet). Taking into account the research structure, I informed consent from the research participants via in-world tools such as notecard giver tools for the interviews. If the participant declared through an instant message that they understood and agreed to participate, then that was taken as their consent (Appendix 2: Consent Form). Each participant was informed that the findings of the study might be publicised, albeit neither the institutions nor individuals are named or identified. Therefore, I did not require participants to provide their real names and did not attempt to verify the participants' real identities, albeit the identity of avatars can be verified with users' permission. This could have created severe ethical problems in terms of privacy and consent but I always notified respondents that they were not named and identified in the study. However, after the analysis process, educators in the class indicated that

they prefer to be identified with their SL identity in this study, so in this case I used their SL names where appropriate. All participants were also assured that they could withdraw, i.e., have the right to teleport out of the research situation if they were uncomfortable with any of the procedures or questions from the research at any point (Stanton 2010, p.12).

Further, I indicated my position as "researcher" in my HUD that was over my avatar's head and disclosed sufficient information about the study and myself by completing an associated page of the avatar profile that could be viewed by anyone. Interviews did not contain any questions of a troubling nature and request any responses of illegal or unethical behaviour or cause damage to their reputations. The research was also subjected to the University of Sheffield's ethical review procedures (Appendix 3: The Ethic Review Approval Letter). Finally, I conducted all the interviews in IM to maintain the privacy. Having said this, I followed the Boellstorff et al. (2012, p.135) view which is, "it is legitimate to see subscription-based virtual worlds as having public areas where it is not necessary to have every person in an interaction sign an informed consent form…" in the case study. While I gathered the consent from the tutors when I interviewed them, I did not gain their consent or the students' consent when I took some snapshots during the activities. Data analysis took place and was stored in a password-protected folder on a secure and encrypted laptop. In order to provide an accurate reflection of a conversational process, spelling, grammar and punctuation was not standardised within quotations from the data.

Additionally, some ethical considerations may arise due to the fact that the module educator was one of my supervisors within the present study. It is difficult to problematise how much this working relationship has influenced the findings. To describe and illuminate the cycle of the supervision relationship, the supervisory pattern, for the most part, was central to open communication, challenging and away from explicit hierarchy. My ideas were constructively criticised on a regular basis and my first supervisor often led discussions, whilst my second supervisor might take a "back seat" so that a new viewpoint could come forward. In this way, authority or control was exercised by negotiations and suggestions rather than through formal leadership roles. For example, I was the teaching assistant in the class in which I shared my ideas and comments about the learning activities or our practices.

Likewise, both my second supervisor and I were sharing our ideas, experiences and comments in VWER meetings where every participant has a similar level of equality to share, interact and communicate. Similarly, I was moderating some of the SL journal meetings and elicitation interviews. Thus, in-world as well as in supervision sessions, there was always a group of at least three participants; the dynamics were therefore open and collaborative.

3.12.2 Participant Observations

What is meant by participant observation can be clarified as: to engage critically in activities taking place in the setting and to observe the activities, participants and aspects of the virtual environments so as to experience first-hand the social place. In some cases, I engaged in the "unobtrusive observer" position where I had an access to the environment in which I did not participate and was "present at the scene of action but does not participate or interact with other people to any great extent" (Spradley 1980, p.59). Such participation did not necessarily mean I needed to be a practitioner of the environment I studied. However, I built my participant observations on a flexible manner. In other cases, I took a position where I actively engaged with activities to understand and experience the incident. To give an example, I was involved in the activity in which students discussed and expressed their opinions and, as an observer, to give some feedback when they conduct the practical activity in SL. I took field notes while I was observing and some snapshots to discuss in detail with the module tutors. In essence, field notes were descriptive representations of activities and experiences of the module tutors. Furthermore, perhaps interestingly, in many cases SL allowed me to fully participate with a greater degree of engagement than in the physical world context and was more demanding in terms of skills acquisition. For instance, when I conducted elicitation interviews, which I detail next, I was able to elaborate what some snapshots, and a specific chunk of conversation data that took place in the activities, mean to the module tutors in SL.

3.12.2 Interviewing and Elicitation Techniques

Interviewing was essential as the interviews helped me provide elicited narratives from the module tutors and allowed me to explore prioritised issues in depth both in the classroom and SL. In other words, I delved into the nuances and particulars of their teaching pedagogy in the classroom and SL through interviews. A further

strength was that interviews can easily be blended with other data gathering methods for affirmation, triangulation, or to represent as broad a picture as possible of the experience. I interviewed Sheila Yoshikawa and other module tutors in text-chat to expose how they felt regarding bringing SL into the classroom to teach the module. That is, I endeavoured to identify their emic understanding of developing teaching pedagogy around this module. The interviews took place in SL at different times and lasted between an hour and two hours. Figure 8 indicates the interviewing that took place in my office in SL with the tutors.

Figure 8: Interviews with Sheila Yoshikawa, Pancha and TutorG

Perhaps more importantly, I also conducted an elicitation interview with Sheila Yoshikawa, and Pancha later in SL, in an attempt to articulate their experiences and various aspects of their involvement in the module after the individual interviews. Thus I prepared some picture boards with snapshots from the IL module in SL in order to trigger participants' memories and remind them what had been done. I then attached notecards to these picture boards, which involved a certain chunk of conversations with regard to activities that take place in SL. The interviews were again in my office in SL and lasted roughly two hours. Figure 9 illustrates the elicitation interview process with module informants.

Figure 9: Elicitation Interviews.

To ensure that the experience was as productive for the informants as possible, before setting up the interview, I carefully considered the design of the space, which was likely to influence the elicitation interview dynamic. I therefore did not put any complex objects in the room except the picture boards and notecards. To better understand the methodological niche which the elicitation interview holds, this gave me an opportunity to ask specific questions that I was not able to find out with individual interviews and allowed me to elicit diverse opinions amongst the informants. I found the elicitation interview a very productive and reflexive process in this sense.

3.12.3 Sampling Process of In-Depth Interviews

There is no defined number of participants that would make this study viable, as the goal of the research is to generate a rich exploration of how SL settles within educators' teaching process. I chose participant observations, semi-structured interviews as the methods to gather teachers' perceptions and experiences on the use of SL in their teaching. For the main body of the interviews, I set up semi-structured interviews with the educators in the SL environment from different disciplines, institutions and countries. Participants were self-selected on the basis of who was available and accessible at the time of the data collecting process. They were all active and had experience teaching in VWs. I questioned interviewees who taught

both in the classroom and SL and utilised VWs as an integral part of the course. Participants were identified from VWER community and its Facebook Group Page. Around sixty potential participants were emailed and informed of the purpose of the study and interviews and the protection of their identities using pseudonyms. Nineteen participants agreed to contribute to this study. This was my strategy for the purposeful sampling of individuals. The sample can be characterised as an opportunity sample, since participants were recruited from the VWER community members with whom I have an established relationship or those who responded to a request for volunteers to participate in the research (Lewin 2005, p.219). These individuals might not necessarily represent a sample that generated statistical inferences to the population; rather, I believe that it was an intentional sample of individuals who best informed me regarding the RQs under investigation. The participants expressed interest in the study and represented a range of experience and knowledge of education and VWs. They stated a range practice, attitudes towards and purposes for, teaching within VWs. The interviews lasted between approx. 60 and 90 minutes in text-chat. The participants reflected on their personal experiences and perceptions of teaching within VWs.

It can be argued that f2f interviewing may have provided a richer medium as it allows for immediate feedback and individual focus as well as involving a number of verbal and nonverbal cues, which might eventually produce more nuanced data. The ability to see participants' real facial expressions and other nonverbal cues, which may have resulted in my ability to detect misinterpretations of interview questions for example. A particular concern in in-world text based interviews is the lack of nonverbal cues. However, being in SL is an immersive experience, and this may itself contribute to more user focus. From my experience, there were additional benefits of interviewing with avatars in SL. Practically, conducting interviews in SL offered opportunities to access wider participants otherwise unavailable due to various reasons, including cost, transport or time complexities. Furthermore, unlike other online media VWs, text based interviews allowed gathering the data in the context of the research location. This provided the opportunity for me to conduct the interview in the learning context allowing the class educators to identify, share or demonstrate objects or activities during the interview.

Since VWs have their own typical affordances and constraints, the use of text as the primary medium for communication, role of avatars, interview locations as well as virtual objects have implications for in-world interviews. Although it is not possible to observe the participant directly as in f2f interview scenarios, factors such as identity, behaviour, characteristics and appearance of the participants in VWs may influence the nature of the data collected. Given this, building rapport is equally important in SL and RL to enhance the confidence of the participant who especially represent individuals I have never met in RL. The challenge of doing this in SL is that personal characteristics are normally hidden. There are no visible cues of a person's RL age, gender or social-economic status. To overcome this challenge and build rapport and reduce distractions, I engaged, for instance, in using humour or sharing virtual cups of coffee. Additionally, I was aware that participants might check my avatar's profile to find out professional and personal information about me. I also considered the appearance of my avatar as to whether it is appropriate and not misleading for the context. Through these assurances, I was building up a rapport with the participants. The dilemma may still involve the complexity of authenticating the experience of interviewing in VWs. However, as the participants were involved in HE teaching and VWER meetings, I assumed that they were genuine, honest and presented themselves as such in the SL interviews. In the next section, I further provide characteristics of the participants in Table 3 and present a glimpse of interviews with them in Figure 10.

3.12.4 Interview Participants

Participants	Discipline	Country
Avatar1	Professor in the School of Education	England
Avatar2	Senior Lecturer in the Department of Linguistics and English Language	England
Avatar3	Professor of Literacy in Education	England
Avatar4	Senior Lecturer in the Faculty of Engineering and Computing	England
Avatar5	English Lecturer	Sweden
Avatar6	Lecturer in the Department of Health & Community Science	Scotland

Avatar7	Teaching Fellow at the Centre for Open Learning in Math's Science, Computing and Technology	England
Avatar8	Associate Lecturer in the School of Education	Scotland
Avatar9	Senior Lecturer in the School of Information	England
Avatar10	Assistant Prof Lecturer in the Department of Computer Education and Instructional Technology	Turkey
Avatar11	Senior Lecturer in School of Education	Scotland
Avatar12	Lecturer in Education and Technology	USA
Avatar13	Lecturer in the School of Education	Scotland
Avatar14	Senior Lecturer in Digital Futures	Australia
Avatar15	Senior Lecturer in School of Education	Portugal
Avatar16	Senior Lecturer in Nursing and Midwifery	England
Avatar17	English Lecturer	Turkey
Avatar18	Lecturer in Educational Technology	USA
Avatar19	Senior Lecturer in Children's and Young People's Nursing	England

Table 3: Characteristics of Participants

Figure 10: Interview with Participants

The overall design of the research was shown in Figure 11.

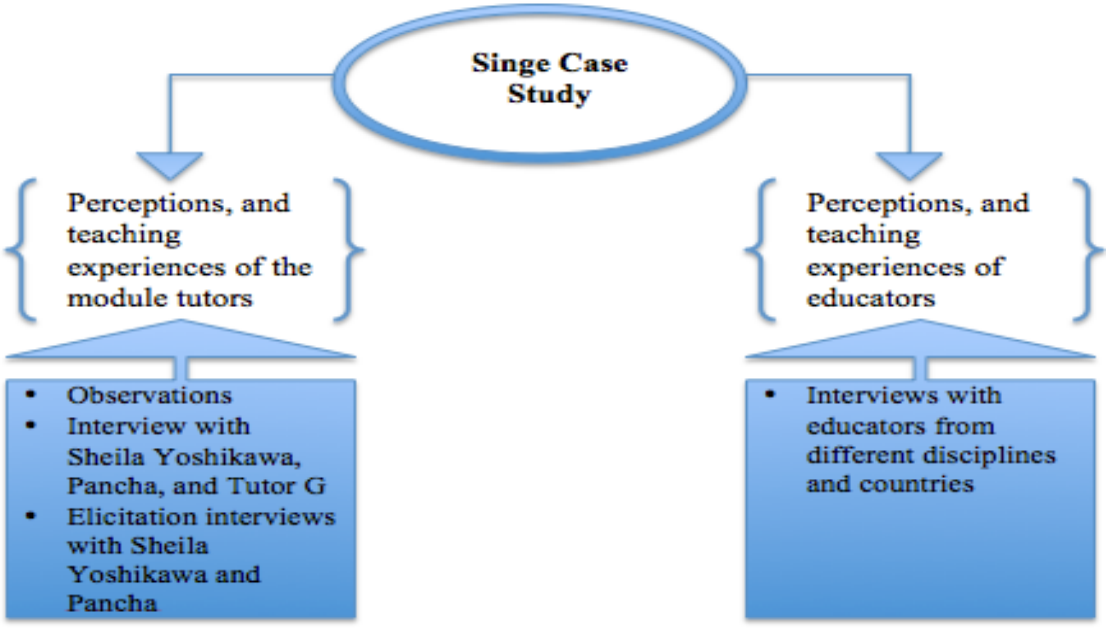


Figure 11: The Overall Design of the Research.

3.12.5 A Set of Criteria

In the field of social research, there is a set of criteria, i.e., a research paradigm to secure for conducting an inquiry, which are authenticity, credibility, representativeness, and meaning (Bearman & Scott 1991). Authenticity seeks whether evidence is genuine by questioning the source of evidence. I therefore sought participants who used SL with educational aims to be interviewed and considered whether the space was the right place to be observed. Credibility seeks if the evidence is sincere and free from any errors and distortions, which depends on the ability and effort of the researcher. To provide this, I ensured that the interviews were taken legitimately and the actions and events that I observed were in the context of education. Representativeness seeks to establish that the sample evidence is typical of its kind. In this study, participants were from a self-selecting sample of volunteers as educators who were actively using SL to gain accurate outcomes. Participants who had a degree of familiarity and experience with SL were targeted. This means that sampling was done purposively, i.e., theoretical or purposive sampling (Bernard 2006) which is a group of people who are relevant to my RQs and theoretical position (Mason 1996, p.93) to maximise what could be learned from the participants. Meaning seeks to establish that the evidence is clear and comprehensible. Guba &

Lincoln (1994) develop a set of criteria, which are transferability, confirmability, dependability, and credibility, to assess verification, i.e., to evaluate the validity of the research or "trustworthiness" of the inquiry in naturalistic, i.e., qualitative, research. The criterion of transferability refers to the applicability of the data and findings to different settings. The principle behind transferability is to seek degrees of similarity between the population and the sample in order to yield generalisability from the data. This research exhibits triangulation of method through the corroboration of participant observation, field notes, and unstructured interviews. The criterion of confirmability assures that the study is "objective" and free from values, biases of the researcher. Yet, as stressed earlier, the objectivity of the research is problematic and can only be addressed into the "positionality" of the researcher. In this qualitative research, I was the primary research instrument and therefore at the central of the research process. Ultimately, I considered the trustworthiness of this research by accounting for "ourselves in the research" (Etherington 2004, p.16). Therefore, reflecting on my position in this research process was crucial. The dependability criterion refers to the reliability of the study. It measures the stability of the study by considering whether the result would be the same, if the study were replicated under the same conditions. This implication of dependability seems problematic in this study, which is socially and culturally situated. Thus, dependability in this study was based on procedures, data collection and analysis instruments. The last criterion, that is credibility, asks whether the findings are believable from the perspective of participants in the research and assure that the data represents the findings. These criteria of the research are reinforced by conducting qualitative instruments in the case study.

3.13 Phases of Data Analysis Process

There were two phases of analysis in this study. In the first unit of analysis, I analysed experiences and perceptions of tutors both in the classroom and in SL. In this part, my purpose was to observe the learning setting to explore potential possibilities of SL in terms of teaching. The observations focused on virtual learning spaces in SL that were designed for enacted activities in the classroom to strengthen the teaching and learning. For this purpose, I participated and observed in SL sessions, activities, discussions, and I took some seminars and workshops along with

virtual field trips in SL. The main themes to explore in the observation period were attitudes as regards virtual worlds, virtual experience, and virtual activities, issues that illuminate teaching and pedagogy. This part of the analysis was the key component and particularly important for my study, as I focused quite a while on the affordances of SL for teaching. Therefore, my argument in this part was probably the most meaningful units of analysis. The data eventually contributed to answering my RQs and helped me evaluate affordances of SL for teaching in blended situations.

In the second unit of analysis, a sample group of tutors were interviewed to analyse their teaching perceptions and experiences in VWs. I conducted individual, semi-structured interviews in SL, as the SL environment was the partial teaching environment. In addition, Boellstorff (2008) argues that the requirement to meet interviewees in actual life would presume that VWs are not in themselves real contexts. Following him, I took words of residents of SL as "legitimate" data about teaching within SL. Interviews were individual rather than group to hear different voices of tutors and avoid influencing each others' perceptions. In the meantime interviews were semi-structured to avoid directing participants and indicating any opinion with certain questions. Therefore, I commenced with a set of questions but these questions acted merely as a starting point for a deeper conversation about teaching in SL. The tutors' interviews explored their perceptions, attitudes to VWs in detail and gave me more of an insight into the significance of what was happening in their teaching process. Tutors were asked to reflect on their experiences teaching in SL, and to describe their perceptions of characteristics of a successful virtual world implementation in their teaching practice. This data also contributed to answering my RQs. Research questions and their associated interview questions are given below.

RQ1: How do educators implement teaching into SL/f2f situations?

Interview Questions

1. What do you teach within SL?
2. How do you use the SL in your teaching?
3. Can you tell me about your teaching strategies/approaches (instructional approaches) into SL?
4. What key learning objectives were you seeking to accomplish by implementing the VW in this way?
5. How does specifically SL contribute to your teaching?

RQ2: Does teaching in SL give educators insight to improve their f2f pedagogy?

Interview Questions about teaching in blended learning

1. Where else do you teach? In VLE, Lab, classroom, field etc.
2. Can you say more about how this relates to the face-to-face teaching sessions on the course?
3. Would you identify differences and similarities between teaching in SL and f2f?
4. Do you think SL has changed your teaching in other spaces?

RQ3: How do educators learn how to approach teaching in SL?

Interview Questions

1. Can you tell me how you became a SL educator?
2. Do you negotiate/collaborate in SL/RL with the educators' community to construct your teaching philosophy/pedagogical framework?
3. Is there any educational research/ pedagogical framework that you have used to inform your teaching in SL?
4. Can you tell me attitudes of your colleagues in your department about the idea of teaching in SL?
5. What motivates you to participate in virtual worlds other than the requirement of a class activity?

RQ4: How do educators overcome challenges such as learners' anxiety towards VWs?

Interview Questions

1. Which strategies do you use if the students seem resistant to the learning environment? How do you overcome those challenges?

2.Have their attitudes changed over time?

3.Dou you think teaching in SL has an impact on your relationships with the learners?

Closing Questions

1. Is there anything else you would like to share about your experiences in SL/f2f environment?

2. Can I contact you again if I need any further information?

3.14 Thematising the Data

The goal of analysis is to structure and give meaning to data in order to introduce the reader to what has been learned from the study (Guba & Lincoln 1994). In the words of Creswell (2007, p.148), this process consists of "reducing the data into themes through a process of coding and considering the codes, and finally representing the data in figures, tables, or a discussion" which can be categorised as describing, classifying and interpreting stages. In the first stage of the analysis, I wrote a clear description of the settings and events. Creswell (ibid, p.152) states that description plays a central role in ethnographic and case studies.

My guiding principles for analysis and interpretation of the data were inductive and deductive approaches (Merriam 1998; Thomas 2006; Stake 1995). Inductive analysis refers to an approach as a means of deriving concepts, themes, or models from raw data through interpretations made by the researcher, whereas deductive analysis refers to an approach as a means of interpreting the data with a predefined set of codes (Thomas 2006, p.238). This sort of approach to synthesizing findings of the qualitative study is explicitly acknowledged by Thomas & Harden (2008), Braun & Clarke (2006), who find its roots in the "thematic analysis" process and is also suggested by Minocha (2010b) to evaluate the data gathered within VWs. In essence, this analysis approach involves identifying key concepts, formalising and developing themes. The study here did not aim at performance within a particular framework, nor build on a particular theory. Rather, it sought to understand the range of teaching experiences of educators in SL and from this understand how existing or new teaching strategies may relate to VWs. Thus, the adoption of a thematic analysis approach was considered since, according to Braun & Clarke (2006, p.79), it is "a method for identifying, analysing and reporting patterns (themes) within data." It is also an approach for qualitative analysis without depending on a particular theory and epistemology.

An inductive approach allowed me to scrutinise findings, which emerged as frequent or significant themes inherent in raw data, whereas deductive analysis allowed me to frame key themes with preconceptions and theories. The reason to synthesise two approaches therefore was to establish clear links between research objectives and findings derived from the raw data (inductive) and also to analyse the data with a theoretical perspective (deductive). As the core mode of analysis involved the framing of categories from the raw data with the inductive approach, the findings or interpretations were shaped by the assumptions and experiences I had while conducting the study.

Themes essentially reflect issues of evidence and proof in the data. This was demonstrated through the use of excerpts from chat-log transcripts, observations on learning activities, and my reflective notes and field notes. I also captured visuals of events in the field and include these in the data set. The motivation was twofold. First, the images are representations of events to illustrate the experience. Second, the

images enhance the thematic analysis, adding deeper understanding for a fuller narrative for the reader. This provides an insight into the shifting nature of understanding teaching in SL. Table 4 illustrates the data collecting and analysis process.

Data	Field Site	Analytic Method	Details
Field Participant Observation	The Island in SL, physical classrooms	Thematic Analysis	12 weeks on Mondays, one-hour f2f, two-hour SL sessions. The field notes collected during these sessions are reviewed for emerging themes
Semi-Structured Interviews	· Tutors interviews in SL · Elicitation interview with Sheila Yoshikawa and Pancha	Thematic Analysis	Lecture Tutors are interviewed. These data were used to support the findings of the sessions
Chat Logs	Electronic SL Transcripts	Thematic Analysis	These are text-chats of students' and tutors' interactions. These data are used to support the findings of the sessions

Table 4: Data Collection and Analysis Process.

I began the analytical process with conducting a mini version of interviews, i.e., a pilot study, to see whether research instruments were inappropriate or too complicated, and also to establish the issues to be addressed in the main research. In other words, I conducted the pilot study in an attempt to identify whether the primary premise of the interviews was feasible and whether there were any particular issues to focus on in more depth or challenges to deal with. Some interview questions later evolved in the light of the findings from the pilot study, e.g. some points such as "collaboration with the educators' community" and "teacher presence" emerged at the pilot stage.

3.15 Pilot Study and Lessons Learned for the Main Interviews

I conducted three semi-structured interviews altogether, one f2f, two in SL, with the educators from different institutions and disciplines in the UK. Participants were self-selected, two females (Avatar1 and Avatar2) and a male (Avatar3), and all three educators have experience regarding teaching in VWs and are active residents in SL at the time of writing. The interviews lasted between approx. 60 and 90 minutes. A series of open-ended questions were employed in the interview based on implementation of their teaching strategies in SL/face-to-face situations.

The pilot study revealed the following important factors for the main interview part of the study. That is, two new aspects of focus emerged as a result of the pilot study:

- One of the initial aims of conducting interviews with the educators was to find out whether their involvement in the SL community affects how they construct their pedagogical strategies. I realised in the pilot interviews that this question would be under the subset of investigating how the educators learned how to approach teaching in VWs and become SL educators, as participants explained their individual teaching experiences.
- In that vein, motivational factors to stay in VWs, other than the requirement of a class activity for educators, have come into the forefront when participants talk about collaboration with the SL community. This was important as motivation is considered broadly to be the essential factor that drives perceptions, behaviours and individuals' intention to experience any sort of technology.

It was beneficial to engage in some "thick description" (Geertz 1973) as I proceeded. This helped emerging insights, which I was unaware prior to the research itself. The pilot study therefore fulfilled a useful role in the preparation for the main interview part of the study, as it formed my third research question and identified some sub-questions on which to focus.

3.16 Data Management

Each participant's interview was held in text-chat in SL. The data were automatically transferred in a text document - in total over 80K words, which were read multiple

times, and entered into the qualitative research study software package Dedoose ™ that allowed me to organise and retrieve the data. Dedoose was chosen to explore the data as it was compatible with Apple MacBook Pro laptop, easy to use, and web based. Considering the idea that such pre-designed packages do not analyse the data, people do (Weitzman & Miles 1995, p.3), I believe that the implementation of Dedoose was an appropriate and pragmatic way to proceed. I adopted a manual approach to synthesise the data into meaningful codes, patterns, and themes within Dedoose (Creswell 1998).

There were two phases in the coding process. Firstly I engaged in the open coding stage of the data. Open coding involved the reading of data line by line to identify and formulate emerging ideas, themes or issues (Emerson et al. 1995, p.143). To do this, I applied codes, which are words, to the data. A substantial number of codes were derived during this phase (Appendix 4: Sample Coding). This initial coding enabled identification of emerging patterns within the data. This process helped me to further engage in tentative analysis, and make connections to the existing literature. Second, I engaged in more centered coding to identify ideas that may lead to themes. This involved the classification of emerging patterns. Secondly, in this final phase of the coding process, I returned to the data to identify core themes.

As I stressed earlier, I have analysed the data gathered with inductive and deductive approaches to identify themes, issues, and any causal or other links between themes, using the RQs as guidance. The inductive approach allowed me to generate codes with concepts suggested by participants, whereas the deductive approach allowed me to define ideas and themes with predefined concepts before coding began. By combining two strategies, I approached the data not only with a theoretical perspective that borrowed from the literature but also from the ground up with emerging themes. Therefore I examined the data with concepts suggested by my initial literature review and considering my RQs, and also by looking at meaningful codes where participants' views seemed to encapsulate some aspects of the data. I used deductive and inductive analysis together to construct themes from the data based on pre-existing codes and emerging codes. I illustrate the codes generated from the literature review, which were used to analyse the data as part of the deductive aspect of data analysis, in Table 5.

Research Questions	Codes
1.How do tutors implement teaching into SL/f2f situations?	Immersion, authenticity, connections, experience, filed trips, identity, interaction, collaboration, playfulness, presence, teamwork, rapport, role-play, simulation, meshed, peregrination, assessment
2.Does teaching in SL give tutors insight to improve their f2f pedagogy?	Creativity, learning, collaboration, reflection
3.How did they learn how to approach teaching in SL?	Community, avatar identity, awareness, pedagogical models, networking, collaboration, professional development
4.How do tutors overcome challenges such as learners' resistance to virtual worlds?	Authenticity, VWs culture, embodiment, games, realism, support, rationale, identity construction, disquieting, embodiment, emotional connection, identity contractions

Table 5: RQs and Associated Codes Generated from Deductive Analysis.

I entered the codes deductively and inductively into Dedoose. Then I assigned a chunk of the data with a code generated from literature or created from the data itself. In the meantime, I kept notes in Dedoose and attached and linked them to certain parts of the data or codes. This helped me to elaborate or revise concepts as well as to keep notes where I extended my ideas to explain the data more coherently and carefully. Once I entered the data and assigned the codes, I retrieved the data based on categories. I used the codes, which appeared most frequently or seemed most significant as categories to classify and explain the data. At this point, Dedoose for instance helped me tabulate the data, identify similar codes which could be combined into categories and allowed me to retrieve the data based on an individual code or a group of codes. I eventually considered the dimensions of each coding category and links between categories and interpreted the data with various aspects. Figure 12 gives a view of a code cloud and Figure 13 illustrates an example of coding and assigning the data.

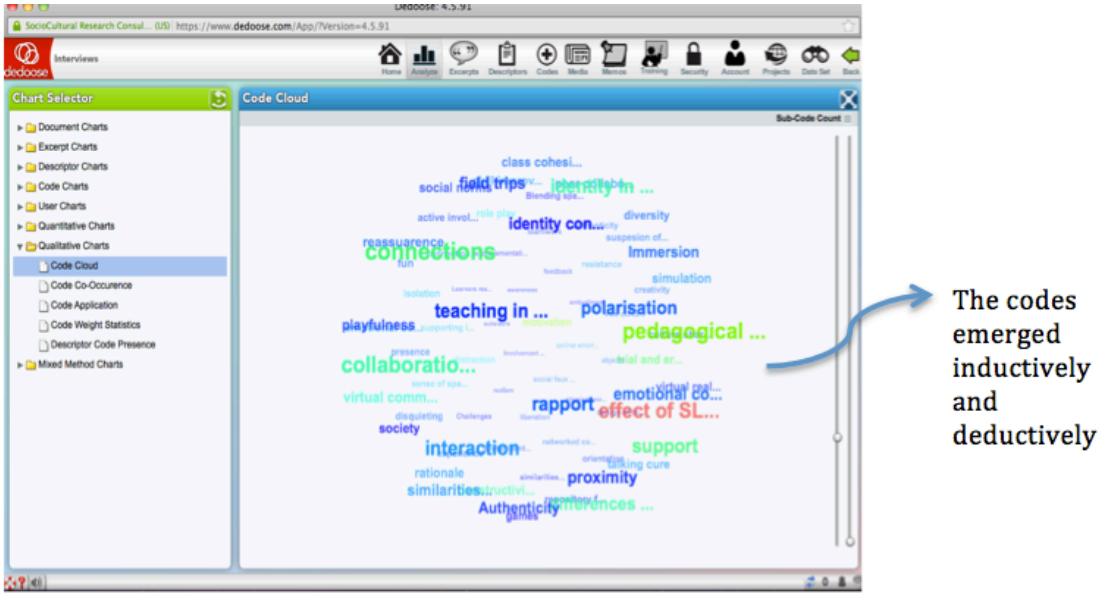


Figure 12: A View of Code Cloud.

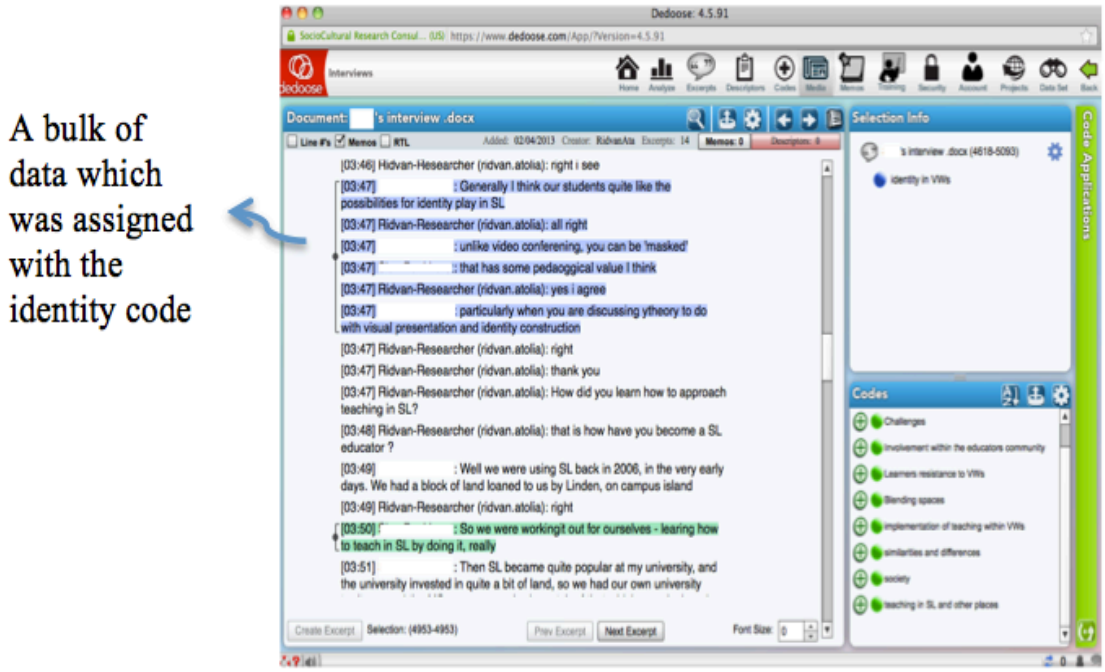


Figure 13: An Example of Coding and Assigning the Data Process.

Once I had sorted, arranged and ordered the data according to codes, I looked at where codes overlapped and where codes appeared in a certain sequence with associating data sources. Retrieving coded data enabled me to combine different sources of data and focus on particular aspects of the data. I used the Code Co-Occurrence facility in the Analyse section of Dedoose to interrogate where codes overlapped through the data. Clicking on grey squares allowed me to view associated coded data and to interpret as excerpts. I included extensive quotations from the interviews to enable the data to "speak for themselves" (Wolcott 1994, p.10) and to add authenticity. This enabled me to immerse into the data and interpret the findings and see how they made sense. Figure 14 illustrates an overview of a code co-occurrence chart.

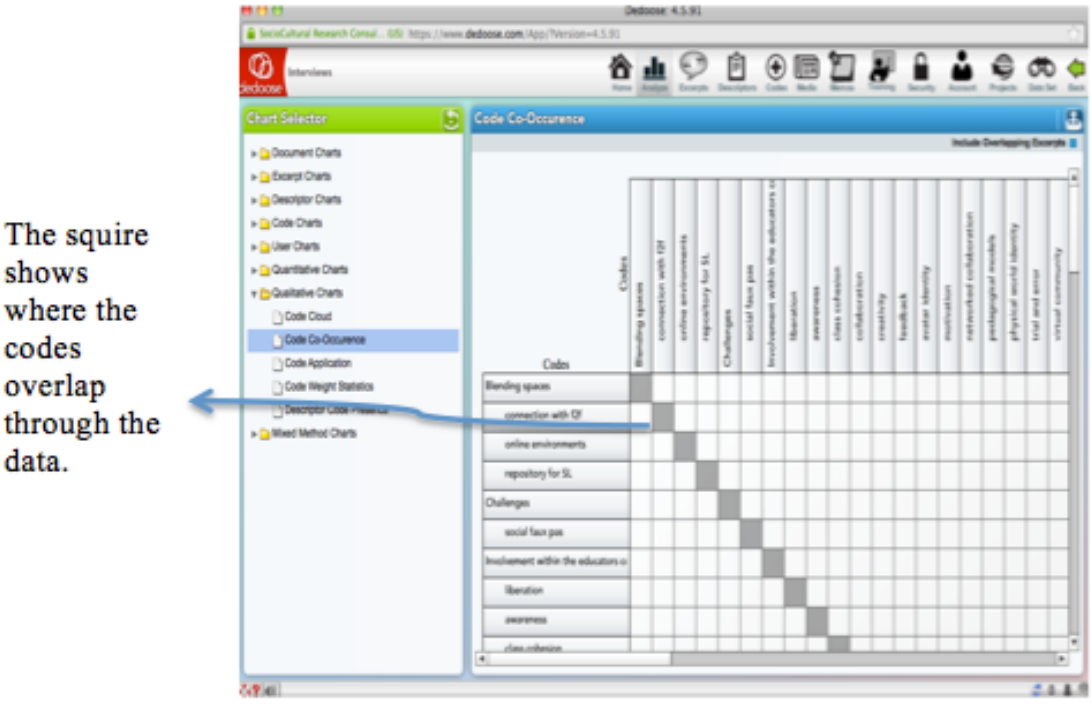


Figure 14: An Overview of Code Co-Occurance Chart.

Once I finished the data mining process, then I considered what the data suggested in terms of themes and sub-themes by synthesising issues presented in the literature. I combined considered patterns into sub-themes. Numerous sub-themes emerged during the analysis process. I collated sub-themes, some of which were similar, into themes and then reviewed all. At this point, I had a diagram of themes that assisted in refining the themes (Appendix 5: Themes diagram). I identified seven underlying

themes that indicate meaningful components or essences of ideas and experiences when teaching is implemented within SL.

The central principle of the data analysis process was to explore different participants' views, actions, experiences and incidents and I found the suggestions of Wolcott (1994, p.12) well suited to present my study. I organised the narrative by utilising his concept of transforming qualitative data where he suggests starting with description and analyzing and ultimately interpreting the data. I followed his strategy, which contends that description addresses what is happening, analysis addresses how things work and interpretation addresses what it all means. Specifically, I started to describe the themes by slowly zooming from a broad context to the particular and then I thematically analysed the data by highlighting certain aspects and eventually I extended the analysis by reflecting on the implications and influences of the themes. Where appropriate, I described how I approached the data and ended up with each theme.

3.17 The Writing Up Process

Boellstorff et al. (2012, p.183) underline that it is important to present work in progress in conferences and workshops to prompt fruitful feedback and to articulate outcomes of the study. For this purpose, I produced various conference papers to improve the final product of writing. I first presented a paper titled "Virtual Ethnography for Virtual Worlds" in 2012 in the "Rethinking Educational Ethnography: Researching Online Communities and Interactions" to discuss how virtual ethnography could be applied to VWs (Ata 2012). Later, I gave a poster presentation in the "Centre for the Study of Literacies International Conference" titled "A mix of the real (physical) world & virtual worlds: Case study with orchestrating teaching in blended situations" (Ata 2012b). This allowed me to discuss the initial findings of my case study. Finally, I presented a paper titled "Experiential Teaching and Learning as part of a Blended Approach: Classrooms, Blackboard and Second Life Practices" at the Experiential Learning in Virtual Worlds conference to disseminate the empirical findings of my study as well as to clarify and finalise conceptualisation of my argument (Ata 2013).

CHAPTER FOUR: PRESENTING THE DATA

4.1 Introduction

This chapter consists of two parts. In the first part, I present detailed data from interviews that I conducted with educators from different disciplines. I have grouped the data into the themes, which were identified during the coding and analysis of transcripts of interviews. In the second part, I describe the module and elaborate on the students' learning activities in chronological order. I then present detailed data from observations and interviews. I evaluate the sessions qualitatively by analysing field notes, observations, text-chat logs, and transcripts of interviews.

The themes which emerged from the interviews with participants are described below and a selection of qualitative data included with the description, analysis and interpretation. Before beginning the discussion of the interviews and emerged themes, I note that the virtual world of Second Life is often referred to by the interviewees as "SL" and the physical world or real life as "RL". There is, in addition, a glossary of terms specific to virtual worlds and computer technologies in the definition of terms in Section 1.6 in Chapter One.

The analysis of the interview data yielded the themes of

- Cybergogy.
- Creativity.
- Trial and Error.
- Wow Moment.

Some of the these labels, such as "Cybergogy", are ones which have been referred to by other similar studies (Scopes 2011; Chase & Scopes 2012) but others, such as "Creativity", "Trial and Error" and "Wow Moment", reflect the specific situated context of this research. I interpreted the theme of "cybergogy" to be of most value and therefore explain it first. The remainder of the themes however are not listed hierarchically. I now elaborate and present evidence of each theme in turn.

4.2 Theme of Cybergogy

With my first RQ, I addressed how tutors implement teaching into SL/f2f situations. I broke down this question into 3 sub-questions to understand how tutors framed their teaching strategies. These sub-questions were included to find out their teaching strategies, their learning objectives and the contribution of SL into their teaching. With understanding the learning archetypes and how they align with learning domains, I present examples of interviewee data to address how participants perceive SL as a teaching environment. Specifically I interpret the findings with the model of cybergogy (Chase & Scopes 2012, p.127), i.e. rethinking pedagogy within a digital-based frame, which was developed specifically for teaching in 3D immersive environment, to conceptualise participants' comments. That is, the analysis is based upon the domains of cybergogy: social, cognitive, dexterous and emotional aspects of learning originally proposed by Scopes (2009), and elaborated upon by Kapp & O'Driscoll (2010), including their learning archetypes frameworks.

In response to the interview questions, participants agreed that their teaching strategies were influenced by the constructivist approach.

Avatar9: *I would say it is constructivist in aims.*

Avatar6: *I see it as a tool, which allows for social and environmental presence, is collaborative, allows international discussion, field trips etc.*

Avatar12: *It is a leap into constructivist theory and practice.*

Avatar16*: I believe it is very much constructivist.*

As characterised by these comments, participants often referenced the constructivist theory of learning in their teaching. These comments suggest that participants embraced the SL environment for teaching based on constructivism in which learners are expected to construct new ideas or concepts based upon their current or past knowledge (Bronack et al. 2006; Dede 1995; Garrison et al. 2001; Salt et al. 2008). These comments were more general in nature, typically summarising a broad reason for using VWs for their teaching. I now illustrate elaborated examples of the data that fall into the categories of learning archetypes. Since the Kapp & O'Driscoll (2010) categorization was initially modified and detailed from Scope's categorization, I therefore use the original frame to illustrate the data of interviewees. Some aspects of

the learning archetypes may obviously intertwine, such as when the students undertake an activity that may fulfill more than one practice, yet my aim is to emphasise the relevant component of the cybergogy model. I start explaining each relevant learning archetype with excerpts and reflect on them in turn.

4.2.1 Role-Play

Avatar14*: I would get students to role-play parts of religious rituals and then explain it to the rest of the class. For example, I would ask the students to adopt a female avatar and then dress in the Burkah. Then I would ask them to go to a public space in Second Life and observe the sorts of comments that they attracted. In this way they would get an idea of the sorts of prejudice a Muslim woman might face in Australian society.*

Avatar11*: Generally I think our students quite like the possibilities for identity play in SL, unlike video conferencing, you can be 'masked'. Particularly when you are discussing theory to do with visual presentation and identity construction.*

Avatar8*: For the introductory course, we use the space to explore identity in relation to learning so then I make more use of some of the more obvious affordances of SL, like avatar shape shifting, voice etc.*

Avatar4*: So for instance disaster management. We used it for role-play with the students and it worked really well.*

The data indicate that participants infer "role-play" with words such as "identity play", and "identity". The participant reflections suggest a number of interesting points. Typically for Avatar14, Avatar11, and Avatar8 the role-play is about understanding the impact being an avatar persona has on the individuals and its influences on learning experience (Dramatised Frame), whereas for Avatar4 it is much more about providing a realistic situation such as disaster management and acting out that scenario (Morphic Frame). Therefore this type of role-playing differs from the others as it aims to give the students opportunities to apply their skills and abilities to the role and experience it. However, the role-playing also allows learners to experience a role, which they do not normally perform such as a different gender or race. This helps them to gain a new perspective by exploring a different identity, culture or gender, as Avatar14, Avatar11 and Avatar8 designed their teaching around this desired outcome. This finding is also consistent with the results of other studies, such as Savin‑Baden (2010).

4.2.2 Simulation

Avatar16: *When I was a midwife I used to teach in the hospital so I know how difficult it is to arrange for students to get the experiences necessary for them in the corporeal world.*

Avatar6*: I teach problem based learning scenarios about patient history taking. So it is similar in that the area looks like a ward and they act like they would in the class or Clinical skills lab simulation.*

Some key points are apparent in the data. Comments from Avatar16 and Avatar6 suggest that setting up a teaching situation within the physical world pragmatically would be more difficult, expensive, dangerous or impossible, whereas VWs accommodate simulated online environments that hold the potential for immersive teaching activities in authentic context (Critical Incident Frame). This gives them opportunities to implement situations where their students could explore things that would be difficult and expensive to replicate in the physical world and work together. In this way, the simulation helped to prepare the students for their future role. This finding is consistent with the study of Honey et al. (2012).

4.2.3 Peregrination

Avatar9*: I have taken people on trips to a library that possibly counts as field trips.*

Avatar12*: For the other class we use a lot of different techniques to demonstrate pedagogy such as traveling to distant lands and times.*

Avatar14*: We used to send students to places of worship in the real world to watch worship. But there were ethical issues and practical issues around that. I could have my students do the Virtual Hajj in SL and in that way learning would become firsthand.*

Avatar18*: When we take students into theatres that no longer exist in the real world it gives them an insight into how those theatres looked.*

The data indicate that participants express the idea of "peregrination" with words such as "trips", "travelling", "take", and "send". The example data indicate that educators take and escort the students to the various displays based on the subject studied and ask the students to explore the places. For Avatar18, it is an opportunity for the students to be in an environment to which they could not otherwise travel. For Avatar14, it allows her students to explore areas that may otherwise be off limits because of ethical and practical issues such as safety and privacy constraints in the

physical world. Specifically the data from Avatar9 and Avatar12 suggest that this model essentially acts as a structure for educators using locations in VWs where learning circumstances occur by journeying destinations (Guided Tour Frame).

VWs also provide a means of restorative qualities that tutors benefit from, by undertaking field trips to spaces akin to being in natural environments in the physical world to relax or explore a historic past, which represent different cultures. Although not explicitly illustrated, for Avatar14, this aspect of the environment was also the valued feature for her teaching.

***Avatar14**: It has been designed to test if virtual worlds can act as restorative environments. We test attentional restoration of students.*

The data indicate that learners might be more relaxed and secure with the feeling of self-worth and rejuvenation. The data is consistent with studies by Farley et al. (2012) conducted with 56 participants over the online survey, which indicates that the restorative impact of VWs might lead to enhanced feelings of wellbeing and creativity. Arguably, these sorts of environments are likely to beneficial for stress reduction and provide mental restoration. This is indicated with the study of Depledge et al. (2011) who sought to explore whether natural and virtual environments could be used to promote human health and wellbeing. Similarly, in the study of DeAngelis (2009) the benefits of social skills practice by using VWs for students with social skills challenges, such as students with autism are pointed out.

Besides these incidents, some participants indicated their implementations of teaching within VWs as the ability to “connect” with others outside the classroom, which can be grouped in this category.

***Avatar7:** if you want your students to "connect" with others outside of the classroom, and resources outside of the classroom, SL fit well.*

***Avatar12:** Mostly to get outside the walls of the classroom.*

***Avatar14:** I use the theory of connectivism in my teaching by acknowledging that no one person has the answers and that everyone has an opinion and that opinion is valid. I am not the holder of knowledge. Some students may have some of the knowledge and other knowledge they will have to search for. It’s a leap of faith – not keeping hold of that knowledge yourself and handing over that authority to someone/something else unknown.*

Avatar15: *SL is a huge community with no barriers or limits. Literally you can connect to anyone whenever you want. So if this is true it means you can access knowledge by a direct contact with people.*

The data indicate that participants refer to the idea of "beyond the classroom" with words such as "connect", "outside of the classroom", and "community". The excerpts indicate that these environments give the participants the opportunity to place the students in the position of structuring their own way for their learning. That is, this approach encourages the students to learn not only with their tutors and peers in the f2f sessions, but also through interacting with other people in different sorts of out-of-class activities such as discussions, workshops or international exchanges in VWs as if in an "extended classroom" (Loureiro & Bettencourt 2014). The teaching methods in this way encourage students to make connections with a broader context of learning and foster deeper processing of the content. This finding confirms the idea of "connectivism", posed by Siemens (2006) and later transferred to VWs, to describe how students could personalise their environments and collaborate through the use of social networked technologies within personal learning communities. By definition, these educators take an approach, which is based on student-based pedagogy, emphasising that learning is distributed over the set of connections and new nodes beyond the classroom walls. For those participants, learning resides outside of themselves; such as through organisations, and databases. Siemens' idea of that knowledge is distributed across networks of connections, and nodes are useful in identifying some characteristics of these environments as an implementation of connectivism to VWs. This idea of connectivism is explained extensively in Section 2.10.3 in Chapter Two.

4.2.4 Meshed

Avatar5*: It's much easier to have people work in small groups and then come back for a plenary session in-world than it is in real life.*

Avatar4*: The most interesting for me is exploring how theatrical groups are using virtual worlds to develop new forms of theaters.*

Avatar19: *In one class it is a space in which to meet in real time - for a group of the students.*

Participants express the idea of "meshed" with the word of "group". The comments indicate that these participants adopt VWs to not simply explore and experience the

environment but to combine and interconnect students in various ways to work together for desired outcomes. For instance Avatar5 believes that it is much easier to do small group activities with VW affordances mentioned previously than to do them in the classroom environment (Small Group Work Frame). For Avatar4, it is a creation of opportunities to bring theatrical groups of students and again work together to manipulate objects and create new forms of theatre. The outcome can be the creation of a new object, idea, or design (Co-Creation Frame). For Avatar19, it is an opportunity to bring distant groups of students together and interact with each other in real time (Social Networking Frame).

4.2.5 Assessment

No illustrative data were gathered during the interviews to indicate the participants' implementation of VWs as part of "assessment". This has been due to no specific interview questions being asked regarding the assessment process since it is beyond the scope of this study. Participants did not reveal any casual data even though specific questions were not asked, which might also indicate that their implementations within VWs do not involve evaluating learning process.

As further illustrated by these comments, the participants utilize VWs to conduct activities within discovery, hands-on, experiential, or task-based structures within a social context. These comments suggest that Chase & Scopes' (2012) learning archetypes were fully accommodated in-world, except "assessment", by the different participants. To give another example, one of the interviewees expressed that "digital storytelling" is her implementation of VWs into her teaching (Avatar8). Sanchez (2009) identified "digital storytelling" as a pedagogical application for VWs. Digital storytelling is "a whole range of personal stories now being told in potentially public form using digital media resources" (Lundby 2008). In other words, it is storytelling where digital images, video, music and reflective narratives are included to share life experiences and personal insights. In SL, students create an experience or a space in which others walk through their stories. Unlike real life digital storytelling, SL allows students to create a context, rather than just relating a narrative. As it includes self-expression, social learning and modeling, students apply critical thinking skills while selecting appropriate media to convey a story. Digital storytelling provides students with the immersive environment where they can apply communication and literacy

skills, work collaboratively, and think critically while addressing the content. Ultimately this process includes role-play where learners engage their character in their stories, as well as peregrination where they take trips in SL, which can stimulate their imaginations and encourage more creative stories. Then they can visualise, which is a component of the learning experience under the categories of Kapp & O'Driscoll's frame (2010), the stories they imagine by creating and manipulating the objects and thereby authentically enacting their stories. This may finally include small groups as meshed, where students work and collaborate together so that distance, time and safety factors are minimised.

Most interviewees cited that their teaching within VWs includes giving learners "authentic" experience, the ability to meet students in real time with a shared sense of space, or the ability to explore identity in relation the their learning. As one of the interviewees stated *"I am demonstrating how SL closes the gap between locations, times, people, ideas, and what is real. (Avatar12)"* This is well supported in the relevant literature such as studies of Camilleri et al. (2013), and Rapanotti et al. (2012).

4.3 Emerging Concepts from the Interviews

Unlike the comments relating to the learning archetypes and participants' implementations outlined above, during the reading of the interview data as part of the inductive analysis approach, two additional points emerged as being the foundations of utilising teaching into VWs. Without understanding these concepts, it might be more challenging to grasp the pedagogical affordance of VWS. These are: "suspension of disbelief" and "metaxis and strangeness". I now give examples of these essential statements and explain how these are pivotal aspects to maximise the design of the cybergogy model or pedagogy within VWs.

4.3.1 Suspension of Disbelief

Avatar5: *One of the things SL encourages my students to do is 'suspend their disbelief' in their ability to express themselves in spoken English.*

Avatar12*: I'm just teaching my 100th student in SL now, and the 'suspension of disbelief' happens for all of them. It's as if it isn't them who's making the mistake, but their avatar.*

Avatar13: *Potentially the participants are going to have to make fools of themselves in front of colleagues from their own and other departments… a sensitive matter for academics. Social aspect of it also very important I think. SL blunts this embarrassment considerably.*

The excerpt raises some fascinating points. The term of "suspension of disbelief" or "willing suspension of disbelief", which is "the crux of the idea of VR" (Kuksa & Childs 2014b, p.8), is to express the participants' decision to accept temporarily what is presented in a concept, and often applies to a fictional event. This refers to the willingness of the participant to accept a certain level of implausibility in favour of the narrative by disregarding the limitations of a medium. It is therefore associated with the formation of people's emotional attachment with the context, e.g. a character, a movie, or video games. It can also be characterised as "engage belief" (Heeter 1995) to underline "the active and volitional nature of this leap of faith" (Kuksa & Childs 2014, p.75).

The same principle applies to VWs, along with involving a much more active immersion than the suspension of disbelief (Beck et al. 2011, p.14), as it "can be reinforced by a wide range of tangential strategies such as dressing avatars appropriate to their function" (Dudeney & Ramsay 2009, p.14). However, this suspension of disbelief may not necessarily be easy to acquire and it may vary across individuals. The concept of suspension of disbelief is useful to describe participants' engagement in VWs. The more that participants feel they can suspend their disbelief, the more likely they are to become wholly drawn and fully immersed into VWs and perceive them as real VWs that they can explore. This was demonstrated by comments made by Avatar5, Avatar12 and Avatar13. They highlighted that the learners suspended their disbelief via a performance or form of social context.

Nevertheless, it is worth noting that here the basis for the willing suspension of disbelief is different in VWs as they provide a different sort of experience than traditional works of fiction. The ability to depict in detail aspects of reality and anthropomorphise their characters in conjunction with coherency - this immersive experience can be accomplished with the use of VWs. Given their increasingly authentic nature, VWs blur the distinction between reality and fiction, which can encourage participants to adequately switch from thinking of VWs as representing fictional worlds. This is to emphasise that while there are considerable challenges in

the idea of suspension of disbelief, for instance it can be debatable whether participants ignore disbelief rather than suspend it, findings suggest that it is useful by means of augmenting and facilitating social capacities of VWs in order to achieve the desired learning outcomes. These examples illustrate that these participants appreciate VWs because of their ability to stimulate imagination by performances but also to imitate the everyday world. Drawing on this, the key element that remains is to ensure that participants value the environment in such a way as to support the social interaction context and engage fully with the activity. Ultimately, this can be used to qualify levels of implementation in the participants' emotional domain specifically.

4.3.2 Metaxis and Strangeness

Avatar11*: For example, we had a student at our last virtual graduation, who was also present in the real life graduation hall. That sense of being in two places at the same time, multiplied, was disorienting and strange. He was both here and not here. So I value SL as its strangeness, its visually, playfulness, and socialness.*

Avatar5: *It seems as if the distracting nature of SL is an essential feature of the kind of work I do here. They get so distracted that they 'forget' they can't do it!*

Avatar19: *Another feature is the distracting nature of the experience in SL. There's so much visual and auditory stimulation going on all the time.*

Avatar10: *I like the way SL can make a familiar situation (a class) strange and perhaps a little disturbing. I think that can be quite generative, pedagogically speaking.*

The excerpt raises a number of important issues. The point that Avatar11 mentioned, which was *"the sense of being in two places at the same time"*, highlights the idea of Falconer (2011) in which she refers to the metaphor of "metaxis" to describe the condition of "in-betweenness"*,* the sense of being both in the physical world and the virtual world simultaneously. Bigger (2009) describes this in-between character of VWs as "liminal" to explain the intertwined state of mind since residents are present in the embodiment of their avatar in VWs and they are situated in the physical world in which they see their avatars projected on the display. According to Falconer, the notion of in-betweenness, or metaxis particularly becomes significant when educators adopt VWs for their teaching. This experience concurs with the idea of "fuzziness" or "vagueness", and "uncertainty" concepts which value the idea that learning occurs in messy sets of ways and VWs enable students to learn in the mess. Falconer (2011)

describes this way of learning as "learning in two places at once". In this way, this data identifies the critical point to concentrate upon the potential that VWs have in developing new teaching and learning approaches.

Similarly, other examples indicate that the distracting and strange nature of the environment was the valued aspect to being immersed in SL in my interpretation of the data, both in terms of teaching strategy and the quality of learning. There is an argument that although the attractiveness and complexity of the innovative environment might distract students from the learning outcomes, certain academics (e.g. Bayne 2008; Savin-Baden 2010) suggest that VWs seem to inhere troublesomeness and disquiet aspects which accommodate powerful pedagogical possibilities. The participants' positive feeling of the idea that VWs defamiliarise our sense of selfhood and being together within an uncomfortable and anxiety-inducing way has a profound pedagogical value. This is confirmed by my observations during the embedded subcase (see Section 4.13.2 for further detail) and commentaries made by the interviewees. For Avatar11, Avatar5, and Avatar4, it is this aspect, which can engage students in worlds of distraction and strangeness.

In particular, these examples illustrate that this is a valued and profound aspect of VWs for Avatar4, where their ability to produce uncanny spaces allows learners to work productively. Bayne (2008, p.5) embraces this aspect as the most indicative pedagogical possibility of VWs where students embody the self via avatars. Drawing on this, findings suggest that this aspect can be used to qualify levels of implementation through the learning domains. I return to this phenomenon and illustrate examples, which are then analysed in finer detail in Section 4.13.2.

Although I illustrate the views of the educators who were interviewed for this study regarding their implementations of VWs into their teaching, I illuminate the teaching experiences of the educators within VWs along with the subcase study in Section 4.7. This also includes further discussion of the emerging themes in conjunction with aspects of teaching within VWs, the classroom and Blackboard.

4.4 Theme of Creativity

With my second research question I addressed whether teaching in SL gives participants insight to enhance their classroom teaching approaches. I broke down this question into 4 sub-questions to look at how educators' teaching strategies are influenced by SL. These sub-questions included whether teaching with other media relates to their f2f teaching and if teaching in SL has changed their teaching in other spaces. Participants tended to express their comments by comparing similarities and differences between teaching within SL and in the classroom. Therefore, the sub-sections under this theme may not have a direct link to "creativity". Rather, they are the points that emerged when the participants referred to their teaching experience in SL and f2f and talked about the mutual effect between them.

"Creativity" was the code I applied most often in my initial open coding. Interview responses showed that the participants associated the creativity with words such as "new models", "opportunities", "raised the bar", and "active". This suggests that creativity is a process of making something new, stimulating original ideas that have value and putting one's imagination to undertake (Robinson 2011). Immersing in VWs helps participants to perceive an embodied nature in the environment. This is significant because educators, who perceive VWs to be capable and valued in terms of creativity despite the challenges associated with them, tend to see VWs in a more positive light as suggested below.

Avatar7*: I think it has probably pushed me to be more creative about how I use space and activities/resources in a classroom. In SL you have to make new models and I enjoyed that creative step, and transferred it out to the physical world. For example, in SL I have an activity where students move about in physical space depending on their degree of agreement with the topic under discussion. I now do a similar activity in the physical classroom.*

Avatar12*: Having the experience of being able to be truly creative has "raised the bar" for my real life practice. I have experimented with group projects in SL, projects that are authentic and useful. I am more comfortable finding similar activities around which my students can develop their knowledge in the classroom.*

These comments suggest that Avatar7 and Avatar12 found bringing VWs into the classroom is not just using the environment as an integral part of the teaching and learning process. It is also about moving away from traditional teaching where they can capitalise on their innovative potential. The built-in mechanisms of the

environment enable users to create almost anything imaginable. Furthermore, the availability of spatial enhanced richness of the context can benefit educators to be capable of bringing their potential to new levels. This is where the innovative educators could design unique and inventive activities and transfer the value created in VWs to the classroom. The data from Avatar12 emphasises this aspect of the environment by indicating that teaching in SL has raised the expectations and standards in her f2f teaching. For Avatar7 and Avatar12, it has also become an inspiring source for f2f teaching. This means that the creative nature of VWs is not limited only within them, but crosses the line into the physical world. In line with the argument that ideas generated in VWs might not be directly transferable to the physical world, they may still provide a creative source of inspiration. VWs might be especially conducive for such experiments. The following excerpt further illustrates how SL experiences may be influential on the concept of creativity.

> *During my visits in SL today, I took a fascinating tour of a medical department and rode through giant animated models of human body with text and audio explanations provided. Thereafter, I planned to bring diverse groups of students based in different locations in RL and asked them to explore the environment and participate in the discussion exercise. The benefit of doing something like this in SL is to foster sophisticated thinking through experimentation. The experience appeared to me brilliant! What I felt was, SL is about inspiration and sparking the desire and imagination. This is the fuel that ignites into creativity (Research journal excerpt 2010).*

Such experiences, for instance, help to develop a shift in the design of teaching practice and raise the students' level of engagement. My conversations with participants and observations of Sheila Yoshikawa reveal several underlying characteristics of creativity such as creating virtual objects, expressing oneself within the form of an avatar or designing innovative or existing ideas in new forms. Considering these creative opportunities in VWs potentially pushes the limits of pedagogical approaches that educators adopt in the classroom. For instance, according to Avatar2, her teaching in SL "was important in a liberation from assumptions associated with traditional schooling". This is indicated by Ball & Pearce (2008, p.17) as "liberating effects". Avatar2 argues that in this way new ideas come to the classroom through immersing in SL. This theme exemplifies five dimensions. I now explain these dimensions that educators emphasise in their comments.

4.4.1 Reflective Teaching

Avatar9 and Avatar19 keenly stated that teaching in SL helped them to reflect on their classroom teaching approaches. In their interviews, they talked of being reflective practitioners to improve their teaching approaches that ultimately impacts on their creativity. The following excerpt illustrates the way they also see how teaching in these environments prompts them to reflect on their teaching assumptions.

Avatar9*: I think it has been one of the things that have kept me reflecting and learning about teaching.*

Avatar19*: I think it helped me understand a bit more about my own assumptions and approaches and challenge with them.*

Reflective practice involves revising one's understanding of learners, context, and content as well as developing a teaching philosophy during teaching. This is important to remain vitalised, as this might lead to avoiding the loss of enthusiasm and static practice, which includes changes and improvements in teaching of educators by doing self-observation and self-evaluation as well as by interacting with other educators. This might be a challenging aspect of day-to-day practice for those who do not often exercise self-reflection in their teaching. However, for Avatar9 and Avatar19, I found this is also a way of maintaining current awareness of educational technologies and evaluating their practical affordances for integration. More importantly, it is a way of augmenting their reflective practice and questioning established assumptions around teaching practices and praxis. This was indicated by Avatar19's comment referring to *"challenge with them"*. The participants' interview responses appeared to confirm other research findings, which indicate that engaging with VWs challenges educators with different sorts of questions and trigger meaningful reflective teaching (Ballengee-Morris 2009, p.32). Reflective processes akin to this can promote and question aspects of educators' teaching practices.

4.4.2 Classroom Climate

"Classroom climate" phrase was not the code that I instantly applied to the data but emerged after considerable thinking. It was expressed by Avatar15 when she was talking about how her classroom teaching was influenced by teaching in SL. It was the concept that was important in terms of creativity when bringing VWs into the classroom.

Avatar14: *I think it can help to make those relationships closer because you've taken the relationship beyond the classroom context. You go through stuff - traumas, triumphs – together.*

Avatar15: *I believe SL can be a good complement for f2f teaching and it gives you an extra time with your students that help to create class cohesion I believe.*

Both Avatar14 and Avatar15 emphasise that VWs helped them to establish closer relationships with their students. Their comments support the idea that this can be seen as a means of facilitating a good classroom atmosphere. The following excerpt further illustrates this aspect and highlights the relationship between students and tutors within VWs.

> *One thing that permanently I like about the idea of teaching within VWs is that how the immersive environment appears to create an equal relationship, reducing the thick boundaries between educator-student relationships. This is totally different from the atmosphere in which I was taught when I was at the university. I think this quickly happens in SL with dynamics of the environment and by moving away from typical modes of teaching and learning (Research journal excerpt 2011).*

4.4.3 Playfulness

Avatar16*: Teaching in SL has made my f2f teaching far less formal. I feel far more able to improvise now than I did when I only taught f2f.*

Avatar11*: I think teaching changes as the environment changes. Teaching in SL isn't like teaching in other spaces for me. It's very different - more playful so I feel my approach is fairly relaxed in the classroom.*

Avatar4: *I think the teaching in SL usually has to be active. The rationale for being here is that there are things to show people, activities that can be done. I think that's made me more dissatisfied with the routine stand-and-talk type of lecture in the physical world. I still do them to some extent, but I'm aware more that if this were in SL it would be more fun.*

For Avatar16, Avatar11, and Avatar4, it is the playful nature of the environment where their teaching has become more relaxed and less formal in the classroom. Typical comments from the interviewees indicated that fun characteristics of the environment appeared to be an important factor for them. This is important, because the playful nature of VWs has been identified by Ondrejka (2007, p.395) as "engines of creation" that lead to innovation. The data suggest that fun and laughter are pedagogically approached in SL. In this way, learning activities include the play characteristics of the environment. The emphasis, however, here is on having fun in enjoyable ways rather than the educator being funny. The discussion then takes a

different turn to nonverbal clues when the participants commented upon how they perceived similarities and differences between teaching in f2f and VWs.

4.4.4 Nonverbal Clues

In fact, given that there is consensus on the central difference as variations in the capability of facilitating interactivities in these environments, the following excerpts emphasise key aspects of similarities and differences when teaching in both VWs and f2f environments. With body language, educators can form creativity by capturing students' attention, creating atmosphere, emotion, and drawing in students.

Avatar7*: What problems might be happening in SL as you can't see the puzzled faces, or know why a student has just shot up into the air for example; having to manage the digital literacy up skilling in SL; managing multilayered communications in SL.*

Avatar12*: Many people say that you miss out on nonverbal cues. I think nonverbal cues are overrated.*

The comment from Avatar7 introduces the idea that VWs lack of gestures and facial emotions of users in VWs is significant since nonverbal behaviour of avatars might not display the actual nonverbal behaviour of the users, even this corpse-effect could be lessened by utilising the automatic generated set of gestures, postures, and facial expressions in VWs. Further, it may be completely possible in VWs to produce masks that present affectation or unreliable information. Whereas f2f environments comprise more cues with the availability of body language that includes all nonverbal signaling, movements and expressions detached from the statement of words. Furthermore, visual attributes of the person, projected through clothing, hair, jewelry, physique and other accessories somehow can give a sense of the persona, status, culture, mood and attitude. This multiplicity of cues including nonverbal cues can ultimately influence students' learning processes.

Avatar7 began with stressing this dissimilarity and talked about how each environment requires a different sort of practice in communication and literacy modalities. In other words, the data suggests that it might be more challenging for educators to adapt to these environments without providing a multiplicity of reliable cues and improving different digital literacy and communication skills for the sake of developing cohesion in human exchange. The challenge exists since VWs require, for

instance, a volitional act such as keyboard commands, which occurs mostly unconsciously when interacting f2f. That means virtual body language requires conscious effort. The problem thus appears to be how to capture nuances and sparks from the educators who are skilled at fueling the flow in communication that basically exists unconsciously in f2f interaction. The following excerpt highlights further this challenge.

> *Today I was talking about the educational possibilities within SL to the students who were being in-world for the first time. During my presentation, some avatars were sitting in the venue and some were just remaining standing with the head down avatars and listening to me. At one point, it appeared to me that I was not sure whether the students really understood what I was talking about, even though students kept interacting with me. There is the lack of non-verbal cues and fine control of avatar movements and facial expressions. Though students communicated with me verbally through text-chat, many clues were missing including eye contact, facial expressions, subtle body movements or hand gestures that may follow speech (Research journal excerpt 2012).*

For Avatar12, the effects of nonverbal cues on interaction are exaggerated. This might be due to several factors. For instance, although nonverbal communication affords to verify meaning in context, it may be easily interpreted without understanding a culture and its norms. However, her comment also suggests that VWs may be able to create new channels of communication that lessen the impact of nonverbal cues. To give an example, meaning and intention could be emphasised through the context, e.g. environment, the avatar, and situation in VWs in which the focus is upon common interest and similar passions. There is a great spectrum available for the users for self-expression in VWs. What VWs afford is a sort of embodied language that presents modes of expression which could be synthesised and articulated as part of virtual semiosis (Ventrella 2011, pp.27–29).

4.4.5 Virtual Faux Pas

Another difference noted by the participants was acts in VWs that might be socially awkward and tactless. The phrase came from Avatar5 when he talked about slips in etiquette or manners that could happen in VWs while activities took place.

Avatar5: *One young man, for example, gave himself the name 'Snippan'. This is the word children in Sweden use for 'sexual organ' of females. He turned up at the course launch with his avatar looking like a nubile young woman, with big breasts in a short*

skirt. However, this was a social faux pas in the circumstances. He turned up subsequently looking like an older man.

Avatar5: *Do I make a big deal of this? Of course not! My job is to teach them - and I don't discriminate against any kind of appearance or behaviour ... as long as it's not disrupting the experience for the class.*

As I stressed earlier, the avatar could be a way of expressing multiple personalities including forms of detachment. The avatar also allows the users to engage in varied distractions that could stand as a persistent external persona and lead to unlock a plethora associated faux pas. The comments suggest that one of his students was prone to visual appearance and tag that could be inferred as a virtual faux pas tag. Avatar5 is fully aware of its nature and because of this he has a positive assumption that the students would probably never act this way in person.

4.5 Theme of Trial and Error

The third RQ addressing how educators learned how to approach teaching in VWs was broken down into 5 sub-questions. The sub-questions included how they became a SL educator, whether they negotiate with other educators to construct their teaching approaches, including SL educators' community such as VWER, whether they follow any specific framework that informs their teaching, and their motivation to participate in VWs other than the requirement for a class activity.

According to the sheer amount of the data relating to this theme it seems that, perhaps not surprisingly, participants learned how to teach within VWs by immersing themselves in SL and doing it. The phrase came from Avatar7, Avatar16 and Avatar17 that indicates they have become SL educators by watching what others did then tried and repeated practices until optimum satisfaction was gained.

Avatar7: *Trial and error.*

Avatar16: *Trial and error - I watched what other people did, tried it out and decided whether it worked for me.*

Avatar11: *We were working it out for ourselves - learning how to teach in SL by doing it, really.*

Avatar17: *By trial and error. I spent a lot of time learning how to do things and tried different approaches.*

Avatar15: *Basically by watching others doing it. For sure - you always ground your teaching in what you see from others experiences and then you adapt it to your needs/situation.*

The majority of participants voiced similar opinions. The findings indicate that participants appear to take the trial and error approach where they discover what VWs can afford for them in an unstructured way. The data suggest that these participants describe themselves as being self-taught in terms of adopting VWs in their teaching, referring self-exploration of the environment. I therefore found that these participants develop a trial and error, error and revision process as central to their teaching, without the direct support or advice. The following excerpt illustrates a further example of learning about how to design a learning activity in SL.

> *Today, I visited the island of an institution in SL with my college and saw their "virtual story cubes" display. This gave an idea for my colleague who intended to conduct a project with the digital photography theme in SL for her students to create a story about how their university presence in SL supposed to be. The idea was that the students visit different locations in SL in a team and capture a variety of images, then harmonise with RL images if they wish and each theme create a cube with their pictures and illustrate their stories to other group of students. The winning group was rewarded with 2000L$. I showed my colleague how to create a cube with images and manipulate it by changing the size and she did the same, designed other objects and implemented her teaching practice (Research journal excerpt 2012)*

It is unlikely to come as a surprise to me as this often requires the dedication of the educator in time, effort and enthusiasm. Yet, perhaps innovative approaches require trial and error to fully understand what these environments might be able to offer for them. It's by trial and error, by experimentation, that educators scaffold their understanding and engagement with VWs. This theme exemplifies two dimensions. I now elaborate these in the following section.

4.5.1 Co-Creation and Collaboration

Some participants said that they developed didactic methods in VWs from educators involved within VWs and learned from each other. In other words, they cultivate their teaching design by collaborating with other colleagues to exchange ideas or to tackle issues as they emerged.

Avatar7: *My first sessions were with a colleague, in October 2006, so we planned together and delivered together, and it really helped to have each other for support. I*

started off thinking that was the best way to teach in SL - in a pair and that experience helped me learn about what works and doesn't work for students.

Avatar8: *When we are in SL - and co-tutoring together - we use IM quite a lot to help communicate without students seeing too many of the gears working.*

Avatar19: *I started teaching on this programme as a co-tutor - two of us teaching the one course - and my co-tutor was senior and more experienced, so I learned from her modeled behaviour.*

The data indicate that these participants come together to share their teaching strategies, to collaborate on the course materials, and most importantly, to support each other by being co-present in VWs. These participants have their own pedagogical voyage with a collective will. Their collaboration takes on various forms such as delivering the module together, helping each other to support, and using IM to chat and get feedback. To emphasise the influence of co-tutoring together, one participant states:

Avatar9: *I think if I'd have been working more with a colleague here regularly I might have been prompted to reevaluate and change what I did.*

Related to this, educators engage in teaching and learning while residing on the educator communities in SL such as VWER, ISTE and SLENZ. Participants found value in exchanging about teaching in VWs for their teaching strategies.

Avatar6: *Every week with educators. So I get a lot from VWER which gives me ideas how to frame some of the induction into SL.*

Avatar12:*I spent a lot of time at ISTE Island International Society for Technology in Education. I attended a lot of workshops in Second Life.*

Avatar14: *That's a great group. I find them really helpful if I want to find out what work has been done in a particular discipline. We frequently collaborate on and discuss projects together.*

Avatar16: *For myself at a private level I just love the community spirit here. I read a lot about teaching in SL and joined a number of groups the main one being the SLENZ group.*

The comments indicate that some participants are members of the educational groups in VWs and rather active in engaging with discussions of teaching and learning within VWs. They collaborated in pairs, in small groups, and as a community. The finding also indicates that some participants experienced a sense of belonging to a community

that was, according to one participant saying, *"we were all learning together and there was a strong sense of community"*, another saying *"I just love the community spirit here"*. Digging deeper into the data, the finding suggests that participants seem to appreciate participating in a virtual world community to get insights to foster their teaching skills in VWs. This is a significant finding since peer collegiality has an impact on participants' immersive experience.

However two participants stated that their participation levels have changed and lessened in relation to the length of time spent in SL and in becoming more proficient in virtual world skills.

Avatar7: *I used to belong to the standard mailing lists, but as the community grew (which is of course a good thing!) I found that the same conversations were coming up in waves, for example the debate about whether educators should have smartly dressed human avatars when working with students, and I stopped contributing, then stopped reading, and when I suspended the lists to go on holiday I just didn't pick up again when I got back. Now I try to go to conferences (as well as running them!) because I feel like I learn more from talking to people and hearing about developments in research.*

Avatar11: *When I first started using SL I was intrigued by it conceptually I suppose, and spent a bit of time in here exploring, meeting strangers, fiddling with my avatar etc. Now, I'm over that and don't tend to come in unless I have a class or event to attend.*

The comments indicate that once they felt they have become more proficient in their teaching skills in VWs, their contribution to the community lessened. Instead Avatar7 feels exchanging ideas in a conference would be more efficient and Avatar11 now only attends her class or event activities. As no more data was generated, more empirical data is needed to examine what characteristics of the individuals make them likely to participate in collaborative activities.

Likewise, any specific pedagogical models amongst the participants were not identified apart from the learning archetypes that I presented as the educators' implementations. However, it is worth noting here that one participant said, *"I would say I approached it overall in the same way I approach all my teaching"* and another participant: *"teaching in SL... Maybe not ... I don't think I approached it really any differently than any other tech to start with."* These data are good examples to indicate how participants approach the environment with different perceptions. While, first participant perceive SL as an environment where they can employ their

teaching strategies and challenge with them whereas second participant perceives SL as a sort of technology to "deliver" their teaching.

4.5.2 Continuing Professional Development

As being another motif of educators' involvement with the communities, I sought to find out their motivation to engaging within VWs other than the class activity requirement. This was important as motivation is considered broadly to be an essential factor that drives perceptions, behaviours and individuals' intention to experience any sort of environments.

Avatar9: *I actually like being in SL, whereas I cannot say that I like being on VLE.*

Avatar10: *In a general sense, networking is important for us as academicians.*

Avatar13: *I began to see how I could also learn things related to my professional development.*

Avatar15: *I think it is very important to explore new perspectives. So the events and seminars - it's amazing and brilliant*

The data indicate that these participants refer to their motivations with words such as "like", "networking", "professional development", and "new perspectives". The data indicate that these participants exhibit a willingness to engage together in SL presumably with some commitment and enthusiasm.

These comments indicate that participants' motivation involves utilitarian, hedonic and social dimensions. The utilitarian dimension of motivations is based on the participants' purposeful and rational values such as professional development. The hedonic dimension of motivations is based on participants' enjoyment - related motives such as entertainment, excitement, and happiness. That is why Avatar9 "likes" being in VWs whereas she does not feel the same when she refers to VLEs. The social dimension of motivations is based on interpersonal communication such as social networking or participating events or seminars in VWs. The findings suggest that participants' motivations for being in VWs other than the class requirement can range across utilitarian, hedonic, and social dimensions which also provide valuable insights to involve teaching in these social environments. The CPD of educators within institutions with respect to VWs is an issue in need of consideration if adoption beyond the course requirements is to take place.

4.6 Theme of Wow Moment

With my fourth RQ, I addressed how educators overcome potential students' resistance to VWs. I broke this question down into 2 sub-questions to look at which strategies tutors use if the students seem resistant to the environment, whether their attitudes changed over time. Students' resistance may raise some ethical implications for educators making use of VWs. My argument in this heading is not to discuss ethical dilemmas concerning to what extent students ought to be exposed in VWs, nor how negative behaviours of the students such as griefing play a role in the virtual performance of educators. Rather, I intend to discuss participants' thoughts and identify their strategies regarding the appropriate response to students' resistance towards the environment in order to see beyond initial concerns and barriers. Heeter (1995, p.200) states that one in four participants will always have difficulty in becoming involved in virtual reality. This does appear to confirm that there would always be some students who have difficulty to engage within VWs. Childs & Peachey (2011) identify a typology of types of resistance towards VWs presented by students. Considerations regarding "dislike" towards VWs have been explained in their study with some causative factors, mainly being a classification of cultural and value-based attitudes. Drawing on their study, I take the notion of "resistance" as a means of students resisting engaging, and challenging the idea of experience within VWs. For these students, immersing within the environment may provide them with a sense of presence, but lead to some feelings of stress due to various factors including technical barriers. Further, these students may find the idea of the virtual world to be inauthentic, and they do not develop any sense of connection with their avatars (Dickey 2011), and may not experience the feeling of presence. Thus, the feeling of exposure through being embodied within VWs and encounters with disapproved issues may lead to a sense of disquiet for some students.

It is not perhaps uncommon for educators to be confronted with some resistance from students to learning activities no matter what they are. However, when the learning activity appears to be unfamiliar or require different skills or expertise, as VWs do, some students may feel exposed or threatened. The following excerpts present some insights into why anxiety and resistance might occur.

Avatar12: *Scared, disoriented, uncertain of their ability, or thought it just unnecessary.*

Avatar4: *There is something about being in another reality that some people find disquieting, shocking.*

Avatar19: *I think there's a background licentiousness here that some countries find difficult.*

Avatar9: *It was the whole virtual world thing. She found it rather alien partly perhaps as part of not knowing what to do.*

This set of statements indicates that these participants' students felt unsettled at being in an unfamiliar environment. This is expressed by Avatar12 and Avatar9 in particular by stating that participating in the virtual world feels as if they did not become adjusted to the nature of VWs. For these students, it is the alien nature of the environment which could be located between the familiar and the unfamiliar and perhaps the underlying cause that leads to antipathy amongst students. However, the statements also indicate that there are some issues related to disapproving of the culture of the virtual world. This seems to be another causative factor according to Avatar19. This view has its roots in the transgressive and counter-cultural aspects of the culture of VWs and immersing in VWs may expose these behaviours. Her comment refers to a perceived reputation of VWs for licentious behaviours that may lead to reluctance in some students, whilst transgressive behaviour can be accepted as the norm in VWs (Trinder 2008). The data suggest that the causes of this anxiety are rooted primarily in the perception of discomfort at new social experiences.

A theme that permeates often under this research question is that of empowering the students to realise the potential of VWs. The idea is indicated by Avatar17:

Avatar17: *It's through their experiencing the possibilities that they sometimes come to realize the value...so not trying too hard to convince them, but just showing them what's there and letting them come to their own opinion which is usually...."Wow, I had no idea"*

The excerpt indicates an interesting point. Literally, the central position participants undertake is to illuminate what is available within SL and provide students with a "wow moment". The idea often connotes realising, or enhancing the validity of immersive experiences. Participants often indicate their strategies with words such as "reassurance", "support", "scaffolding", and "collaboration". The following excerpts

illustrate the way the participants identify strategies for dealing with students' anxieties. This theme exemplifies five dimensions.

4.6.1 Reassurance

Avatar12: *I had one man who was not doing his work... I emailed him. He expressed a lot of doubt about his ability. This is for kids he said. My son could do this but not me. He is now a business partner and we always meet in SL. I think the biggest thing I did for him, was notice that he was missing early on. Just that little bit of reassurance at the right time was the trick.*

Avatar11: *One activity we've found useful is to ask students to find SL spaces relevant to their teaching, in their discipline. That can really open it up for some students.*

Avatar14: *I made the exercises very relevant to what we were talking about in class.*

Avatar17*: If I had good reasons to take my f2f or online students into SL, ...I would be able to explain the rationale to them ...just like I (and any other teacher) should be able to explain why we are doing certain activities in the classroom.*

The data indicate that these participants indicate "reassurance" with words such as "relevant", "reason" and "rationale". As characterised by these comments, the participants often stated the value of providing a detailed underlying reasons for the use of VWs in students' learning experiences. Participants stressed how to achieve this primarily by developing relevant content and designing meaningful activities to their discipline. This typical approach was effective for Avatar11, Avatar14 and Avatar17 to inspire the particular set of learners who resist engagement, and challenge the idea of teaching and learning with VWs. Their comments support the idea that it is valuable to establish truly relevant outcomes to the students' studies to lessen potential "dislike" before embracing VWs for their classrooms. Further evidence of dealing with the students' potential antipathy towards VWs comes from other participants. The following are the strategies employed by the participants to reassure students and deconstruct their resistance.

4.6.2 Talking Cure

A typical comment from Avatar16, Avatar4, Avatar7, Avatar9 and Avatar12 considering students' reactions to learning activities within VWs appeared to emphasise letting students voice concerns, and express their anxieties. The "talking cure" phrase came directly from Avatar4 to explain his strategy to address this issue and minimise the students' negative impressions towards to the experience with

VWs. It is the idea that originally refers to psychotherapeutic approaches where therapy patients talk about themselves, their experiences, thoughts and feelings. Essentially it aims to relieve participants of psychological states such as anxiety with the help of talk therapy. The essence of the talking cure lies in someone's capacity for empathy in order to sense the feelings and behaviours of others. This also includes helping to trigger experiencing empathy for the self in order to become aware of alternative coping mechanisms. It is clear from its explanation that the effectiveness of this approach lies with individual willingness to identify, understand, and eventually change behaviour and thought patterns that lead to refusals to experience within VWs.

Avatar16: *I have usually discussed this sort of thing with them first to try to answer any problems they might have with the environment for one thing.*

Avatar4: *I have a friend who is a psychologist working in VWs. He talks about a "talking cure." You also need to give them a chance to talk through their reservation. Why we're doing it, what they've heard about it on TV. Why they think it might be too strange. It might not convince them, but it gives them the rationale for doing it and might address some of their concerns.*

Avatar7: *If they are resistant then I get them to talk about why.*

Avatar9: *I had one student. She found SL threatening a bit with her. I had some one to one sessions. I talked though with her what her concerns were and went online with her in the lab.*

The data indicate that Avatar4 consciously and others perhaps unconsciously take the talking cure as an instrument which appears to offer some relief from students' anxieties. Their comments suggest that the social nature of talking can help the reluctant students to better understand and change their thoughts and behaviours as the way that they organise their thoughts is perhaps considerably related to a verbalisation process. It seems that participants felt their responses may help the students to think further and presumably from a new perspective. Further, this process also includes encoding their thoughts in a different way that may become more coherent when the students speak and then hear what they say. This is not to say that the talking cure approach can be relied upon for ultimate decision-making, but participants' comments certainly suggest that this process may help students to understand their concerns and anxieties regarding the learning environment.

4.6.3 Scaffolding

Some participants talked about supporting the students with their experiences in VWs as a way of helping them to cope with their anxieties. **"**Support" was the code I applied most often in my initial open coding. Interview responses showed that the participants associated supporting with words such as "help", "feedback" "offer", "provide", and "scaffolding". Scaffolding in the sense that helping students to complete activities by supporting challenging aspects of the activity allows them to concentrate on more important aspects of the task. The participants were keenly aware of the need to provide adequate support and guidance throughout the learning process and towards attainment of learning outcomes to minimise potential antipathy that may occur amongst reluctant students.

Avatar6: *Scaffolding info as they work through activities, which build onto each other. The students make the decisions I just give feedback and facilitate.*

Avatar8: *Students also require a lot of support and scaffolding to move and make use of the environment the way the more experienced residents do.*

Avatar11: *I don't know that we'd try to persuade these students in any way other than giving them a chance to use SL in earnest as a student, to critique and discuss it with their peers and tutors, and just to consider it.*

Avatar12: *I offer a lot of help in the beginning. I also meet each one on the orientation island and wick them away from there.*

Avatar15: *I work on their avatar appearance with them. We build things, little objects together….What I do essentially is to support my students out of classroom hours in SL.*

Avatar19: *I overcame this partly by providing them with avatars that were equipped with the stuff they needed for their role-plays - outfits, implements etc.*

The data indicate that the students were supported by their tutors in different ways. For example Avatar12 prefers to provide great support in the beginning of their activities in order to facilitate students' adaptations whereas Avatar19 delivers avatars that were equipped with the stuff the students needed for their activities to minimise preliminary preparations. Likewise, Avatar15 helps her students with the appearances of their avatars so that they could construct more authentic and detailed characters. It is a good indicative of the intentions for helping the students develop presence within VWs.

Different forms of support being provided by the participants suggest that tutors' interventions may be required to progress the reluctant students through different stages of an activity. For example, initially, Avatar12 supports her students in exploring the orientation island and doing basic tasks by rotating around and monitoring students' progress. This helps to maintain the students' motivation for completing the task and in this way, the educator maintains supporting students to engage procedurally with the intention of the task. Notably, this exchange provides more information to students regarding what to do, yet it does not restrict them in terms of how to accomplish the tasks. Whereas Avatar19 seems to provide more structural support for engaging students in this way that often requires reasoning beyond conceptual understanding. In this exchange, students engage conceptually in-world by considering how and why they intentionally experience concepts applied in the particular narrative and it helps them to link their understanding of the content. This may also involve consequentially recognising the usefulness and impact of the desired outcomes. Supports from Avatar8 and Avatar11 appear to involve critically questioning the appropriateness of using the environment for attaining desired ends to become a more experienced user. The findings suggest therefore that educators can support students in being engaged with VWs procedurally, conceptually, consequentially, and critically.

4.6.4 Peer Collaboration

Some participants also mentioned involving reluctant students by working together with them or pairing the students with someone who appeared to be more experienced with the environment as a way of dealing with the students' resistance. "Peer collaboration" directly came from participants and it was the code I applied often in my initial open coding.

Avatar14: *The older students - mature aged students were more resistant. But pairing them up with someone more skilled seemed to help. I also paired the students up initially to control one avatar. In this way they negotiated with each other to solve issues - technical issues, etc.*

Avatar12: *I also connected him with a former student who he could learn from, and realize that he had applicable skills.*

Interview responses show that the participants associated peer collaboration with words such as "pair up", "connect", and "negotiate". The data indicate that the

participants felt the reluctant students could be motivated through peer-to-peer interaction in addition to individual engagement in the learning process. These comments are indicative of allowing the students to observe their peers or pairs and retrieve their performance that leads to informational exchange and influence to occur between them. Within this, the process of internalisation could occur where the less experienced or reluctant students learn skills such as controlling an avatar and improving their understanding from their peers. From the participant's point of view, helping each other is the intention for an individual who seems less motivated to learn to perform an activity together with their peers. That is, an effective engagement with the activity not only occurs individually as part of the process for motivating students, but participating collaboratively to involve those students as well. These comments suggest that reluctant students' intentions to perform within VWs can be initiated and motivated at peer level through collaborative learning interaction, which is driven by the sharing of joy. The students then may appreciate the fact that their more experienced and skilled peers trigger them to diminish negative psychological reactions.

4.6.5 Emotional Investment

One participant mentioned that reluctant students' motivation could be accomplished through the emotional connection the student feels to the characters and events in VWs. In addition, another expressed the fun factor that may help to encourage those students. This aspect has also been stressed by the interview data earlier in Section 4.4.3.

Avatar4: *I think helping students develop presence is another thing. I give them time to play with it, and take them to places that might have an emotional effect. Japanese garden or the Taj Mahal or something. I think that the emotional connection with the avatar becomes stronger so their sense of presence does too.*

Avatar12: *I invite them to try out something new. I have them do fun things as a group. Ride mountain bikes, parachute.*

The comment from Avatar4 indicates that emotional connection could be invested with the character creation. It is based on the idea that the opportunity to personalise their characters by manipulating their appearance, changing its clothes and accessories might be engrossing for the students. The data suggest that by encouraging the students to connect with their avatars, in other words the more that

avatars become theirs, the more this gives them close attachment to the experience within VWs, even though this sense of embodiment could be disconcerting or challenging for many students, in particular when they immerse for the first time (Childs et al. 2012, p.254). This requires them to evolve from "this is my character" to "this is me". In addition to that, the virtual world in which the character lives needs to promote emotional investment. The examples of Japanese garden or Taj Mahal are good indicators of Avatar4's attempt to help students to invest robust emotion and establish a stronger sense of self. The emotional connection with the space is needed to heighten the sense of being in the environment. Another point Avatar12 takes into account is the enjoyable character of doing activities within VWs. Her comment indicates that she deals with anxieties through fun so that the students continue feeling this emotional investment and keep their ongoing interest. The data suggest that becoming emotionally invested with both the world and the character may help to lessen negative reactions. However, this may raise questions if the students become too attached to these places, and perceive their avatars as an important aspect of their identity. Encouraging the students to invest more in their avatars therefore requires an additional consideration for the educators. Surprisingly none of the participants stated they would avoid much of the resistance to the use of VWs by having all in-world sessions optional. This suggests that interviewees are likely to perceive that VWs offer privileged learning experiences. Consequently, the interviewees' excerpts suggest that educators need to harness a culture of experimentation, creativity, and trial-and-error, along with a deep understanding of social and technological issues occurring in VWs in order to fully understand the opportunities and potential that VWs offer for pedagogy.

4.7 Introduction of the Module

The class described in this section consists of using physical classrooms, a VLE, web-based resources and SL in a module for first year undergraduate students in a university in the United Kingdom (UK). In other words, the module is a campus-based class involving face-to-face sessions with the use of the university's VLE, and interaction with other Web 2.0 resources such as reflective journals, e-portfolios and wikis, as well as the virtual world of SL. The university provides a secure online environment in which students not only have flexible access to their courses via the Internet but also have facilities that engage them in processes that enhance their learning. The virtual world of SL is being used as part of a blended IBL approach, which I discuss in Section 2.10.6.

The module, Information Literacy (IL), was a core part of the level one-year of an Information Management (IM) degree offered at the Information School in the university each year. For the academic year of 2011/12, the class was primarily led by Sheila Yoshikawa (the module coordinator, MC), and two teaching assistants of whom I was one. I assisted purely with in-world sessions. My role was to assist the students with their learning activities that took place in-world and to answer their questions to provide support to minimize potential chaotic preliminary experiences within VWs. In addition, there was one internal tutor (TutorN) who covered the topics of "information" and "information behaviour" and 2 librarians who work in the same institution and a librarian (Pancha, TutorP) who was geographically remote and worked in a different institution in the UK. The class consisted of 43 students of whom 22 were originally from outside the UK; 19 were female and 24 were male. I present sites and participants of the module with a diagram in Figure 15.

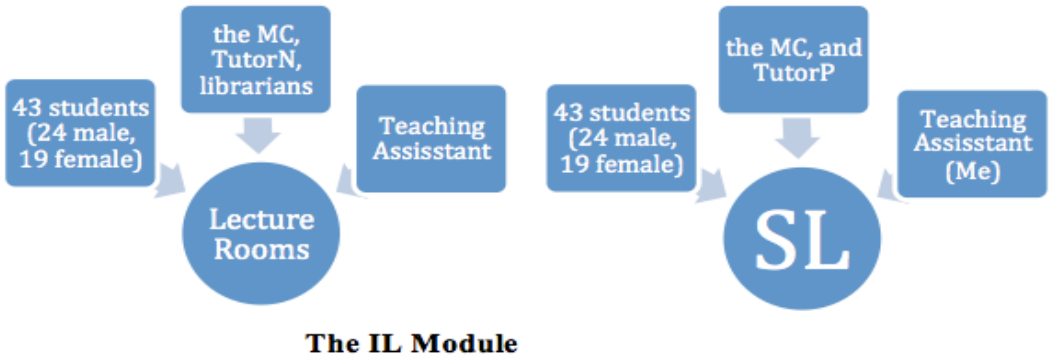


Figure 15: Sites and Participants of the Class

The primary aim of the module is to enhance the information behaviour skills of the students and to help them to become information literate by focusing on both practice and theory of IL and information behaviour. The goals of the module are outlined by Sheila Yoshikawa in the course material as:

- To enable students to analyse their own information behaviour and identify the ways they become more information literate.
- To be aware of some key IL models and theories.
- To develop some strategies for seeking and searching information.
- To be able to apply an evaluation framework to information resources.
- To be able to interact with others to explore their information behaviour and needs (Appendix 6: Outline of the Module).

The module assessment is entirely based on the coursework with 50% involving students' research interviews in SL, analysis of their performance as interviewers and analysis of transcripts in relation to research.
The module structure comprised:

- An introductory session consisting of an outline of the module and its mode of working.
- SL tutorial sessions in which students explore the island, practice moving, communicating, manipulating their avatars' outfits, and playing with objects.

- Further SL skills development (including taking pictures of their avatar to share) and information behaviour exercises in SL and preparing their group activities which form the basis of the exhibits, mini islands, in SL.
- Practising interview techniques both in the classroom and SL and conducting interviews in SL.
- A plenary session in which the students take part in an information behaviour analysis workshop and compile an e-portfolio.

I present the module components in Figure 16 in a non-sequential way.

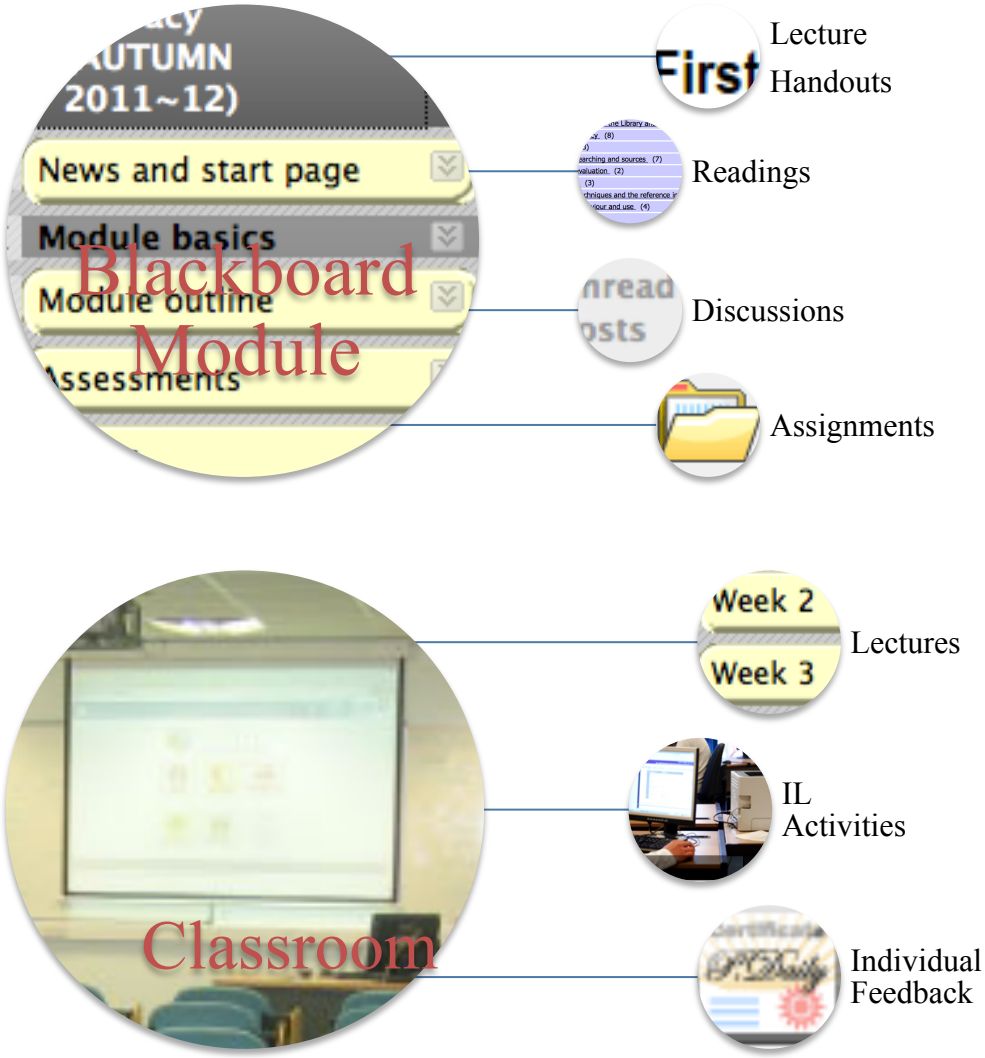


Figure 16: The Module Components.

Further to the module components, I subsequently describe and detail the learning activities (weekly syllabus content of the IL module is provided in Appendix 6).

4.8 Descriptions and Details of Learning Activities

4.8.1 Week 1

The first part of the introductory session included presenting aims of the IL module, a model of IL i.e., SCONUL (Society of College, National and University Libraries), Seven Pillars of Information Literacy Model (SCONUL 2011), and the mode of working, i.e., lectures presented by Sheila Yoshikawa and others. Also included were individual and group exercises, the use of the university's VLE and SL in the module, and exploring the concept of IL. This included creating exhibits, interviewing, and exploring meanings of IL in a virtual world. This continued with delivering information regarding assessment and asking for registration for SL. The last part of the introductory session included practical individual exercises during which the students demonstrated their areas of strength and weakness in IL. For the practical activity, the students sought to illustrate their IL skills in successfully finding, using, and evaluating information by giving a short presentation in the classroom f2f.

Sheila Yoshikawa gave a presentation with regard to the meaning of some of the seven pillars of the IL Model in the following week. This model was first published in 1999 and has been updated and expanded over the years. The Model has been adopted

by librarians and educators across the world as a means of clarifying IL to their learners. The students specified the information needed and constructed strategies to improve their ability to:

- Identify.
- Scope.
- Plan.
- Gather.
- Evaluate.
- Manage.
- Present information.

The students studied some of the seven pillars in detail in the practical part of the session and prepared both individual and group presentations. In the individual task, they were asked to find information about "expert" conceptions of "information management" by using search engines and asked to justify the selection of their favourite resources. In the group task, they were asked to discuss each group member's favourite item and find out about the different strategies that had been used, the different sorts of information found, and to summarise what they now acquired about experts' conceptions of information management and that they had already known. Besides, the students formed groups and had 60 minute SL tutorials arranged during the week.

4.8.2 SL Tutorials

The students had an SL tutorial of up to an hour in the computer lab where the SL viewer was installed in the second week of the module and used SL for their task throughout the module. The attempt was to facilitate students to personalise their avatars and contextualise themselves in the environment using the communication channels available, i.e. local chat and IM. A couple of students stated that they had experienced online games, yet none had experienced either SL or any other VWs when asked informally. The majority of the students had humanoid avatars, a few had non-humanoid avatars, one had a robotic avatar and one had a vehicle avatar. In SL tutorials, the students began to develop their basic SL skills such as communicating, moving on the island, manipulating their avatars' outfits, and practising wearing

objects and rezzing items, i.e. dragging items out of their inventory folder onto the ground. Figure 17 provides a glimpse of the orientation tutorials.

Figure 17: A Glimpse of the Orientation Tutorials

4.8.3 Week 3

Sheila Yoshikawa presented a session regarding mind mapping in order to develop the students' ability to evaluate the effectiveness of search and retrieval strategies. It was emphasised that these techniques could be helpful in key aspects of IL, in particular identifying and planning. In the practical exercise session the students formed nine groups, each of four or five. Each team was allocated an information problem comprising one of the following.

- Is the "Google generation" really bad at searching for, and evaluating, information?
- How reliable is Wikipedia?
- Should Facebook users be concerned about their privacy and safety on Facebook?

As there was only one computer lab, i.e. a limited number of computers in which the SL viewer was installed, nine teams were separated into three groups. While three teams were working on their task in the computer lab, the other six teams worked on

their information problem in the classroom. The teams alternated with each other after they had finished their work. In the lab, teams were introduced to the exhibition task (Appendix 7: Exhibition Activity). In other words, each team was given a mini island by Sheila Yoshikawa for their information problem activities. The intention behind giving the students a mini island was to give them a sense of "ownership", to provide a challenge by which they might improve their concentration, to enable them to learn teamwork skills through the activity, and eventually to engage them more effectively. The students practised auditing their team's skills by positioning a house on their mini island and adding any other objects that might be relevant to their task. Furthermore, some "freebie locations" in SL, in which some items are freely available, were introduced in order to encourage them to visit and take some objects and furniture for their islands. Figure 18 offers a glimpse of each team's mini island.

Figure 18: A Glimpse of Teams' Mini Islands.

4.8.4 Week 4

An internal lecturer (TutorN) from the same department introduced the concept of "information" and "information behaviour". The students learnt essential concepts underpinning IL and explored the concept of information, knowledge, and data and how they differ from each other. TutorN subsequently explained several models of information behaviour. In the practical session, as they had done in the previous week, six teams continued to work on their information problem task in the classroom, and three teams were introduced to the Opinionator exercise in the

computer lab. The Opinionator is a 3D tool that enables the students to express their opinion regarding given information by moving onto it. A pie chart then appeared in the middle showing what percentage of students had chosen each option. Sheila Yoshikawa, plus another lecturer from a different university (Pancha) and myself (who all presented in SL) asked entirely in text-chat if what was given was data, information or knowledge. The students were then asked to move onto the Opinionator and to type into text-chat why they had chosen that option. They continued to work on their exhibition task in SL for the remaining time after which the teams alternated. Figure 19 illustrates the Opinionator activity.

Figure 19: The Opinionator Exercise

4.8.5 Week 5

There was only practical activity in this week. All teams finished their information problem activity and prepared a PowerPoint presentation to be uploaded into SL in the classroom and they then worked on their exhibition on the mini islands in the computer lab. Furthermore, the students uploaded their presentations onto their islands, prepared some brief information about their presentation and put this onto a notecard in SL. After this, they prepared questions to put into a multiple choice quiz ball to get visitors' feedback and opinions regarding their work in SL. Figure 20 provides an example of their work.

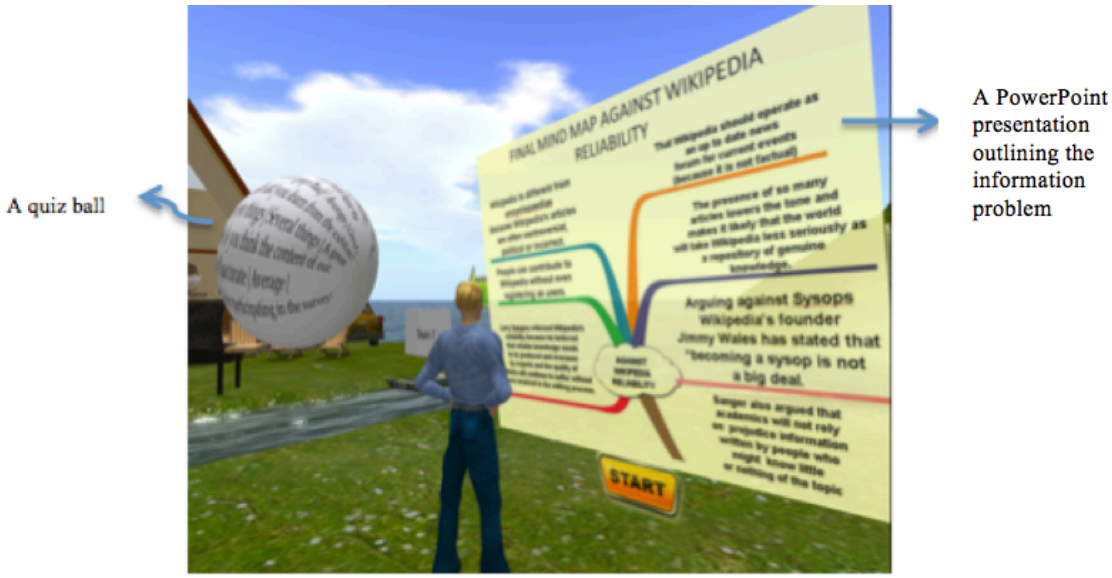


Figure 20: A Team's Work on their Mini Island

4.8.6 Week 6

Sheila Yoshikawa introduced some interview techniques for an effective interview and the students formed groups, which consisted of an interviewer, an interviewee and an observer, and practised f2f interviewing in the informative session. Sheila Yoshikawa and a lecturer (TutorG) from CollegeG in USA formed a project for students' interview activity. The intention for Sheila Yoshikawa was to involve a small number of the college students to be interviewed. Likewise, TutorG attempted to give CollegeG students an experience of connecting in real-time with a peer in the UK using a VW. For this purpose, Sheila Yoshikawa initially created a Facebook group page, (see Section 4.11.6 for further discussion), for the module students and interviewees who were willing to participate from CollegeG in order to enable them to socialise and get to know each other.

Two different activities took place in the practical session. While six teams were learning more about an information behaviour project and completing a questionnaire, three teams practiced interviewing in SL after which teams alternated. The students were ultimately asked to analyse interview transcripts in relation to real life "information behaviour" research models, and reflect on their performance as interviewers. Figure 21 illustrates an example of students' SL interviewing which was a rehearsal for their SL interview activity.

Figure 21: Rehearsal Interviewing in SL.

4.8.7 Week 7

Sheila Yoshikawa presented detailed information regarding IL models and the research process and ethics in the informative session. In the practical session, the students were introduced to a model and asked to complete a questionnaire. The students were allocated a potential interviewee. The initial attempt was to involve the college students to be interviewed yet interviewees were by and large recruited by Sheila Yoshikawa through her personal contacts due to the fact that interviews did not take place at the scheduled time as the CollegeG had the Thanksgiving Holiday, which is a national holiday, celebrated primarily in United States and Canada. The students were then asked to contact their interviewees for their SL interview task by email. In addition, Sheila Yoshikawa gave a presentation regarding the module in a virtual conference that took place in SL. She introduced the pedagogical approach that was constructed for the module, the rationale for using SL, the information problems that the students worked on, SCONUL 7 Pillars Model, and Modes of IBL. She then took the participants to visit the students' work on the island. Figure 22 provides an example of Sheila Yoshikawa's presentation.

Figure 22: The Presentation by Sheila Yoshikawa for the Conference

4.8.8 Week 8

The students studied information behaviour models theoretically and also completed an information searching activity in the classroom. They were required to read three articles allocated to the 3 different groups. These articles would then be read in order to discuss them in the classroom in the following week. Some students conducted their SL interview after the class session but others chose to complete this outside class at a mutually agreed time with the interviewee.

4.8.9 Week 9

Sheila Yoshikawa introduced the concept of "phenomenographic research" into the concept of IL and provided an example of a PhD study, which investigated the context of IL in a school library. In the practical session, the students gave a presentation regarding the allocated article that they had read the previous week. They continued to conduct their SL interview task in their spare time.

4.8.10 Week 10

Sheila Yoshikawa introduced further information behaviour models and the first assignment in detail. The students were required to produce a report in which they analysed interviews in relation to research models of information behaviour, and reflect on their performance in interviewing. In the practical session, the lecturer first introduced data analysis techniques and the students then went on to give

presentations from the previous week and practised analyzing data from an interview. They also continued to conduct their SL interview task in their spare time.

4.8.11 Week 11

Sheila Yoshikawa introduced the second assignment in detail, which was a structured reflective report on students' development of information literacy, i.e. e-portfolio. The aim was to demonstrate the students' understanding of IL, information and information behaviour and reflect on their process of development as an information literate person. In the practical session, another lecturer from the same department gave a workshop regarding the preparation of an e-portfolio.

4.8.12 Week 12

There was no actual lecture or practical session so the module ended for the autumn semester. Meanwhile, the exhibition was visited by the students and TutorG from the college in the USA. Figure 23 depicts their visit to the exhibition area.

Figure 23: A visit by the College to the Exhibition Area.

In the following section, I present the findings from both observations in the classroom and SL and from the interviews with the tutors. I elaborate and present further evidences from the observations and I describe pedagogical implications of the themes and how I arrived at them in detail.

4.9 Inquiry Based Learning Approach

As stressed earlier, the central pedagogic approach for the module is IBL and it suggests that the students engage with the module more deeply. The aim of adopting the IBL approach in this module was to stimulate students' curiosity and engagement (Levy & Petrulis 2012). Sheila Yoshikawa aims to convey this by encouraging the students to develop their own arguments in order to become information literate along with using a mix of technologies. The emphasis on this module explores existing knowledge and discovering the discipline, yet the IBL approach is associated with SL activities because it focuses on the following:

- Analysis of the students' own information behaviour in SL.
- Identifying ways in which they can become more information literate in SL.
- Interacting with others to explore their information behaviour and needs in SL.

My own exploration of the meaning and practice of IBL in this module are based on the activities and use of learning environments. With the activities for instance the students explored and presented their existing conception of information behaviour through a mind-mapping exercise, working initially as individuals and then in small groups. They then presented their PowerPoint slides in SL and reflected on the development of their conceptions. The reflective part of the activity was Sheila Yoshikawa's use of cognitive teaching approach where the students experience the environment and reflect on their experiences. Arguably, it is possible to infer that SL took a limited role in this mode of IBL. This is because all three environments, classroom, Blackboard and SL, play a role in the activities and the module is a campus-based class with weekly f2f sessions. Likewise, the role of IBL perhaps is limited and "information-oriented" (Levy 2008; Webber 2010), since the ultimate focus was primarily on exploring existing knowledge and interacting with others. I also observe that pedagogical strategies of Sheila Yoshikawa remain rather directed, tutor-led approaches in which she set the questions, e.g. information problems, and offer a great deal of guidance and support on the students' learning process, though within an authentic and challenging experience. The challenge lies in the sense of unfamiliar environment of SL, and unfamiliar interview participants, interviewees in SL.

4.10 Observation of the Island

As the inquiry based approach underlies the pedagogy, the island does not have any lecture halls or sit-style classrooms in which the students may have sessions in a traditional way, i.e. sitting at desks, listening to lectures and watching the PowerPoint presentations. Instead, the island has a variety of spaces in which the students can have activities or the visitors can have events, meetings and discussions. The island is therefore a working and meeting space for the students and the others. Despite the fact that there are specific areas in the island, which are designated for learning, the entire island could be perceived as a learning space, as the whole island provides facilities for meetings, formal and informal learning and socialisation. As Minocha (2010, p.119) states based upon the works of Felix (2005) and Grummon (2009), this de-centred design of the island underlines the principles of socio-constructivism where the whole island is perceived as a learning space for learning together and collaboration rather than highlighting classroom activities.

What is also charming for the island is that the space provides student residences in order to give them a sense of ownership, i.e. something they might feel belongs to them. The island is also designed considering newbies so it is not a very challenging or complex environment, but relaxing and welcoming. These features imply that the social constructivist view has a strong influence on the design of the island and pedagogy. The design of the island thus reflects Sheila Yoshikawa's pedagogical beliefs and teaching approaches. In addition, having several venues for the entertainment and relaxing, warmth atmosphere on the island and a specific stylish design of the island reflect Sheila Yoshikawa's personal character into the place.

4.11 Observations of the Activities

In the following paragraphs I present my initial observations of the activities with the related data excerpt. I start with SL tutorials, continue with the exhibition activity and end with the interview activity.

4.11.1 SL Tutorials

Observations of the SL tutorials involved various reflections. Students learnt to chat to each other using text-chat, to become a member of the module group to be able to

rez objects on the island, to walk using arrow keys, fly and sit, to buy boxes and find them in their inventory folder and practice wearing clothes. In the very early stages, it all seemed to be a chaotic start as some students struggled but later the tutorials went well. In general, immersion within the virtual world was varied amongst the students. To give an example, one of the students asked if she could die in SL or another student asked if I had read all the books in my SL office. Although the majority of the students preferred human looking avatars, a few preferred animal, robotic inanimate object avatars. Some avatars appeared as fluffy clouds but the alternative readily available avatars were given by Sheila Yoshikawa for contingent circumstances. Sheila Yoshikawa took a group of students and toured the island, which the students found attractive. There were some technological difficulties in these tutorials. For example, the teaching island suddenly became unavailable in a tutorial and a different educational island was visited in this unit of analysis. Some computers often crashed or became frozen which was distracting for the students. One student was in the basic mode of SL viewer and unable to practice learning activities for a while. There were also a couple of avatar visual issues. One student complained that her avatar seemed cloudy and vague and she struggled to interact with the others. Observations of the tutorial sessions therefore indicated that SL activities would be far more fragmented than expected, due to the computers crashing and requiring to be re-logged in the viewers. In the following week, students started to get used to the environment and some of them helped each other for the SL tasks but they preferred the voice in the computer lab rather than in the text in SL. Conversations rarely happened between the avatars in-world, often within pairs in the computer lab. It was therefore challenging to maintain focus in a sole communication mode. The students were encouraged to use text-chat and read the notecards for the next weeks.

4.11.2 SL Familiarisation

The students experienced how the Opinionator operates and they visited some locations to buy various items such as houses, trees, a quiz tool or a PowerPoint presenter for their island for free. The discussion that took place in-world was about asking the students if the given statement was data, information, knowledge, it depends, or none of these, and standing on the coloured box of the Opinionator. A pie chart had appeared in the middle showing what percentages of the students had chosen each option. The students then discussed why they chose their particular

option in text chat. They initially had difficulties understanding the purpose of the Opinionator. For example, the following conversation that took place in text-chat indicated the challenge regarding environmental and object familiarity.

Data Excerpt #1

Pancha: How would you describe student feedback for a course?
Pancha: if you walk to the coloured section you think is best
Pancha: then you should see a piechart in the middle...
Pancha: you need to stand on the coloured bit of the section :-)
Sheila Yoshikawa: AvatarA you need to get over there!
Sheila Yoshikawa: great
Sheila Yoshikawa: AvatarB you don't need to sit
Pancha: if you just stand, yes
Sheila Yoshikawa: just stand on the coloured bit

Pancha introduces a question to trigger the discussion and stimulate the students in order to consider if student feedback for a course would be data, information or knowledge and illustrate their opinions by moving onto coloured segments of the Opinionator. However, as the data indicates, Pancha feels that the students could not figure out what to do for a while. Here, AvatarA went to different direction, AvatarB chose to sit on the segment, which in fact was not required. This is an indication of the students' unfamiliarity with the environment and the activity, which I also touch on in Section 4.13.2 with the emerging theme.

4.11.3 Involvement with the Exhibition Activity

In week 5, teams finished their work on their mini islands for the exhibition, i.e. decorating their mini island by putting in some trees, furniture, uploading their presentations into SL, preparing a quiz-ball for the visitors to get feedback for their work, and writing an informative notecard for their island. It was observed that some were engaged fully setting up their mini island, which I elaborate in the interview session with the emerging theme. One team noticed that another team had done something interesting and were inspired by this idea and then applied it to their mini island. It was also notable that some team members started interacting more in text chat with Pancha, who was available in-world, and asked more questions seeking help which might indicate becoming familiarised with the environment by the students over time.

4.11.4 Flow of Conversations from the Interview Practices

The following week, the students practiced interviewing in pairs in groups of four both f2f and in-world supervised by the observer. The goal was to discover more about the interviewee's information behavior in relation to the specific information needed (Appendix 8: The Interview Activity). The aim of the observer was to provide feedback to the interviewer on what went well and what went less well. It was observed that more informative views emerged in some instances in-world in accordance with f2f interaction. This is because the students would have more time in SL to think what to write in text-chat. Table 6 indicates these differences, by comparison, amongst the flow of conversation both in f2f and in-world.

Data Excerpt #2

Classroom		**Second Life**	
The interviewer	The interviewee	The interviewer	The interviewee
Q) Did you have a starting point for trying to find the information, like a search engine, website or book? Q) Ok, why do you always start with Google? Q) So you found the information source you used for your assignment using only Google?	A) Yes I tried Google well I always look up Google when doing any research A) I don't know if I have any particular reason and Google has many sites linked to it too so I just check to see what I can get A) Yes	Q) Do you always start with yahoo and Google scholar? Q) Right, how do you think that the articles that you found are reliable? Q) So you look at whether it is cited or not	A) I use the general search engine first, and I found out if there are academic articles in the Google scholar, those search result will appear on the top, then I click on those articles and explore. A) I try to look at the number of other academic articles that used it as reference A) Yes, and also whether the writer is come from a famous university with a high university ranking

Table 6: Flow of Conversations both in f2f and In-world.

This is not to say that the environment, SL, itself enabled the students to develop communication skills, rather to illustrate the contribution of SL to students' communication by deepening their understanding of the disciplinary concept.

4.11.5 The SL Interview Activity

Through week 8 and 10, the students did interviewing in text-chat in SL in order to find out more about the interviewee's information behavior in relation to the specific information needed, for their first assignment. The interviewees mainly were individuals, allocated by Sheila Yoshikawa, from different disciplines and different institutions for those who had agreed to conduct their interviews in their spare time. For those who conducted their interviews in the computer lab with a set time, interviewees were individuals from the college in USA. I was with the interviewers in the computer lab coordinating students with their allocated interviewees but was not involved with their interviewing process. In the interviewing process, the interviewers faced some technical difficulties such as finding the interview location in SL or having a lag in SL. In addition, SL gave a warning, when the students had almost finished the interviewing, indicating that the island would go into maintenance soon. A couple of students therefore could not entirely finish their interviews. However, one student found a quick solution and asked the interviewee to give his/her email address in order to complete their interview by email.

4.11.6 Facebook Group Page

As noted earlier, Sheila Yoshikawa created a Facebook group page for her students and their potential interviewees as a way of introducing each other and social networking. Facebook is a social network site (SNS), which enables individuals to construct a profile and share and view any content within bounded connections across geographical space and time. When you "friend" someone on SL you are still restricted to a limited amount of information on their profile as you cannot access an avatar's social network. However, once you become a friend on Facebook someone's personal content becomes visible and you can view their content, which might include multimodal implications such as using images, audio and video. Further to this, sharing photos on Facebook is often seen as an affirmative credential and provides evidence of a certain kind of life and lifestyle (Davies 2012, p.27) and Sheila Yoshikawa feels that a group page on Facebook would be great opportunity for the

students and their potential interviewees for getting to know each other and staying in touch. The presentation of a self in a new cultural and social space, e.g. Facebook, is beyond the scope of VWs context study but this acknowledges that Sheila Yoshikawa's intention here is to invest in how Facebook offers "an additional space for being" (ibid, p.28). Within the paradigm of SNS I see the Facebook group page as a social context that might play a role for fruitful interactions in this module, while SL seems to offer further opportunities as a social environment "to stimulate conceptual change in learners' thinking" (Webber 2010, p.64).

4.11.7 Typology of Engagement with SL

As teaching approaches within SL also have links with educators' engagement in the teaching process, it is essential to underline Sheila Yoshikawa's approaches in order to include different style of engagement. The role of educators as facilitators and the importance of learners' engagement are given strong emphasis within VWs. Failure to engage students with the learning activities might cause disappointment amongst learners with their educational outcomes. With the emergence of VWs, it is considered that students' willingness to participate in activities increases and this contributes positively to the expected learning outcome (Childs 2010). Engagement in SL can principally be categorised as experiential, role-playing, diagnostic, problem solving, demonstration, collaborative, constructive, skill building and gaming (Richter & Anderson-Inman 2008, p.5). Sheila Yoshikawa's teaching strategies for this module mostly involved the typology of engagement, perhaps except for role-playing, problem solving and gaming. For instance, Sheila Yoshikawa applies:

- Demonstration engagement by showing a view of the island and presenting the subject material.
- Collaborative engagement by encouraging the students towards a level of collaboration.
- Constructive engagement by engaging her students to design their mini islands and characters.
- Diagnostic engagement by engaging the students to ask questions through quiz balls.
- Skill building engagement by focusing on interviewing skills.

- Experiential engagement by enabling her students to immerse in carrying out interview experiences.

During this study, I observed that some learners seemed not to develop deeper or greater sense of presence and embodiment, even though some tasks require skills such as being able to manipulate objects easily when designing their mini islands. Sheila Yoshikawa did not expect all students to attempt to develop deeper levels of immersion as she asked the teams to choose one or two of their team members for the design of the mini island and uploading their work. This may mean that she feels not all the students would be able to develop a great level of experience in every dimension.

4.12 Application of the Diffusion of Innovation Model to IL Module

As researchers and educators, tutors of the module could be considered early adopters of SL. This is because I observe considerable typical technical skill, a willingness to take risks, and significant interest in exploring the affordance of SL within the blend nature of the module from Sheila Yoshikawa. She was fully aware of potential risks before engaging in the IL module with SL, as she is academically active in SL and the institutional department has considered adopting SL as a learning and teaching environment since 2007. The recognition that teaching approaches taken appeared to allow learning experiences to be more of an exploring, experimental and discovery nature is an indicator of Sheila Yoshikawa's enthusiasm about the potential of SL and that she is actively willing to incorporate it within her teaching. It is my interpretation that Sheila Yoshikawa could be considered a visionary: process oriented, risk taker, willing to experiment, technically adept and horizontally connected. My observations indicate that Sheila Yoshikawa may have a great investment in the students' learning process as a risk-taking early adopter in the unit of the IL module.

The remainder of this section details the themes that emerged from the interviews with the elaborated data. The subsequent themes expand upon the other factors that influence the leading theme.

4.13 Semi-Structured Interviews Findings

The interview data gave an additional element of qualitative data that supplemented the whole picture of designing teaching strategies and the utilisation of VWs in the classroom. As I discussed in Chapter Three, I approached the data with a thematic analysis to identify the themes, sub-themes, and any inter-relationships between the themes. I describe the characteristics of each theme, and present detailed excerpts of data together with my description, analysis and interpretation of that data (Wolcott, 2009). From each of the theme and subthemes in the analysed data, I utilise my interpretation of the data to answer my RQs and clarify relevant pedagogical implications. Where appropriate, I describe how I approached the data and ended up with each theme.

Analysis of the data has yielded the themes of:

- Experiential Learning
- Uncertainty
- Dynamic Relationship

Some of the these labels, such as experiential learning, are simply recognisable as themes which frequently emerged in this sort of qualitative research but other phrases, such as uncertainty, rather reflect the situated context of this research. I interpreted the theme of experiential learning which I most value and therefore explain it first. The remainder of the themes therefore are not listed hierarchically. I now elaborate and present further evidence of each of the themes in turn.

4.13.1 Theme of Experiential Learning

Experiential learning is the theme that was obvious in my interpretation of the data both in terms of the learning outcomes and teaching activities, which embodied this theme, and their significance. I argue that everything the tutors attempted to employ both in the classroom and SL was somehow associated with experiential learning, and in other sections of this chapter I indicate how I interpret each theme as it relates to this concept.

It can be argued that ILB and experiential learning are similar in that both adopt a constructivist approach to learning and teaching. While there is a certain overlap

between the two pedagogic approaches, at its core IBL involves opportunities for learners to frame their own lines of inquiry, and raise open-ended questions. Levy and Petrulis' (2012) framework of IBL in the undergraduate context identifies that students may be exploring the existing knowledge base or creating new knowledge, with a clear focus on intellectual inquiry. In essence, the approach is intended to foster a self-determined process of inquiry. Therefore the term often includes broader spectrums of approaches, and it is perceived as a repeated route of the inquiry process where inquiry starts with posing a question and ends with reflection (Lameras et al. 2014). Experiential learning also involves the student constructing their own understanding, but with the focus on learning through observation and practical experience, bringing to the fore the concept of "learning by doing". From a pragmatist perspective, experiential learning seems to provoke wonder and engagement in learning activities.

Immersive experience that drives sustained engagement in VWs emerges in a number of ways. For instance, interactions with people from different cultures and countries as well as manipulating identity and objects in VWs and sharing experience with others concurrently in 3D virtual environments are just a few examples. Beyond this, teaching with immersive experience caters for four particular learning domains as I indicated in Section 2.12, which are cognition, dexterity, socialisation and emotion, originally physical world concepts which can also be adapted into VWs. In these learning domains, learning outcomes demonstrate learners' ability to understand information, the use of emotion, manipulation of virtual objects and communicating in local chat/instant message within VWs. Here I focus on some explicit examples in which experiential learning perspectives emerged within physical and virtual incidents.

Data Excerpt#3:

The link with SL there was getting the students to think about what they had just learned and try to apply it……the ultimate objective is that the students are able to carry out a research interview in SL……so the focus is particularly on the basics they need to carry out the interview.

The intention here was to display Sheila Yoshikawa's objective in bringing SL into the classroom. This data is indicative of evidence in linking the classroom and VWs. Sheila Yoshikawa chooses the verbs "think", "apply", "carry out", which are mostly associated with the cognitive dimension of *Apply* within Bloom's revised taxonomy.

This is explained as an endeavour to enable the learners to put what has been learned into practice, i.e. to apply and contextualise what they have learned theoretically. The data therefore suggests that Sheila Yoshikawa anticipated that the experiential approach of the teaching pedagogy might promote skills and better understanding of the subject with the activities implemented both in the classroom and SL. The data also indicates that Sheila Yoshikawa expected her students to conduct an interview in-world to understand information behaviour of the interviewees, who were seeking information for SL activities, by implementing interviewing techniques in SL. A great number of scholars recognise that SL has the capacity to conduct this sort of activity (Dalgarno & Lee 2010; Peachey et al. 2010). The assessment strategy for the module seems not to enable the students to demonstrate their grasp of information behaviour theory as it is assessed primarily through writing an essay but conducting an interview activity in SL would be an example of evidence of ability to gather the data and apply their understanding of the information behaviour models.

Another example could be seen with the exhibition activity. Sheila Yoshikawa aimed with this activity to enable her students to improve their communication and presentation skills. Here it is noteworthy that Pancha stated in the elicitation interview that perhaps there could have been a stronger link between the students' design of the exhibition and the concepts of information but Sheila Yoshikawa finds this would have been more difficult in a limited time. Drawing implications from the above understanding, the common terms identified repeatedly as characteristics of immersive experience within the data are "exploration", "performance", "experimentation" and "abstraction" in which these terms include the sustained involvement of the students in their learning process. All of these are examples of implementation of experiential learning paradigms. As I focused on the experiential learning paradigms, I therefore found the following as a means of understanding Sheila Yoshikawa's experiential learning mechanisms:

- The use of the structured group activity as a technique for dealing with information problems.
- The use of reflection as part of the learning experience.
- Furnishing and designing the mini islands.
- Conducting interviews in SL.

I view these findings as a starting point to indicate that the teaching approach used for utilising experiential learning has important pedagogic implications to develop new skills such as navigating, integrating and designing in-world as well as interpersonal skills such as presentation, interview and teamwork skills within socially rich contexts. However, the study of Kim et al. (2012, p.6) indicates that the major focus of studies about the educational application of VWs is not based on experiential space in VWs, rather that VWs have been used as simulation of space. This suggests that there is a trend as an increasing interest in educational implementation of VWs to reproduce reality using avatars, objects or tasks such as a virtual campus or classrooms in the form of the curriculum where experimental teaching paradigms could be utilised successfully.

The SL tutorials and introduction phase of the module included several issues, which are mostly linked with the theme of experiential learning. This theme exemplifies four dimensions. In the next sequence of the sections, I sub-categorise and describe each aspect of experiential learning in turn, and provide illustrative incidents, which are then analysed in detail. Each dimension has no direct dependencies upon the others; however, I argue that each one has implications upon teaching design as a whole.

4.13.1.1 Classroom Management

Within the context of VWs, what I mean by classroom management is to orchestrate the learning environment of a group of learners within a classroom and in-world setting in terms of behaviour and participation. Classroom management is a key component to effective teaching (Mahon et al. 2010, p.132) and this can be achieved by setting expectations and forming a motivational climate to enhance student learning. Creating experiential learning opportunities through immersive environments brings classroom management to the fore if educators are to maximally capitalise on the impact of VWs.

Participating and contributing in the group activity in the classroom and SL was itself very demanding of tutors' time and required strategic thinking and action for classroom management. The actual size of the class was forty-three and it was a considerable number to make a potentially well-managed learning environment.

Orchestrating the learning environment was even harder with combining the physical space and SL and involving a remote tutor in-world. My observations show that it was part of the role of Sheila Yoshikawa to monitor group dynamics within any activities, and one of the more demanding elements was time management during tasks. In the early weeks of the module, Pancha stated that she felt somewhat separate from what was happening in the classroom in orientation tutorials, in comparison to the previous year. To elaborate and get more detail about her feeling of isolation, I asked in the elicitation interview what the following chunk of conversation, which she had written in the instant message just before the SL session began, in the notecard meant for her.

Data Excerpt#4:

Pancha: It would be great if this week the participant could be encouraged to use the chat
Pancha: rather than speak in RL :-)
Pancha: just so I have a feel for what's happening :-)
Pancha: so much of the time, I wasn't sure if I was doing the right thing

Ridvan Atolia: what does this mean to you? I think you felt in the beginning a bit isolated
Pancha: I remember feeling like I wasn't pulling my weight, that I was being no help, and I wasn't sure if anything I was doing was working
Pancha: normally also, it's possible to have back chat with other tutors, but you two were in RL very busy during the sessions, so there was little discussion
Pancha: so we couldn't compare notes or give guidance.
Pancha: I felt a bit pressed for time again – I was sure not everyone had completed what they needed.
Pancha: I think we maybe could have done more with using the group IM to help folks - not sure
Sheila Yoshikawa: the logistics of getting the right set of students into the right lab at the right time that was always a worry to me.

The data indicate that Pancha feels the students ignore her, and do not communicate with her. This is because, from my observations, students have not yet fully familiarised themselves with the communication mechanisms in-world and conversations were occasionally happening between avatars, but within pairs in real life across the lab. The data indicated that having backchat with other module tutors, i.e. communicating with them in local text-chat or IM to direct each other while the students are taking part in the activities in-world, is essential especially for geo-distant people to follow the right path. The data also indicate that Pancha felt time pressure due to incompleted activities of the students within the limited time. She recognises

that Sheila Yoshikawa is busy with class activities in the classroom and I deal with the students' questions and this eventually caused lack of communication in-world between tutors.

Based upon the data, it is my interpretation that this remote collaboration might enable more fruitful interaction amongst the tutors and the students but the ability to have a local chat or instant message real-time collaboration during SL sessions, which might not be feasible in f2f teaching, was a clear factor impacting on the experience of the geo-distant tutors. A close look at class activities reveals the need for a classroom management that is established, monitored and modified to implement and maintain the learning environment. Pancha's responses here give some hints that communication is central and an important aspect of classroom management especially with VWs. Furthermore, just as it is crucial in any setting to review the expectations for any discussion or activity, it is equally if not more important in VWs to establish classroom management procedures for the learning environment. For example, it is important to know how to handle different groups in the classroom and the computer lab. This would be beneficial from both a planning and a preparation point of view.

4.13.1.2 Support

The information problem group activity itself was a good example of how the learners needed support in their learning. In this activity, Sheila Yoshikawa attempted to enhance and foster the students' learning by asking them to explore a range of information resources relating to their information problems, and evaluate the relevant materials, create a mindmap, prepare a presentation and eventually import it into SL in groups. There was an expectation that the group activity would bring cognitive and metacognitive benefits to the learners such as abstracting important information, discerning relationships between ideas and integrating the new information with their prior knowledge to form coherent understanding about the given information problem. This involved the learners in participating actively in their activity and demanded great support both individually and collectively.

From an instructional paradigm point of view, learning is conceptualised as a "transformative process" where the learners actively participate in the construction of

narratives (Mezirow 1997). This metaphorical view of learning has led to the shift in mentality of the roles of tutors such as tutor-practitioner-mentor-facilitator in students' learning process and relatively released educators from becoming heavily responsible to feed the students with their needs. However, perhaps paradoxically, my observations and Sheila Yoshikawa's feeling show that Sheila Yoshikawa was intensively active and had significant challenges in creating motivating and supportive instructional environments, engaging content and forming settings to support collaboration with peers and tutors. Yet, there were occasions in which some students were left at the risk of "alienating", which I attempt to elaborate in Section 4.13.1.4.

Data Excerpt #5:

Sheila Yoshikawa: I was just reminding myself what I was doing in the other lab - they were in groups working on their information problem, that they were going to have to finish the following week as a ppt and import into SL
Sheila Yoshikawa: they needed support and - um – prodding

Sheila Yoshikawa first underlined the extension of the SL activities with classroom spaces and what was happening outside of SL. Sheila Yoshikawa felt that the students not only needed support but also to be stimulated to become fully involved in the activity in the classroom. Sheila Yoshikawa's choice of the verb to describe the students' situation -"prodding" - was interesting here. Sheila Yoshikawa felt this support mostly depends on her and often requires further energy to regulate the activity. The necessity for this sort of support might be more obvious when the students are first year undergraduate students whose ages are around eighteen. This interpretation invokes further discussions to examine challenges in teaching strategies to gain momentum into students' willingness for practical implications. One would argue that support is always needed in every level of teaching and learning stage but the data indicate that there was a need for more scaffolded and incentive support, e.g. through illustrative examples, to "choreograph" the sequences of experiences for first year undergraduate students. The term "choreography" indicates here accurately developing a different set of teaching skills with more emphasis upon conducting learning experiences, reflection and group activities. Based upon my observations and the data that I presented, it is my interpretation that SL pedagogy differs from f2f pedagogy in terms of classroom management and support to learners' learning

process. I illustrate now how to choreograph experiences in VWs, considering this different sort of support more explicitly with the concept of hybridisation of physical and virtual performance.

4.13.1.3 Hybridisation

What I mean by the concept of hybridisation here is to involve instruction that recognises teaching as a dialectic relationship between physical and virtual performance. In a sense, teaching is learning to perform within a particular context similar to performances in a play. By enacting in performance within the classroom and SL, educators need to develop a disposition to transfer teaching strategies across physical and virtual contexts. The physical world teaching paradigms in social constructivism suggest that the students work in collaboration with others through group activities and educators help the students work through difficulties by asking open-ended questions. Likewise, the virtual world teaching paradigms suggest that educators augment their classroom teaching to value immersive experience with social interactions. Sheila Yoshikawa finds the inquiry based learning approach as optimal strategies to sustain both peer interactions and avatar interactions in her teaching. In the teaching of the module content, Sheila Yoshikawa also uses various teaching strategies including discussion, presentations, field trips, remote speakers and students' creation in-world, drawing from techniques developed in the classroom.

Data Excerpt#6:

Sheila Yoshikawa: I must say in this week my focus was more on the work they were doing outside SL - all the groups needed feedback and some were struggling or not concentrating on what they were doing or had some dysfunction
Sheila Yoshikawa: then I was herding them to and from the SL lab.

Sheila Yoshikawa defines her roles in the classroom and in-world and she finds herself in a position where the students needed rich feedback and support with the group activity and to be well organised in and from SL. Sheila Yoshikawa expresses her action as "herding" them. My focus rather is on Sheila Yoshikawa's physical and virtual performance as performative strategy and the data suggests that the emphasis is on team skills and the ability to work with others to address the problem. Sheila Yoshikawa's techniques might encourage self-motivation, thinking, and analytical skills in an attempt to make learning an interactive and enjoyable experience. This

could be achieved in the context of VWs, as learning might be active and cumulative in this way.

As the students attempted to be harmonised with this new environment, the data suggested that two principal issues also influenced the tutors' experiences in SL. The first issue was the management of the class, i.e. being a presence in the classroom, the lab and in-world and the second issue was the students' willingness to accept the 3D environment. The data below, which was gathered through elicitation interviews, also provided additional discourses to analyse this issue, which was being curious and interactive participants, further.

4.13.1.4 Alienating

"Alienating" is not a phrase that came up from the interviews directly but I observed that some students tended to be reluctant in the activities both in the classroom and computer lab. In some cases, exercises were just a base requirement for some students and they were not motivated to engage with the activities on their own. I interpreted Sheila Yoshikawa's responses as expressing a need for enthusiasm if the students were to avoid being excluded from the learning experiences. Sköld (2012) emphasises that it is important to know what sort of biases are situated in the learning space to avoid the risk of the learning space alienating the students due to their gender, ethnicity, or age. This is more significant in VWs as both social and cultural belongings are relevant to the students' experiences in VWs (White & Le Cornu 2010, pp.185–188). They describe VWs as a high-risk teaching environment since VWs are cultural spaces with implicit specific social codes, modes of communication and ways of behaving which may lead to cultural dislocation that underlie much of the alienation experienced by new participants (Warburton 2009). In this regard, Knox (2009) states it is necessary to interrogate the complexities and psychological implications of avatar use to adopt VWs adequately for educational purposes. I do not intend to interrogate the notion of the avatar as it is beyond the scope of this study but there is evidence to suggest that 3D embodied form might appear to be a foreign, extrinsic entity (Meadows 2007; Taylor 2002) and "deeply disturbing" (Bayne 2008, p.201) depending upon cultural specificity and religious belief. This may lead users to perceive themselves as isolated or alienated not only from the digital body but also from the environment itself. More specifically, White (2008) believes that "it is the

subjective nature of the social capital within MUVEs that can make them *[individuals]*, alienating and unsatisfying" and tells us that "elaborate dress, complex hairstyles or a distinctive look visually mark the individual's commitment to the world".

However, others consider that VWs help overcome a sense of psychological alienation by making it possible to express different feelings in detail through avatars (van der Land et al. 2011). Thus, for some this might be a valued aspect of avatar pedagogy but for others it is a deeply problematic challenge within the virtual world. In essence, what becomes therefore central for education to make a positive utilisation of VWs is to "address how to manage best our virtual identities" (Warburton 2009, p.425).

White & Le Cornu (2010) introduces two concepts which are "co-presence" - being there together (Schroeder 2002) - and "eventedness" - the notion of involving the experience of being an individual and being part of a communal activity, i.e. shared experience - that influence participant engagement and level of risk of alienation. They suggest that the greater individuals feel a sense of being part of a group and taking part in a shared experience, the less likely they are to feel isolated and alienated. I found from my observations that emotional estrangement and language barriers, (as teams were composed of members from different languages and cultures who might grow up with unfamiliar standards and models of behaviour), in groups were the greatest obstacles in the classroom, whereas difficulties in establishing avatar identity and the strange and disorienting nature of SL were potentially alienating factors in-world to getting the job done. The chat-log extract below is a good example of where Sheila Yoshikawa saw a sense of alienation both in the classroom and SL.

Data Excerpt#7:

*Sheila Yoshikawa: hmm with, ****** [name was anonymised], she was also rather distracting /distracted in the physical classroom*
Sheila Yoshikawa: a lot of giggling at the back of the room with a couple of others and not paying attention
Sheila Yoshikawa: so I suppose it has become more obvious in SL.
Sheila Yoshikawa: actually in some ways I find it LESS irritating in SL than in RL.
Pancha: it was also a gesture, I think, and at an early stage like this, they often don't plan to do gestures - I mean, they are experimenting.

Here Sheila Yoshikawa sees that some students do not engage with the activities in the classroom and this was more obvious in SL, though she finds this less irritating than in the physical classroom. This is because the character of this environment might have benefits to encourage the exploration of the environment, which I elaborate with the pedagogy of uncertainty theme below. Pancha feels that at least the students are exploring the space, as it seems all "newness" to them and interprets this to be a form of experimentation for the students. This might indicate that the students were being immersed in the virtual world and Pancha states this as "*they were immers*ing**". The way she highlighted students' immersion with the environment was noticeable here. Since there was so much going on inside and outside of SL, it might be possible to see different levels of immersion.

Sheila Yoshikawa's responses give a clear example of the challenge or even frustration of some students with the activities by not paying attention or by talking with others at the back of the classroom. Here I see that these centred upon a lack of engagement both with VWs and the classroom activities, which may be due to specific learners' background, and age, as well as disorientation, disillusion, ambiguity, and strangeness - characteristic features of VWs at least in part. Sheila Yoshikawa might run the risk of alienating her students via blended means of teaching, by making use of VWs. Yet, to challenge assumptions without alienating the students, Sheila Yoshikawa practiced techniques such as giving feedback to encourage the students' interactions and discussions that might stimulate thoughts and actions from them. Perhaps ironically, moving from the physical to the virtual world often called upon Sheila Yoshikawa to be far more engaged than she was in the classroom. Her teaching as she leads the activities in SL appears to me to indicate a great deal of energy and engagement with her content.

On the other hand, the alienation of VWs might seem to "level the playing field" or be power leveling as residents from all over the globe can inhabit together in a new and socially and culturally different sphere. That is, for instance in this unit, the local and international students, and the tutors, are all in the virtual world regardless of any identity limit or formality level. At first glance, this suggests that learning experiences are democratised within VWs as everybody has the equal opportunity regardless of distance, cost, geographical isolation and disablement issues. Yet I would argue that

VWs are still divided worlds, since everyone does not have the same access opportunities and the conditions where their identities are being constructed differ specifically due to technical, political, social, economic factors as well as societal disposition. This could lead to a lack of confidence and skills in being digitally literate (Davies & Merchant 2013; Gruszczynska et al. 2013). To be more precise, identities in VWs are characterised by differences in gender, ethnicity, age, socio-economic status, religion, biases, experiences, etc., and stereotypes and social status which can transfer into VWs. Another example comes with the creation of avatars. Residents create their avatars from a set of design templates programmed by Linden Labs, instead of ab initio. This itself raises questions about cultural codes in relation to appearances of the self in SL. Based upon these, I believe that being in a virtual world might equate to being in the physical world. This is a considerably large and contestable argument and it is beyond the scope of this study to question whether inhabiting digital selves in VWs could ever provide more democratic experiences than in the physical world.

4.13.2 Theme of Uncertainty

"Uncertainty" is a theme that emerged with Sheila Yoshikawa's responses in the elicitation interview and participants' comments. Although it could be criticised as simply being a stylish phrase, it is evidently a concept that is important to discourses, which were established around teaching and VWs. This theme and its significance arose from my reiterative study of the observational and interview data (see Section 4.3.2). For example, Sheila Yoshikawa felt that, being in a different setting, SL in this case could stimulate the students to pay attention to the subject. Sheila Yoshikawa therefore designed the opinionator exercise in SL.

Data Excerpt#8:

The graphic possibilities of the opinionator make the differences in opinion very plain, plainer than "hands up" and more striking. So it might make the content more memorable.

Here what I see with the intention of Sheila Yoshikawa is to materialise the content and extend the positive aspects of uncertainty and troublesomeness within the nature of VWs to destabilise her teaching and to articulate students' thoughts. Based upon these, Sheila Yoshikawa's comments support the idea of what Bayne (2008) and

White & Le Cornu (2010) think about teaching within MUVEs. She expects this to occur by engaging her students within spaces and practices that are disquieting, strange, unfamiliar, and disorienting and to act in a productive way of thinking in this environment.

In this activity, it was intended to encourage students to discuss exhaustively and to enable those students who might have less self-confidence to express their opinion. Students articulated their thoughts by moving into segments on the opinionator. This ultimately may have made the students more aware of the need to be information literate. Sheila Yoshikawa stated that the “choosing a compartment” thing was a good clue for her to pick some students in order to ask and explain their opinions. In so doing she expected to bring diverse views from the students who were in different segments of the opinionator and build a productive discussion. The following conversation may indicate this effort.

Data Excerpt#9:

Pancha: How would you describe a collection of someone's diaries and letters?
Pancha: which of the options here would you choose?
Sheila Yoshikawa: AvatarB
Sheila Yoshikawa: why do you think "knowledge"?
AvatarB: because the information has been changed and processed by an individual
AvatarD: and he/she has interpreted it
Sheila Yoshikawa: sounds plausible!
Pancha: interesting, so you are looking at it from the perspective of the writer?
AvatarB: yes
Pancha: ok, nice
Pancha: what about from the perspective of an archivist, or researcher?
Pancha: or biographer?
AvatarB: then it is information which needs to be processed
Pancha: AvatarC may I ask you to explain why you have chosen It Depends?
Sheila Yoshikawa: so depends on the perspective?
AvatarC: yes
Pancha: Or AvatarD, why It Depends?
AvatarD: It depends on who uses it
Pancha: ok, could you give a couple of examples?
Sheila Yoshikawa: also anyone else with an opinion, just type it in
AvatarD: If the owner of the diary is murdered, and police uses the diary for investigation. From police prospective, it's knowledge
Pancha: ah, and not Data?
Pancha: that's a very interesting example!
AvatarD: data is something with no added value
AvatarD: it is not yet processed.

Sheila Yoshikawa's teaching strategy is also compatible with the situative teaching approach where the students develop knowledge through discussion and social participation. Childs (2010, p.87) underlines this, emphasising joint discussion and the collaboration aspect of the approach. The above data also are an indicator of Sheila Yoshikawa's intention to form joint discussion. Yet another example came up when the tutors talked about conducting interviews in SL activity.

Data Excerpt10#:

Sheila Yoshikawa: so one of the benefits of using SL is getting them [the students] to put different features of the interview in focal awareness
Sheila Yoshikawa: it always seemed to me that their reflections were a bit deeper
Sheila Yoshikawa: when they had the novel environment to deal with.

Sheila Yoshikawa feels that the different environment enables the students to think reflectively. This is another indicator of her intention within unfamiliar space to enhance critical thinking skills of the students. Here it is my interpretation that Sheila Yoshikawa's teaching approach is influenced by the "variation theory" of learning and teaching (Pang & Marton 2005). According to variation theory, learning is seen as a process in which the learners develop a certain capability to discern what varies and what is invariant in the experienced situations. In this process, the tutor designs activities to help the students establish substantial connections between their new knowledge and their previous knowledge by having a range of experiences. Sheila Yoshikawa harnesses this theory as a basis for designing and teaching the module. To give an example, conducting interviews both in physical world and SL is an attempt by Sheila Yoshikawa to enable the students to vary experience in different environments and to help build an awareness through discerning object of the study. She expects that experiencing the same concept inside and outside of SL might enable this sort of discernment. Thus, the students experience variation between conducting interviews in the classroom and SL and notice differences in the RL/SL interview experience. There are also connections here with the term of uncertainty in teaching practices, through place, body, and text, formed within the context of VWs. A key point I draw at this juncture is that although work by Sköld (2012) for example has indicated that the ambiguity and uncertainty of virtual spaces presents a major pedagogic challenge depending upon the learning task design, my observations and the data indicate that such an approach, defamiliarising the familiar through MUVEs,

makes teaching new, strange, rich and productive which I intend to demonstrate further below with my interpretation of Sheila Yoshikawa's words and actions over the nature of VWs. This theme exemplifies two dimensions.

4.13.2.1 Hyperreality and Authenticity

Kaplan & Haenlein (2009, p.564) describe the concept of hyperreality, based on the idea of artificially created settings appearing real to the individuals involved in them. They see SL as the most well known hyperreality since the boundaries of fantasy and reality blurs in VWs. To support their idea, Baudrillard (1994) presents the example of Disneyland in which imagination and fiction is brought together to create an illusion so as to make its visitors believe that all its surroundings are "real". Baudrillard describes how the creation of Disneyland in "real geographical space" renders the fictional spaces of animated films as a materially related world. This could be another good example for hyperreality.

In the same vein, there was evidence in this study to demonstrate how Sheila Yoshikawa problematises the virtual and the real. However, she prefers on several occasions to design a meaningful and authentic environment for the students to relate their expectations and mental models from the physical world to this hyperreality. Here for example, she stated the opinionator exercise was deliberately constructed on the ground of the island, nowhere else, e.g. in the air of the island surrounded with nothing, so that the students could get a sense of "physical" connection with the space in which they worked for their information problem activity. Further evidence to support this claim comes from the elicitation interview data.

Data Excerpt#11:

Sheila Yoshikawa: also - it seems a bit dull
Sheila Yoshikawa: finding the balance between dull and distracting
Pancha: I think having it near their building places was a good idea
Sheila Yoshikawa: I suppose one thing is that I hope they [the students] will get through the hello sky hello sheep phase by week 4

The data indicate that Sheila Yoshikawa draws on previous experiences of teaching in SL and this affected the way she has designed the learning space and activities. It must therefore be acknowledged that Sheila Yoshikawa's teaching is an ongoing interpersonal and developmental mode and her prior teaching experiences provided an

essential base for her teaching. As she recognises that everything is new to the students, she attempts to make an accurate balance between attractiveness and strangeness of the space in which the opinionator activity takes place so that the space not only stimulates productive thinking and practicing, but also enables an activity-focused environment. Drawing upon Sheila Yoshikawa's feeling, she therefore makes an effort to interplay between sense of the learning space, context, and student engagement and experience. In this instance, "teaching" took place in an authentic atmosphere through a combination of task-oriented experience and the positive value of strangeness of the space. It is important to realise though that although discussions may have been prompted by the activity in-world, they were not limited to the virtual world. This profound pedagogical characteristic feature of the space revealed another dimension in the elicitation interview, which I present next.

4.13.2.2 Diagnosis of Genuine Issues

Given that there is bound to be uncertainty with teaching in VWs (Bayne 2008; White & Le Cornu 2010), the uncanny aspect of the environment involves other issues such as diagnosis of genuine difficulties, e.g. moving, finding the right place to stand on or the facility to prompt in-world, and building trust between residents. Judging credibility and trust in offline situations is challenging enough, it is more complicated with avatar-based interactions as identity could be masked and identity markers could be intentionally misleading. Despite the fact that it was not a big challenge to develop trust between the students due to the blended nature of the module, this still might be relevant to a remote tutor.

Data Excerpt#12:

Sheila Yoshikawa: was it possible for you to diagnose when people were having genuine issues?
Pancha: usually it is possible, yes
Sheila Yoshikawa: I see you being polite again. "That's such a cool avatar :-)"
Pancha: well, I think I was smitten by the dirigible [non-humanoid inanimate avatar]
Sheila Yoshikawa: actually I think that means you did see that person having problems, being encouraging?
Pancha: it's likely I would say something like that (and mean it!) to try to create a cordial atmosphere

Here Pancha feels the crucial importance of establishing trust in determining the students' challenges. The data indicates that a cordial and sincere atmosphere is

needed to be created to overcome those issues and to enable the students to articulate their thoughts in a comfortable way.

Pancha's comment also suggests that there is a well-established rapport between Sheila Yoshikawa and Pancha based on their shared history in SL, which is an important aspect of their teaching relations to create sincere ambiance. Their rapport could be characterized as mutual attentiveness, mutual openness, and mutual understanding that are harmonious in nature, helping to develop a feeling of camaraderie. In particular, their attentive behaviours such as smiling or head nodding, having a sense of humour in VWs could be referred as "positivity correlates". Besides, using instant messaging with which communication is comfortable and engaging in beyond the academic setting chat and creating a positive, friendly, cooperative environment support to build stronger rapport between them. The data suggest that establishing rapport is a good indicator for rewarding teaching to guide their behaviour and perspectives.

4.13.3 Theme of Dynamic Relationship

This is a phrase that came up in the elicitation interview when Sheila Yoshikawa talked about inter-student dynamics. I did not introduce the phrase at any point and it came from Sheila Yoshikawa. Unlike the other themes, this theme is not just confined to VWs. This theme emerged when she talked about the challenges that students faced with SL, e.g. technological difficulties. Sheila Yoshikawa stated that *"inter-student dynamics continued across both worlds"* to indicate how various issues with different groups also carried into VWs. What Sheila Yoshikawa meant by inter-student dynamics in this context could be explained as the relationships between the students and the way in which they interact with one another during the sessions both in the classroom and SL. While it is important for any teaching context to be characterised by positive classroom relationships, it might sometimes be difficult to establish and maintain such relationships in the context of VWs based teaching. From Sheila Yoshikawa's teaching perspective, the focus was naturally placed on the communication of the team members and teamwork. I now present an extract from the elicitation interview, which illuminates influences of inter-student dynamics over the activities.

Data Excerpt#13:

Sheila Yoshikawa: there were various problems with different groups - one group very focused on being efficient - another not really understanding the task for a while through language issues - another fragmented by personality issues - another with 1 or 2 people usually missing etc.

*Sheila Yoshikawa: it was exhausting actually, the class the following semester - one week ****** [name anonymised] *had them for 4 hours and the next I did - in each case we were just limp rags by the end of the day.*

Pancha: I was just thinking how sapping a group can be - or how energizing.

Here Sheila Yoshikawa describes potential inter-student dynamics occurred in a negative way both in the classroom and SL. This does not mean that uncomfortable moments occurred due to religion, politics, race, class, or gender issues, rather sometimes the flow of communication was fragmented possibly due to the diversity and individual needs of learners affected by personal histories or low self-esteem and emotional issues. As I show with the data, one of the inhibiting factors is the international nature of the module. Clearly cultural differences can be a fruitful source for a variety of views and students benefit from learning with their peers from different backgrounds and cultures, yet cultural factors can also produce a challenge in the teaching and learning situations. This is identified as the concept of "culture shock" (Ryan & Hellmundt 2003). This can have a detrimental effect on students' learning experience. Sheila Yoshikawa for instance endeavours to accommodate the complexities in linguistic ability variations, cultural differences by carefully choosing pairs and groups to work together. In so doing, she expects to reduce the influence of the language barrier both in the classroom and in-world. The effect of linguistic ability variation over engagement with the activity and flow of conversation was also observed by the TutorG when her students were interviewed.

Data Excerpt#14:

Ridvan Atolia: Could you tell your observations on the interviews please?
TutorG: The students (and others) who were interviewed by first-language English speakers, overall enjoyed themselves more than the ones who were trying to understand non-native speakers.
TutorG: Sometimes they couldn't figure out what the interviewer was really asking, that kind of thing.
TutorG: One of the history students in particular had a wonderful time with his interviewer, and stayed in-world at least an hour and a half talking. I eventually had to shoot him out of the computer lab.

Inter-student dynamics can be at the core of sparking new ideas and it may therefore be an important part to establish positive student relationships, however from my observations, the primary restrictive factor for Sheila Yoshikawa to overcome is the effect of the level of openness to new experiences amongst the students, which I attempted to explain earlier in Section 4.13.1.4. This theme exemplifies two issues. I now elaborate two aspects of the theme, which illuminate Sheila Yoshikawa's strategies to enrich student relationships.

4.13.3.1 Teacher Presence

Here I describe teacher presence as an instrument which is shaped by the three elements of cognitive, social and teaching aspects that are the interrelated components Within this concept, teaching aspect was characterised with the instructional design and activity organisation, facilitation of the discourse, and direct instruction of educators (Laves 2010, p.6). The cognitive aspect is associated with awareness of critical thinking and reflection. The cognitive aspect occurs when critical discussions take place amongst students and between the tutors and students. The social aspect is the ability to project individual personalities socially and emotionally through the communication medium. To give an example, for instance personality can be a key element of social aspect, and Sheila Yoshikawa attempts to minimize anxiety or tensions by using humour in SL and to encourage dialogue between the tutors and the students, and between and among the students. Therefore being in VWs plays a role in shaping her social behaviour. One may argue that social behaviour patterns in VWs are superficial and they are detached from behaviour linked to the physical world, but my observations show that Sheila Yoshikawa's social behaviour patterns and stereotype were supportively cultivated in SL. A supporting example is that Sheila Yoshikawa gives flexibility to her students, allowing them to explore and express themselves within an increased sense of agency. In doing so, she attempts to enable her students to form their identities with more "socialiser preferences", as Bartle (2004) argues that the tendency in current virtual world design is to underline either the achiever (ludus) or socialiser (paidia) preferences as two classifications of type within VWs, so as to establish more emotional connections with their characters. This emotional involvement may enhance both the personal perception of other students and the tutors and this may lead to increased interactions amongst the students and between the students and the tutors. It was therefore possible to see the diversity and

possibilities of expression such as humanised, non-humanoid inanimate, and animal-like avatars together conducting an interview in harmony in SL. She expresses this view by saying *"yes I did like it that they* [the students] *didn't feel obliged to become humans"*.

Yet another example is with her avatar appearance. As VWs may play a role in reinforcing the ego of an individual since "avatars act as agents of identity" (Taylor 2009), embodiment within the avatar endows Sheila Yoshikawa with the agency and presence to shape her social presence in relation to the institution, the virtual world and self-discovery. Besides, Yee et al. (2009) demonstrate that the appearance of the avatar has a deep impact on social behaviour and perceptions of the self- both in VWs and more interestingly in RL as well. Sheila Yoshikawa's avatar is interesting as she combines modesty with bits of elegance. Sheila Yoshikawa's representative character in SL can be characterised as an elaborate and good-looking female avatar, which is thin, tall, and unlined with stylish colourful clothing, hairstyle and accessories. Sheila Yoshikawa has blue hair and at one point she remarked that it is an identifying feature of her whilst she has a set of different colourful hair. I interpret these as an attempt to "reduce the physical and psychological distance" between the students and Sheila Yoshikawa (Hayes & Weibelzahl 2009, p.57). Figure 24 gives an example of her avatar's appearance. Unlike her appearance in SL, markers of her personality expression might be seen with her linguistic outputs, and geographical locomotion in SL. Yee et al. (2011, p.10) suggest "conscientiousness is related to geographical movement in VWs and emotional stability is related to log-in patterns". These can be indicators of social norms and stereotypes of Sheila Yoshikawa both in the physical world and SL.

Figure 24: An Example of Sheila Yoshikawa's Avatar Appearance

Sheila Yoshikawa's conceptualisation of herself might imply that a prerequisite for empathetic teaching in an immersive virtual world is for the tutor to develop a virtual identity and presence with respect to a certain role and social milieu based on the idea that the structure of the identity provides meanings associated with one's social formation and influences interactions (Childs 2010, p.63). These are only a few illustrations of Sheila Yoshikawa's social presence in SL. Sheila Yoshikawa's approach for adapting her teaching style in this way encourages specifically the students who come from the culture in which the teacher is "authority", who holds responsibility to engage actively in the learning process. I interpret the data and observations as evidence for adopting strategies to humanise and socialise the process for her teaching approach in SL. This finding is also consistent with the results of other studies, in particular with the study of Dalgarno & Lee (2010).

Pancha's characterisation of her avatar differs from Sheila Yoshikawa's characterisation. While Sheila Yoshikawa prefers experiencing presence without altering her avatar, but changing her outfits often with various clothes and accessories, Pancha prefers, perhaps not often, to alter her avatar via a range of assorted embodiments. The ways she alters her avatar would be an indicator that Pancha perceives her presence in VWs differently from the ways of Sheila Yoshikawa. Figure 25 gives an example of her avatar character.

Figure 25: An Example of Pancha's Avatar Appearance.

Pancha's conceptualisation of herself indicates that her avatar did have a distinct identity in the virtual world. The identity of her avatar might not be identical to that of its real user, that is, the represented body in the virtual world might not closely map the person's offline body. This might be an indicator of her presence experience as "Immersionists" (Bennetsen 2006), which implies that participants engage in VWs as an entirely separate space and present an aspect of themselves which cannot be expressed in the physical world. On the other hand, Sheila Yoshikawa's embodiment indicates her presence experience as "Augmentationist" (Bennetsen 2006), where participants tend to perceive VWs as an extension of the physical world.

I identify my position as "Augmentationist" as I have never changed my in-world identity since I created my character in SL. This is because I engage in SL as an extension of the physical world and endeavours to hide my offline identity would be an alienating and false act. Figure 26 gives an example of my avatar appearance.

Figure 26: An Example of Ridvan's Avatar Appearance.

Given my academic background, the choice of my avatar was pedagogically driven. This included forming a believable and accurate representation of my corporeal self with a virtual realm. What made him fascinating was the fact that through him I was attaining the expected recognition as an ordinary researcher. I simply engaged with my virtual persona to consider it as an entity that was an extension of my "self". It has some resemblance to my corporeal characteristics. Although he has blonde hair, nonetheless, he looks like me, he most certainly dresses like me, usually plain shirts and blue jeans as I also often appear in the physical world. This would indicate that my virtual persona became furnished with my own personalities, and perceptions. In this way, my avatar is an authentic representation of my offline persona. For this reason, I maintained this avatar appearance as "Ridvan Atolia" over the period of this research. The choice of a persistent avatar identity that "resembles me" can be considered as an attempt for an authentic self in SL.

As these examples indicate, how often and in what way participants alter their avatars might shape how others perceive their presences in VWs. Further, this also implies that our avatar bodies carry with them various social meanings, as I suggested briefly here. This was an interesting aspect of VWs, that participants projected different social presence in this case study. This is a good example of how the affordances of

VWs allow for more experimentation in the expression of identities, but my observations indicate that tutors were influenced by their individual expectations and identities.

4.13.3.2 Playfulness

The role of play as a means for encouraging interaction with objects and amongst the students is well valued by the researchers and the "fun factor" is a significant aspect of VWs to be accepted and used for students (Shen & Eder 2009). In particular, the students are young people who are first year undergraduates, SL may enable the students to work collaboratively and enjoy learning experiences. As mentioned previously, Sheila Yoshikawa finds potential distractions less irritating in SL. This is because of the game-like function of SL. Pancha supports Sheila Yoshikawa by saying *"I agree about the less irritating, I think - probably because I think SL is more playful"*. This is an indicator of both tutors embracing the enjoyment characteristic of VWs and becoming more tolerant against behaviours exhibited by the students. They both feel that VWs invoke fun, playfulness and ultimately student engagement. This aspect was also supported by the emerged data in interviews in Section 4.4.3 and Section 4.6.5.

Further to this, adding an element of fun to the experience and teaching in a playful and fun way therefore may be used to reinforce the community spirit within the groups. From my observations, SL enabled students to immerse with a perception of play through SL. For instance, a playful element can be seen with students manipulating the appearance of their avatars. The customisation of avatars and creating the identity, where much of the fun resides, plays a central role in the pleasure of SL. Another playful element could be seen with the construction of their mini islands. In both incidents, they designed their characters and constructed their places with spontaneous narratives and interactions that could enrich interstudent dynamics in a positive way. It is worth noting that this is not to emphasise a motivational feature of play through entertainment in a teaching situation, rather to indicate the contribution of amusement VWs make as a positive contribution to relationships between the students and artifacts.

4.14 Pedagogical Implications

In this unit of the case study, I observed teaching activities both in the classrooms and in-world throughout the module and interviewed three tutors. The intention here was to explore tutors' perspectives of their own teaching within SL and detail some of the interventions and strategies that were adopted. With an hour over 11 weeks of observations, I also endeavoured to explore whether teaching in a virtual world might impact on the tutors' teaching in the classroom. With the interviews, I sought to reveal tutors' thoughts and feelings of their experiences with SL in this module. The data indicates the following:

1. SL was a favourable and appealing environment for utilizing IBL with a constructivist approach in which the students collaborated, interacted, and experimented. It was noted that VWs are valuable in creating interactive and innovative educational environments since they make a clear connection between learning activities and outcomes. The most compelling aspects of SL for this module therefore were that the students "met" other students in an authentic environment in which they went beyond any online chat such as MSN, Skype, and had hands-on experiences within which the sense of presence and sense of place was performed. Mirroring findings in the literature, this is characterised by a trend amongst the educators who utilise VWs for emphasising the social aspects of the learning process (Jarmon et al. 2009) and Sheila Yoshikawa's actions in designing her teaching appear to support this claim. I interpret these findings as evidence that SL enabled Sheila Yoshikawa to provide a dedicated teaching venue where the students work within a social environment, though participatory and exploratory learning experiences might remain fragmented. The sessions conducted in the classrooms usually consisted of an instructor-led presentation, incorporating some aspects of traditional teaching strategies such as using slides or written instructions with handouts. This was followed by synchronous demonstrations with students experientially imitating Sheila Yoshikawa's and other tutors activities in SL, accompanied by real time verbal instruction in the computer room. This form of the module provided opportunities for Sheila Yoshikawa to create compelling holistic experiences to engage the students into an immersed learning whilst teacher-centred pedagogical practices may be needed in this kind of first-year course to foster deep learning. In order to strengthen

the inclusion of SL sessions, the students may be asked to reflect upon their experiences along with their perception of learning outcomes.

2. Sheila Yoshikawa's account shows that teaching within SL is a new paradigm and may make learning much more engaging as it becomes immersive but, given the fragmentation and changeability of the group of individuals and the fact that the students' awareness and familiarity with VWs is minimal, students may have considered the degree of their participation was limited. Furthermore, it is misleading to assume that the young generation is familiar with VWs. The assumption is that growing in the "digital age" necessarily means ease of use and familiarity with VWs. It is accurate to suggest that there is a discrepancy between the "digital native" and the youth generation I observed in the class. It is not a homogenous population and there seems to be a broad spectrum in the ability to use SL effectively and critically in young learners. Besides, the evidence presented here suggests that there is a risk of losing or excluding those who choose not to engage. Likewise, it was notable that VWs might polarise the students much more than other educational tools, as some students identified SL as one of the best things, and fewer as one of the worst things.

3. Having other tutors involved in SL was essential to Sheila Yoshikawa's teaching in terms of reducing possible chaotic initiation into activities in-world and responding rapidly to students requirements and having more collaboration. Nevertheless, the influences on Sheila Yoshikawa's beliefs and perceptions regarding her teaching strategies are largely internal and drawn from her experience.

4. Even though identity creation and projection through an avatar is complicated, Sheila Yoshikawa's teaching strategies with social presence in VWs have a positive effect over student behaviour and dynamics. This is an illustration of how being in VWs plays a role in shaping her social behaviour.

5. I observed many occurrences of the interrelation of SL, Blackboard and RL environments. Thus, it seems as if the most favourable use of SL is in combination with f2f and e-learning affordances, i.e. blending offline environments, digital spaces to design an effective learning experience using both online and offline modes of teaching (Webber, 2013). Furthermore, it is to be present physically in the classroom and virtually in SL in order to render assistance and guidance to the students. This

helps to mitigate students' anxieties and technical issues, as well as often to monitor students' anxieties and levels of comfort around the immersive experience through their interactions with peers in f2f and chatting in SL.

6. I observed that Sheila Yoshikawa also employs SL for her digital scholarship activities such as academic engagement, disseminating and sharing her research with the community, and so on. The implication is that educators can build up their sustainable professional practices by inhabiting VWs. Sustainable in the sense that they can enrich their continuing professional development and enlarge their disciplinary horizons regardless of any environmental and financial restrictions, e.g. participating conferences, giving presentations, having professional meetings, and collaborating with tutors in VWs.

4.15 Summary

In this section I first introduced the module in detail. I elaborated on the characteristics of the learning activities that took place in the classroom and SL. I have defined three main themes and eight sub-themes I abstracted from the data. I have described the characteristics and dimensions of the themes. Then I have presented evidence supporting my interpretation of the themes. I have offered excerpts of data to illustrate the nature of each theme and issues and how I arrived at them. I analysed the data to explain how the informants of the module implement teaching strategies, approaches into SL and f2f situations. Eventually, I suggested pedagogical implications that the themes invoke.

Next, I present an argument, rooted in the themes, in order to deepen understanding for virtual world learning activities.

CHAPTER FIVE: DISCUSSION OF THEMES

5.1 Introduction

Presenting the data in Chapter Four has set the groundwork for a discussion of the themes that emerged through an analysis of participants' experiences, words and practices and through interviews and observations of the class. The purpose of my research was to study teaching experiences of educators that use SL in their courses in blended situations, to determine their approaches to teaching in SL and f2f and to examine their experiences. The intention of the research was to gain insights as to how teaching could be performed, for example by seeking how SL could be used in teaching to establish immersive teaching experiences. The findings from the data analysis were presented in terms of seven themes; cybergogy, creativity, trial and error, wow moment, uncertainty, experiential learning, and dynamic relationship. Each theme provided multiple routes of theoretical and practical interpretation. In presenting each theme, links were made to previous research and relevant theory.

The findings of the study are consistent with previous research that indicates that teaching within SL is busy, noisy, initially chaotic, and time consuming, but it provides evidence at least in the case under study that VWs can provide educators with experiential educational opportunities. This also includes communication and interaction between and among students and educators, which plays a substantial role in the subject studied. It is also important to note that educators' characteristics need to be considered for the design of the pedagogy within VWs.

As stated earlier, a goal was to elaborate how educators' experience of teaching within SL was in the forms of blended situations. There seems to be general agreement in the research literature that social constructivism is an underlying theoretical assumption in the students' learning process (Beetham & Sharpe 2013; Bronack et al. 2008; Dalgarno & Lee 2010; Rapanotti et al. 2012). Similar to other studies such as Bronack et al. (2008), Dede (1995), Garrison et al. (2001), Salt et al. (2008), the social constructivist approach has also been established as having value in teaching within the virtual world of SL in light of the data. Within this paradigm, learners take an active role in their learning experience and there is interaction between students and the environment in a VW.

A related purpose was to examine whether teaching in SL gives educators insights that could improve their classroom pedagogy. That is, it was my intention to investigate whether educators gain insights for their teaching practices in the classroom. The intent here was in determining whether and how educators' teaching approaches are affected by immersive teaching practices. For example, my aim was to examine whether educators' practice of teaching within SL could lead them to enhance their personal teaching expectancy by the potential affordances of VWs. From this, my attempt was to practically find indications of how educators' f2f teaching might be enhanced by using VWs. I aimed to explore this by interviewing the participants and specifically by observing teaching practices of the participants and their avatars in the unit of the IL module. Creativity seems to be a key concept that raises the expectations and inspires educators for their f2f teaching (Ferguson 2011; Ward & Sonneborn 2011).

Another goal of this research was to consider how educators learn how to approach teaching in SL. The intention here was in determining whether educators collaborate with their colleagues in SL as well as whether they follow any specific framework to inform their teaching. This also included investigating what motivates them to participate in VWs other than the requirement of a class activity. This was important since motivation is considered broadly to be an essential factor that drives perceptions, behaviours and individuals' intention to experience any sort of environments (Hernandez et al. 2011). With this, my aim was to consider whether educators' involvement in SL has links with their CPD.

This study lastly aimed to investigate educators' strategies to deal with students' potential antipathies towards immersing in VWs. It has been recognised that there are certain barriers to adopting VWs in HE (Warburton 2009; Kelton 2008). Kirriemuir's snapshot series (2007a, 2007b, 2008a, 2008b, 2009a, 2009b, 2009c, 2010a, 2010b) identifies problems relating to adoption of VWs in HE. These arguments prompted me to elaborate educators' approaches to students' resistance towards the immersive experience, potentially caused by the issues raised in those studies. The intent here was to look at how educators address the feeling of anxiety of students, if any, and their positions of potential risk of losing or excluding those who choose not to engage. It is important to note that my argument regarding this issue was not to discuss ethical

dilemmas concerning to what extent students ought to be exposed in VWs. My hope was to identify educators' strategies for students' resistance towards the environment.

In this chapter, I discuss the analysis developed in my study from the interviews with participants and the unit of the IL module, the seven themes that I synthesised from their experiences, and their links to existing research. For purposes of this discussion, I have brought together threads and themes arising from Chapter Four to articulate the links across themes. This also included considering how themes that emerged from interviews link with the themes that emerged from the unit of the module. I have coupled the themes and sub-themes according to the RQs and grouped them into sub-areas of interest to which they appear to relate.

The first RQ concerns implementation of teaching into SL/f2f teaching situations. Four of the themes that emerged relating to this area of interest were centered onto "Pedagogical Design in SL". I have created a number of sub-themes under this topic that focus on various aspects such as design of the environment, and educator characteristics. I discuss those aspects within this chapter.

5.2 Pedagogical Design in SL

In this category, "pedagogy of uncertainty" (Shulman 2005) and, relating to this, the idea of "metaxis" (Falconer 2011), and "uncanny" (Bayne 2008) appear to be paramount, with the potential affordances of VWs to bring spatiality, materiality, and embodiment as a means to identify pedagogical ways of teaching. As Barnett (2007, p.36) argues, pedagogy in HE needs to try to help students "live purposefully with anxiety" and uncertainty. I believe that the immersive experience is well suited to this condition of anxiety and uncertainty. According to Barnett (2007, p.126), pedagogy for uncertain times briefly engage students in authentic experiences "to become beings-for-themselves." More precisely, it suggests enacting a pedagogy for human being, human qualities and dispositions (Barnett 2012, p.65). Initially, the term of the uncertainty in a teaching practice seems to intend lack of organisation, or clarity in the teaching methods, which is ultimately an undesirable practice. A number of associated terms, such as "chaos", "complexity" and "fragmentation" can also be characterised in such situations. However, teaching strategies, which undermine the sources of behaviours such as motivating, questioning, doubting, exploring, trial-and-

error, curiosity, doing, messiness, and sustained attention, stimulate the fruitful learning experiences instead (Lee 1998). From this point of view, teaching which is problem-based or inquiry-driven is bounded by uncertainty.

Taking the idea of Taylor & Dunne (2011, p.634), which is "the experience of relationality between the avatar-student's virtual and the embodied-material identities are potentially intense, emotionally engaging and certainly uncanny", then, the pedagogy of uncertainty offers the scope for immersive teaching experience. This uncanniness might, for example, extend to experiences of educators as a social practice to engage their students in "a sense of dissonance or curiosity" (Wergin 2011, p.129). Within the uncertainty paradigm, pedagogy is described as a formalised framework that allows students to explore, learn, and become comfortable with the uncertainty, which might lead to an exciting and challenging voyage of discovery (Britzman 2009). Although Barnett recognises that a pedagogy of uncertain times has uncertainty in its nature, he identifies pedagogical principles of uncertainty as to:

- Recognise the character of each individual student.
- Encourage each student's pedagogical will.
- Allow each student her or his authenticity-in-the-making.
- Enable students to communicate and interact with each other.
- Have solicitude for students.
- Provide space to each student to forge their own becoming (Barnett; 2007, p.137).

Taking these stances means that the degree to which educators can embrace risky teaching and strategic confusion offers creative and innovative ways of identifying classroom practices (Haris 2013). What I take from this is that educators can defamiliarise and challenge students' typical ways of thinking in considering the ways in which uncertainty, confusion, and strangeness could be seen as a way of teaching productively. This conceptual assumption, then, is central to why Bayne (2008) refers to VWs as anxiety provoking and strange spaces. The feeling of anxiety here is not meant to suggest the sense of physiological emotion. Rather, it points to concepts of complex, unstable, unknown, and unpredictable nature of the world, human beings and their relationships with the world around them (Barnett 2012, p.70).

This theme emerged in the elicitation interview with Sheila Yoshikawa and continued to be reinforced throughout my observations. For example, in discussing the opinionator activity, Sheila Yoshikawa states that being in an unfamiliar setting - SL - could stimulate her students to pay attention to the subject more and allow them to articulate their thoughts. Sheila Yoshikawa expects her students to act in a productive way of thinking by engaging them with a practice that might be strange and disorienting. In doing so, Sheila Yoshikawa believes the students' attempts to engage their belief in the space and their reflections become a bit deeper when they engage with an unfamiliar space. These comments are good indicators of perceiving positive aspects of strangeness and uncanniness that the pedagogical journey of Sheila Yoshikawa in SL encounters. The data that emerged from the participants also underpinned this theme. Some participants embraced the disorienting, distracting and strange nature of SL as a valuable feature of their teaching. Their remarks were akin to Sheila Yoshikawa's teaching standpoint of immersive experience. Other researchers have drawn insights from this aspect of engaging within VWs. Bayne (2008, p.201) discusses the status of the avatar and suggests that it is perhaps this uncanny nature of selfhood that holds pedagogical possibilities for VWs. Likewise, White & Le Cornu (2010) define VWs as "other" cultural spaces that allow educators to harness moments of disjuncture as educational practices. They argue that the "otherness" of VWs could be seen as an opportunity rather than an obstacle within an educational context. This approach arguably pushes away boundaries of educators' traditional teaching and requires them to consider their understanding of immersive experiences as valued teaching.

While the concept of uncertainty continues to be argued and is an ongoing debatable subject for research, the findings of this study suggest it is an essential premise for immersive teaching experiences. Barnett (2012, p.73) accepts that most HE programmes in the UK are curriculum guided, lacking risk and uncertainty, and are seen as indicative of the educational progress of students' understanding and skills in the discipline studied. However, the concept of uncertainty may yield insights into teaching in VW settings. The empirical examples of this study are illustrative of a range of creative practices that could be seen as pedagogical possibilities of uncanniness and uncertainty. The data obtained in this study is consistent with what Shulman (2005) says, "Without a certain amount of anxiety and risk, there's a limit

on how much learning occurs. One must have something at stake. No emotional investment, no intellectual or formational yield." For the educator in my case study, this foregrounding nature of the environment is essential, and it is this epistemological disposition of SL in Sheila Yoshikawa's teaching, which she brings into the classroom.

Furthermore, although most pedagogic approaches are explored and researched in the literature, I came across a pedagogical practice that is not covered thoroughly in the context of VWs, in the course of this research. The reason for Sheila Yoshikawa to teach IL using SL in the students' learning experience was in line with "variation theory" (Pang & Marton 2005) possibilities. It is defined as an approach in which learners are expected to discern similarities and differences in attributes of concepts. For example, Sheila Yoshikawa's students conduct interviews both in the classroom and SL. By using different environments, Sheila Yoshikawa states *"one of the benefits of using SL is getting them to put different features of the interview in focal awareness."* This is compatible with the idea of the variation theory, by comparing the differences and similarities between attributes of interviewing in the classroom and SL.

Thus far, I have been discussing the first of four themes that I grouped into a single area of interest entitled "Pedagogical Design in SL." The second and third theme grouped under this area concerns pedagogical practices drawn from the interviews and observations of teaching of Sheila Yoshikawa in the classroom and SL. I have found essential the model of cybergogy (Scopes 2009; Scopes 2011; Chase & Scopes 2012) to analyse and conceptualise the emerging data. As an analytical starting point, it is worth noting that my interview questions did not include any specific components of this model. In doing so, I simply adopted the model of cybergogy for the analysis of the data. The concept of the model of cybergogy is useful in critically grounding my understanding of teaching practices in SL into the learning archetypes within VWs.

The model of cybergogy has four learning domains from which the cognitive aspect is about individual learning and understanding, whereas the social aspect is more about fostering collaboration, working and learning in a group. Further, while the emotional aspect reflects individuals' emotional reaction and feelings towards the immersive

experience, the dexterous aspect indicates the process of dexterity using basic skills in VWs, such as navigating camera controls, flying, walking and manipulating virtual objects.

As described in detail in Section 2.12, learning archetypes within the cybergogy model paradigm include:

- **Role-play**, where learners can immerse within an alternative form and explore different aspects of the self.
- **Simulations**, where learners can explore and experience activities that could be considered dangerous, difficult or expensive when conducted in the physical world.
- **Peregrination**, where learners can travel to various locations of their interest.
- **Meshed**, where learners can work in collaboration and exchange their ideas for desired learning outcomes.
- **Assessment,** where learners get feedback and support in different forms.

Participants find SL accommodates the archetypes of the cybergogy model and they appear to value these practices in which students experience immersive learning. Participants' experience is supported by other research. For example, Gao et al. (2009) find in a survey of 36 undergraduate students that SL affords a more informational or conversational style once compared with f2f role-playing activities whilst the learning potential may be similar in two environments. In this case, some students may feel more comfortable contributing to SL role-playing activities. Likewise, Cook (2012) finds the design of the virtual primary care pediatric clinic allowed her family nurse practitioner students to develop their pediatric clinical skills. Specifically, "the students had an opportunity to spend more time with pediatric cases and to work through the diagnosis and treatment" (ibid, p.526). Further, Rogers (2011) finds in an interview of 16 undergraduate nursing students who were exposed to six simulated clinical scenarios created in SL that students developed cognitive understanding of teamwork and collaborative problem solving and interpersonal skills through experiencing human interaction.

Sheila Yoshikawa has designed activities that appear to fit the model of cybergogy. In Sheila Yoshikawa's course, which focuses on developing students' IL skills in key

areas and their understanding of IL theories and practice, in-world activities were designed to involve students working in groups and interacting with 3D models of the educational concepts. In this setting, students can have hands-on experiences within which the sense of presence and sense of place is carried out. At the same time, there was an opportunity for students to access a wider range of participants for their interviews exercise. Group discussions and work, which focus on the information problems provided, are the activities that Sheila Yoshikawa has built into her course so that students explore through communication and interactivity between each other. Sheila Yoshikawa and her students take part in these interactive activities as implementations of the "meshed" component of the cybergogy model.

A key point I draw at this juncture is that the principal mode of teaching was largely the model of cybergogy in the medium of SL whereby the learning process is seen as "experience." This is significant for my purpose here in illustrating how Sheila Yoshikawa values experiential learning in which students are a core component in the experience of a VW. The conception of teaching within the SL context indicates that learning can in fact be experiential, allowing Sheila Yoshikawa to address essential aspects of immersive experience. This theme emerged early in the study almost as soon as I began my observations of the f2f classes and in-world activities and interviews with Sheila Yoshikawa. It continued to be reinforced throughout the elicitation interviews and was always stated with associated terms. For example, in discussing Sheila Yoshikawa's implementation of her teaching into SL, she states:

The link with SL there was getting the students to think about what they had just learned and try to apply it……the ultimate objective is that the students are able to carry out a research interview in SL.

Sheila Yoshikawa links her use of SL into the class with the verbs of "learn", "apply", "carry out", which largely have connections with the experiential learning paradigm. The activities taking place in the classroom and SL are participant-centred, action oriented, discovery driven and collaboratively motivated. These activities in SL create opportunities for experiential learning. Experiential possibilities are an affordance of VWs that can improve students' learning and skills according to several studies (Bouda 2011; Dalgarno & Lee 2010). Their comments on the transformation of experience as a learning process indicate that experiential activities within VWs can

lead to enhancement of skills for teamwork, planning, organising, applying, analysing and reflection. Further, the experience is reinforced by the ability to construct an identity that brings a sense of presence and co-presence into the learning process. This belief is important as students express feelings of participation and being together to communicate, collaborate and interact in VWs. Kapp & O'Driscoll (2010) associate experiential learning in VWs with four mechanisms, which are students' ability to operate the avatar, to navigate the platform, to participate in activities, and to interact and collaborate for the intended learning outcomes.

The theme of experiential learning, which emerged from the unit of the IL module, has links with the theme of cybergogy, which emerged from the interviews. In the cybergogy model, Kapp & O'Driscoll (2010) illustrate learning archetypes, which are avatar persona, role-play, scavenger hunt, guided tour, operational application, conceptual orienteering, critical incident, co-creation, small group work, group forum and social networking (see Section 2.12 for further detail).

Within the learning archetypes of the cybergogy model paradigm, activities designed by Sheila Yoshikawa for her class have experiential learning units such as furnishing and designing the mini islands, conducting interviews and group work to deal with information problems. These activities could be seen to enhance skills such as navigating, integrating and designing, as well as interpersonal skills such as presenting, interviewing, and team working within the socially enriched context of SL. Developing the learning process through experiential forms incorporates the use of learning archetypes of the cybergogy model. The activities designed using the principles of experiential learning and the cybergogy model can provide socialisation, exploration, and conversations that lead to focus on experiences as the learning process.

In this section, I discussed three themes so far that converge on a single area of interest, which is the implementation of teaching within VWs. I have discussed the case of Sheila Yoshikawa in this study and interviews with participants who have preferred using SL in their courses. The results of this study are in accord with other research that indicates that the uncertainty aspect, the cybergogy model and the experiential learning concept are considered components of teaching strategies within VWs. In addition to this, while I was focusing on the educators' adoption of

immersive experiences, another theme emerged in the unit of the IL module and was supported by other participants in the interviews, which was the importance of classroom relationships in the context of VWs based teaching. The teaching presence of Sheila Yoshikawa within SL was an essential element of students' immersive learning experience. Thus, this theme emerged to understand how Sheila Yoshikawa establishes her teaching presence in both f2f and in-world formats. This theme is related to influences of dynamic relationship on students' learning experience. This is particularly important when communication and interactivity are considered key opportunities for teaching and learning within VWs. This theme is actually considered for any teaching context, but it might be crucial to establish and maintain such relationships in the context of immersive teaching and learning experiences.

Dynamic relationships are largely about students' characteristics and they are at the core of sparking interactions between learners and learners and educators. At this point, developing a presence with a social and emotional manner comes forward in the unit of the IL module in order to encourage dialogue between Sheila Yoshikawa and students, and among students. The key to collaboration in VWs is interpersonal interactions, which is carried out to a large extent through representations of individuals, that is, avatars. Therefore I attempt to discuss the dynamic relationship theme within the concept of social presence and Sheila Yoshikawa's avatar appearance. By doing so, Sheila Yoshikawa's identity creation and projection through her avatar could be considered to lead to the establishment of positive relationships between students and her. It is based on the idea that Sheila Yoshikawa's conceptualisation of the self within VWs may provide meanings associated with her social formation. Further, the social presence and socialisation created through the avatar of Sheila Yoshikawa, having f2f interaction components, may be helpful to reduce physiological distance between her students and herself. These characteristics have much in common with existing concepts of immersive teaching experience within VWs. Thus far, it was clear from the data analysis that educators' characteristics play a key role in their teaching strategies. That is, the influences on educator's beliefs and perceptions about teaching strategies within VWs are largely internal and drawn from experience. Besides, the development of rapport between students and Sheila Yoshikawa and among students was an essential component in sustaining collaborative social learning. My interviews with and observations of

Sheila Yoshikawa indicate an underlying characteristic that may explain establishing rapport as inspiration for students' collaborations. It is termed as "teacher immediacy behaviours" (Edirisingha et al. 2009) in distance learning that is also present and valuable within immersive experience. The concept of immediacy within VWs may refer to feelings such as being in a class, being next to their peers and tutors (ibid, p.468). These sorts of behaviours aim to lessen the psychological distance between students and educators. Such behaviours may for instance include humour, soliciting opinions, self-disclosure, or visual expressions. For example, Sheila Yoshikawa employs visual and textual humour to diffuse initial apprehension in the environment. Furthermore, Sheila Yoshikawa often attempts to encourage dialogue between students and to solicit their opinions by using humour in SL. Comments such as *"he crashed or rather his computer did"* and "*bubble wand alert"* or *"I'll pick ******* [name is anonymized] now ;-)*, why do you think it's knowledge, "*Student: good idea pick on her"* capture Sheila Yoshikawa's attempt to nurture and scaffold students' communications. This use of humour is a regular occurrence. Frequently Sheila Yoshikawa purposely employed humour to provide a lead in to keep the conversation flowing. In this case, symbolic and textual humour contributed to classroom climate. This suggests humour played a key role in encouraging dialogues between students in SL.

Sheila Yoshikawa's interactions with students led to the defining of her personality within the social context of SL. Such conversational style may serve to identify a certain identity type of Sheila Yoshikawa. One further point to add in relation to this is that Sheila Yoshikawa's character, that may represent her intended identity in SL, is a way of projecting her personality and social disposition (Taylor 2002). In this instance, the appearance of Sheila Yoshikawa's avatar in SL is an important component in forming her identity or performing her persona that involve informative clues about her social formation, characteristics and stereotype. Although Sheila Yoshikawa's physical presence, which is her offline identity, is present in the classroom during the sessions, the identity constituted in VWs might be actually a closer reflection of her self (McKenna et al. 2001; Taylor 2002). This suggests that individuals can put a lot into representing themselves genuinely or in more depth in VWs. There are other studies which find that the self is a reflexive agent within VWs and these sorts of environment provide individuals with an important ability to label

themselves with a set of expressions regarding their appearance (Boellstorff 2008; Warburton 2008). Further, Yee & Bailenson (2007) suggest that individuals' behaviours are in tune with the appearance of their avatars. That is, how Sheila Yoshikawa portrays her avatar has influences on her experience of being a person within it. Her behaviour and character traits are compatible with the type of avatar she has in ways that are similar to that in the physical world.

Although it is true that the extent to which the self in the physical world and SL has similarities or differences varies according to the individual, Sheila Yoshikawa's avatar could be seen as a lens that reflects aspects of her "real life" personality and attributes. Her avatar's sophisticated skin, shape, eyes, hair, contemporary outfits, and accessories are identity indicators to project the sense of self, or personhood. The design, style, and other stylish details of her clothing and accessories indicate aspects of Sheila Yoshikawa's identity, such as her taste, and social class. The characteristics of Sheila Yoshikawa appear to fit these components of social presence. If we consider how social norms and sanctions emerge to influence avatar identity formation (Yee & Bailenson 2007), it is not surprising that she performed stereotypical behaviours related to her projected self. Such an approach to identity suggests that we expect Sheila Yoshikawa to adhere to a specific set of behaviours and present a reliable and recognizable identity. At this point the appearance of Sheila Yoshikawa may offer insights into facilitating communication and heightening social interaction throughout dialogue between students and her. This is also supported by the qualitative study of Evans (2011), based on 40 semi-structured interviews, suggesting that the experience of being a person within SL may help in building rapport quickly with individuals. The development of rapport between students and her and amongst students can push the quality of immersive teaching and learning experience. The study of Jones et al. (2009) on the quality of students' discussions between those which were conducted within VWs and those which were not supports this point by stating that students had developed greater rapport in VWs.

5.3 Interactions of Classroom and SL Pedagogy

The second area of interest that I discuss is how educators' classroom teaching is influenced by immersive experience. As identified earlier in this chapter, SL sessions are the part of the courses in a blended format. According to Salt et al. (2008) there appears to be great value in combining classroom teaching with the pedagogical affordances of VWs. Whether teaching in SL gives educators insights to enhance their classroom pedagogies, is therefore an important point to discuss. One theme and various dimensions that developed from the interview data are related to whether teaching in SL has inspired educators' teaching in other spaces in any ways. It is to this topic that this section now turns.

Participants in the interviews most often reported that teaching in SL has raised the expectations in their classroom pedagogies, as they were more creative and reflective about their teaching assumptions within VWs. This suggests educators consider being in VWs to be a source of inspiration for their other teaching strategies. Creativity can be characterised as using encouraging approaches to make learning more interesting and engaging. Thus, effects of practising teaching in a virtual world are a valuable point within educators' beliefs about their teaching. The data that emerged from the interviews suggested that the concepts of creativity and reflection are related to educators' teaching practices within VWs.

My research participants indicated that creativity could have a powerful impact on the teaching practice, as it pushes the boundaries of what previously had been considered possible as well as leads to reflective practice through sharing experiences in discussion and collaboration with others in VWs. In the characteristic environment, educators can explain creativity as a way of encouraging and supporting practices. The user-generated nature of the environment is a dynamic process, which includes a wide range of design from commercial to non-commercial, professional to amateur, individual to together, fosters creativity in expressing anything imagined. It is the ways in which creativity can be expressed and experienced at multiple levels in this user-generated environment.

Vygotsky's (2004/1967) view about creativity suggests that it has aspects in emotions, imaginary, individual and social experience. Taking into account Vygotsky's

observations, I identified the indicators of creativity as emerging through design of the space, and learning activities, and design of the avatar as a form of expression for Sheila Yoshikawa. In addressing Sheila Yoshikawa's strategies to design the island in Section 4.10, it is clear that her imaginative visions of the island reflect blending ideas moving from constraints of traditional structures of teaching.

Ward & Sonneborn (2011, p.34) suggest that creative expressions can be examined in the context of VWs by using the Four C model of creativity (Kaufman & Beghetto 2009), which are mini-c, little-c, Pro-c and Big-C to introduce levels and degrees in creativity, depending upon their impact in a given domain. These authors argue that VWs enable users to produce and consume creative content, both individually and collaboratively. Central to Ward & Sonneborn's argument is to lead to new insights and understanding the concept of creativity within VWs and consider how the personalization of avatars and in-world experience might interact with the types of creativity.

Kaufman & Beghetto (2009) describe four dimensions of creativity as; while the concept of mini-c suggests the idea of personal understanding, expression and development aspects of creativity, little-c is bound with the idea of everyday creativity in which the average person may encounter each day. In the level of Pro-c, it is expected that creativity could enhance learning, and skills to become professional-level expertise and produce products, whereas, innovative, eminent, clear-cut level might be expected in the Big-C.

In this regard, for example the ways in which individuals use editing tools to modify the appearance of their avatar, clothing, or dwellings might reflect the form of mini-c as well as the ways in which they develop skills by creating content in VWs might reflect the form of little-c. Therefore, Kaufman & Beghetto's (2009) the Four C model of creativity is useful to understand Sheila Yoshikawa's developmental trajectory of creativity that is evident in SL through her expression and design forms. It can be possible to express the range of creativity levels within creating virtual buildings, structures, literary content, avatars and costume design, to name just a few in VWs, including multicultural exposure. However, I only focus here on aspects of creativity in Sheila Yoshikawa' expressions, as it is not my intention to characterise the whole of SL. I simply wish to identify some examples of different types of virtual creative

practices of Sheila Yoshikawa, which is just a small fraction of SL. It is also worth noting that the model offers a framework to classify various levels of creative expression, yet it does not necessarily require passing thorough each category to exhibit progression (ibid, p.6).

Considering the Four C creative model, Sheila Yoshikawa's aesthetic personalisation of her avatar, in a way consistent with her understanding of the VW, therefore might be a good example of mini-c as a way of expressing intrapersonal insights and interpretation, ideations of creativity. Sheila Yoshikawa is a keen follower of fashion and purchasing clothing and accessories to alter her mode of avatar. Sheila Yoshikawa sometimes prefers to craft the products that she purchased in SL in the ways that are aesthetically pleasing for her. Her avatar appearance is in some aspects as close as possible to her own real world appearance. However, a mini-c avatar personalisation might represent a variety of appearances which are similar to the physical world self, or idealised self. Sheila Yoshikawa's practices of a mini-c creativity can also be observed in crafting a profile to include relevant information such as self-descriptions, interests, or belonging groups. Furthermore, it is reasonable to consider additional practices as mini-c in Sheila Yoshikawa's personalised environment. Whilst the island belongs to the institution in the UK, she owns a variety of areas on the island that can be characterized as her own space, which may reflect her personal creativity. She purchased some appealing structures or buildings and decorated them inside and out with artsy-craftsy motifs, furniture, plants and a wide variety of virtual objects and textures. It is clear from my observations during the study that Sheila Yoshikawa's construction of avatar identity that reflects mini-c creativity is influenced by her physical world experiences. It is reasonable to expect this, as individuals tend to bring existing concepts based on their physical world experiences when they immerse in VWs.

Ward & Sonneborn (2011, p.35) state the possibility of progression from mini-c to little-c through acquisition of skills to produce content or potentially to Pro-c by "adopting the professional identity of producing virtual content as a way of making a living". In this point, setting up a shop with autumnal feeling in SL to sell framed photos of RL autumn or creating virtual objects such as, 3D SCONUL 7 Pillars Model, that were of interest to others, could be reasonably characterised as Sheila

Yoshikawa's little c creativity, if not Pro-c since Sheila Yoshikawa does not primarily aim to create virtual products to sell them as part of her profession. Based on the conception of the model of creativity, crafting virtual objects in SL can be considered as one aspect of little c. Sheila Yoshikawa purchases ready-made objects, which may be developed by skilled individuals for the island, yet the ways in which she personalises the environment can reach as much a reflection of little-c. The island contains properties and some structures, which may have features unique to VWs, such as buildings placed above the surface, and are aesthetically pleasing for her. Although some properties, objects and beautifully crafted furniture, including chairs, tables, sofas and plants are imitative recreations of physical world structures, they are creative in the sense that they were artistically rendered and emotionally evocative. To amplify this point, Sheila Yoshikawa for instance mentioned that she realised she was becoming emotionally attached to various bits and pieces on the island and felt it was her own land. There is also a café with tables and chairs and other publicly accessible venues on the island that may support social interactions among avatars in encouraging the creative functioning of group activities. Another example is with designing clothes. Sheila Yoshikawa at some point creates clothes of any merit to offer them free to incentivise and boost people to visit the island. On the other hand, Sheila Yoshikawa presents in SL/RL educational conferences such as VWBPE, and participates in SL discussion meetings, and publishes relevant academic papers that could be considered as part of her profession, Pro-c. The nuance here is Sheila Yoshikawa's professional creative contributions to the field. The central focus at the Pro-c level is therefore Sheila Yoshikawa's accomplishments. With years of acquired expertise and advanced experiments, Sheila Yoshikawa and the island are being recognized worldwide by educators in SL.

Potentially, a question that could be considered in relation to these arguments is whether and to what extent the Four C model is unbiased and the boundaries between those levels are distinctive. The interpretation of the impact of creativity is rather complicated by objective and qualitative merits. Nevertheless, I essentially argue that the personalization of Sheila Yoshikawa's avatar and her immersive experience interacts with the concept of creativity that might be previously restricted by implicit assumptions carried with physical world experience. The point here is not to say that any of these have a direct influence on the teaching activity, but rather that, VWs

enable a "personalisation of experience" (Ward & Sonneborn 2011, p.44), that is self-expression, which might be either not possible or more difficult to implement in f2f situations. It appears that a VW experience could thus possibly be stimulating for the concept of creativity. This then may lead to spark new ideas for practices of teaching and help to establish "classroom cohesion", as emerged from the data. Likewise, Jeffrey (2006) identifies common characteristics of creative teaching as involving innovation, exhibiting pleasure from creative processes, and investing time in discussion and critique. In this respect, Jeffrey (ibid, p.406) argues that "creative use of space" in which learning activities take place in different environments is an educational strategy for creative teaching. At this point, Sheila Yoshikawa's use of SL is a good example of a strategy to stimulate creative learning. Similarly, Craft (2000) identifies "possibility thinking" as the key characteristic of creativity in education, which was considered as encouraging learners to take control and act innovatively in technology based activities (Jeffrey & Craft 2004, p.81). Within this paradigm, Sheila Yoshikawa encourages her students to experiment and take an active role in SL as taking control in their learning and acting in a way that they might have never practiced previously.

According to Jeffrey & Craft (2004, p.77), there is, however, a distinction between "teaching creatively" and "teaching for creativity", based on a framework of Woods (1990) for creative teaching, and creative pedagogies would be the relationship between teaching creatively and creative learning. They explain that the former is more concerned with "effective teaching" to engage and motive learners, whereas the latter is interpreted as having "learner empowerment" and encouraging learners to foster their creative abilities. They argue that teaching for creativity includes teaching creatively and teaching creatively often leads directly to the former. This distinction is useful in highlighting Sheila Yoshikawa's practices within SL to consider as both at the same time, even Sheila Yoshikawa does not explicitly plan to do so. Likewise, Péter-Szarka (2012) points out the concept of "creative climate", based on the study of Ekvall (1999), with a specific focus on the environmental factors of creativity such as the role of the surroundings, rather than the internal determinants of creativity such as individual and personal characteristics. According to Péter-Szarka (2012), creative climate dimensions presented by Ekvall can also be implemented in the educational context. The descriptions of a creative classroom atmosphere can be characterised

with challenging, interesting, and motivating dimensions in which new ideas, and possibilities can be arisen. In this sense, these factors seem to play a decisive role in building up Sheila Yoshikawa's creative teaching practice.

Considering the concept of reflection and creativity together is also an important aspect, since reflection may bring new opportunities to experience the phenomenon in a fundamentally different way (Sengers et al. 2005). Furthermore, though the constructions, and design might be creative from an aesthetic or experimental perspective, this does not necessarily lead to inspiring ideas for teaching. Taking the idea of Vygotsky (2004/1967) for the process of creativity into account, educators' teaching strategies within SL needs to include the process of collaboration, repeated practice of teaching, and reflection of the practice in order to enhance their teaching quality and skills. This conception of creativity leads us to consider it as a collaborative process and a promising area to find the "new" things that educators can develop with colleagues. As stressed, one aspect of this conceptual understanding of creativity is to educators' critical reflections over their practices. The data that emerged underlined this by stating that immersing in SL would be a potentially valuable means of reflecting upon their teaching practice.

Sengers et al. (2005, p.50) define reflection as a critical process to "bring to unconscious aspects of experience to conscious awareness." It is important to consider reflection in this way as it recognises the characteristics of reflection in the ways educators learn and do. This conception of reflection is about how to teach in VWs since it underlines the ways educators learn by doing. Furthermore, the process of reflection is also essential for educators' professional development, which is highlighted in the ways educators learn in/about VWs (Schön 1983). Learning becomes a major process in teaching, when educators become reflective, focused and conscious in teaching (Miller 1990, p.45). In sum, I identify two interrelated ways in which beneficial engagement appeared on a broader scale. In this research, the motivation for reflective practice was observed through educators keeping personal reflection on their own practices and having internationalization that provided them with global perspectives, which also highlights the social nature of creativity.

In order to capitalise on the importance of in-depth reflection, I next discuss this with another theme that emerged as "trial and error". This is because the process of reflection intertwines within the ways educators learn and do and is considered as a matter of continuous improvement of practice through reflection. Having an intrinsic desire to adopt new strategies in VWs and being willing to explore through trial and error is another trait that participants share regarding learning about them. Experiences of Sheila Yoshikawa indicate that intention and motivation are key factors in immersing within VWs. This is the third area of interest that I discuss relating to teaching in VWs. SL, and the intersection of it with trial and error is a concept that Sheila Yoshikawa and the participants experienced largely in their early days of immersion in SL. With the initial exposure to SL, Sheila Yoshikawa learned about it experimentally and socially. Similarly, participants value learning through a trial and error method and are happy to ask for help and support from experienced others when they feel they need it.

5.4 Becoming SL Educators

The experiences of Sheila Yoshikawa involved going around in SL, developing skills such as editing, creating, visiting shopping centres and galleries, and joining various groups such as ISTE, Deep Thinkers, Sascha's Designs for classy formal and casual outfits & accessories, to name a few. Conceptualisation of reflective practice is often considered as a written activity, however, reflective practice can also be expressed through various activities which use written, visual, oral or performance modes of expression (Moon 2004). In this sense, Sheila Yoshikawa's online blog[5] related to her adventures with SL, for instance, can be considered an integral component to identify aspects of reflective practices in her immersive experience. The online blog allowed Sheila Yoshikawa to progressively document her feelings about her immersive experiences. The online blog featured Sheila Yoshikawa's reflective comments about various aspects of her experiences and avatar, such as design outcomes, including sizing, fit, overall look and impact. This type of reflection, an online blog, is expressed in the written mode underpinned by visual components such as snapshots.

[5] Though, Sheila Yoshikawa's blog for her SL adventures is not dedicated to her teaching practice and interactions with students, considering ethics and their privacy.

By so doing Sheila Yoshikawa has the opportunity to experience, question and reflect, thus gaining confidence in the usefulness and usability of SL and the accompanying appropriate strategies. This also reinvigorates Sheila Yoshikawa's interest in teaching.

Following the initial exposure, she began sharing her experiences with others through SL meetings and conversations with colleagues. Often this type of reflection is presented interactively and concerns ideas regarding what was done well and what was not so effective. The ability to meet colleagues from geographically remote locations in SL to discuss, create and explore concepts can be a major factor in improving teaching strategies. In this way, Sheila Yoshikawa is also prioritizing embodied, visual, audio and spatial modes of reflection. Another example could be seen in presenting in a series of VWBPE conferences and running SL journal club meetings. For instance, Sheila Yoshikawa reasons about the elements of teaching and learning within SL and experimentation of her avatar, and why these aspects relate to her character in one of these conference series. Similarly, SL journal club meetings help promote current awareness, and critical thinking skills as well as cohesion of the participants. Sheila Yoshikawa and Pancha have been holding regular, usually monthly, meetings since 2010 to discuss and critique a published peer-reviewed research paper. The development of rapport between educators can also enrich the quality of their discourse about teaching. Sheila Yoshikawa and Pancha have developed greater rapport as were indicated in comments them made during sessions and meetings in SL. This cooperation encompassed collegiality but the ways teaching is connected differentially in this type of environment is more important. This is where the concept of professional development and SL intersects. This aspect emerged when the participants indicated their motivations to come together in SL, other than the classroom requirement. Participants appreciated the opportunity to be able to network internationally with colleagues, and valued the accessibility and availability of the material, events and educational recourses. These comments align with the idea of attending educational events and contributes to professional development to improve educators' practices (Lieberman & Mace 2009).

It is interesting to note that participants in this study centered their professional development on their motivations and incorporated the use of VWs. They believed that VWs provide a means for collaborated learning to scale up. This is a new kind of

conversation about teaching and changing the way educators learn their craft. The interconnected and experiential, user-generated, world of SL integrates into the realm of educators' professional learning, which has not often been done before. One such example is described in the study of Ata & Orhan (2013), which aims to increase educators' awareness of the potential of VWs for learning and teaching, with a focus on the use of SL so they can practically integrate to their own teaching.

However, participants' examples suggest that although professional learning is thriving in VWs and this is an important insight, there appear to be more informal connections rather than formal activities designed with particular purposes to scaffold educators' professional development. For instance, "immersive environments for teacher pre- and in-service education are most conspicuous by their absence" (Burns 2012). Similarly, the lack of research in preparing educators to adopt VWs for their teaching is identified by other studies such as Storey & Wolf (2010) and Nussi & Oh (2014). Nevertheless, a number of educational organisations such as ISTE, and SLENZ utilise SL to enhance f2f and online learning opportunities for pre- and in-service teacher education. This enables educators to engage and collaborate socially and internationally with colleagues as well as allowing educators to take experiential learning, share resources and artefacts that they use in SL. Nussli & Oh (2014, p.232) indicate key components of effective teacher training in VWs into three pillars, which are, (a) scaffolded introduction to VWs, (b) assistance for educators to acquire the unique skills required in-world and (c) successful modeling of effective teaching within VWs. Later, Nussli et al. (2014, forthcoming) propose a teacher preparation virtual world 6-step model through virtual world experiences in teacher education programs. The Model includes (a) scaffolded introduction to a virtual world, (b) collaborative explorations framed by a pedagogical rationale and self-reflection, (c) identification of unique affordances, (d) design of learning activities framed by a pedagogical rationale, (e) assistance of a more experienced in-world facilitator, and (f) learning how to locate subject matter directories in-world. This procedure can contribute to attitudes 'of pre-service educators' towards experience within VWs.

In sum, professional learning is an effort to build a culture of participation within an interconnected sense, which foregrounds the importance of the experiential nature of teaching, and highlights collaboration with one's colleagues as a continued part of

improving one's practice. Described in this way, professional learning is centered in collegial interactions in which learning objects are voiced by educators themselves and they strengthen their own work by bridging on the work of their colleagues. In many ways, this is the opportunity for educators to become articulate about their practice as well as to see others teach, to examine artifacts of teaching and learning, to reflect on their work, to explore the details of practices. This is also consistent with the idea of trying to update educators' awareness, challenging their own assumptions, reflecting on their own abilities and refreshing their thinking and skills. The examples of how Sheila Yoshikawa embedded reflection in her practice with SL develop a reflective approach in the discourse of her teaching, equipping herself with the skills for effective, engaging, and creative teaching. This also helps educators making improvements from seeing no objectives for VWs in their teaching to realising the benefits and going beyond the barriers and eventually looking for the ways to use VWs.

5.5 Strategies for Students' Potential Antipathies towards VWs

Student disquiet about engaging within SL and challenging the idea of experiencing within VWs may in large part be caused by considerable unfamiliarity with such environments. While there are no clear-cut methods to maintain excellent engagement during the learning activities, educators' efforts to circumvent this potential dislike and reassure students to engage with the activities emerged from this study. This last area of interest became evident in my study from comments from participants, from my observations and from Sheila Yoshikawa's remarks (see Section 4.13.1.4). It is linked intricately with the previous theme that focuses on the concept of pedagogy of uncertainty, which considers the ways in which anxiety and strangeness could be seen as productive ways of teaching for educators who teach in VWs. There is uncertainty, unpredictability, and potential intimidation, and for White & Le Cornu (2010) this nature of VW culture opens up teaching opportunities to harness students' learning experiences. It was clear from the participants' comments and my observations (see Section 4.11.2) that students' awareness and familiarity with SL is minimal and that brings obstacles for educators to overcome. Other researchers indicate this lack of student experience within VWs. For example, the study of Case et al. (2009, p.7),

which surveyed 218 undergraduate students indicates that 1% of students visit SL and 2% visit other VWs each week.

Participants in my study indicated that the causes of this anxiety are primarily rooted in the perception of discomfort at new and different social experiences and forms of identity. This suggests that distress is connected with the construction of avatar selves and students' concerns primarily stem from misconceptions, or insufficient learning about the environment, which could ultimately lead to hazards or losses.

This is also because the nature of immersive learning appears inductive and often subtle in which students practice observations and experiences, consciously and subconsciously in VWs. Novice learners who do not have sufficient experience about immersion may therefore perform learning tasks without having their misconceptions thoroughly addressed. Thus, learners may emerge from immersive experiences with false ideas of their own confidence.

To hedge against negative feeling, participants often stated the value of providing clearly identified learning outcomes; that is, a specific basis for involving students within VWs, developing relevant content and designing meaningful activities. Other studies also clearly demonstrate this is crucial to establish (Storey & Wolf 2010, p.68). That is, when students explicitly understand VWs' relevance, they value the immersive experience.

It is striking that according to some participants, letting students voice concerns, and express their anxieties is essential in the constitution of self-understanding and embodiment. It is beyond the scope of this study to explore psychological meaning and aspects of selves with regard to identities in VWs, but this assumption has led me to consider the conception of "talking cure" (Freud & Breuer 2001/1895), as one participant explicitly referred to it. It is a psychoanalytical practice, a medical treatment in which the patient tells a story and the analyst tries to interpret and decipher. According to Freud & Breuer (ibid), their patients benefited from talking through, in detail, the thoughts and feelings they had about their disturbing experiences. In a broad sense, the roots of psychoanalysis lie in understanding selves and the meanings of behaviour of human beings, and in a narrower sense this process provides insights into self-reflection, self-interpretation and self-formation. Realising

that as a medical treatment it is currently considered obsolete, the Freudian conception of a talking cure provides insights into determining and forming unconscious or subconscious impulses, such as social and physiological desires and fears as it relates to immersive experience. These unconscious factors are important as they ultimately shape and determine one's experience of the self and technology.

In the psychoanalytic perspective of the self being determined by unconscious factors, "an uncanny feeling" (Carrington 2005; Bayne 2008) might occur as a source of anxiety towards the concepts of immersive experience. It seems that much of psychoanalysis' evidential base has clinical connotations and rests in the clinical indicators such as neurotic symptoms, emotions, dreams, and thoughts. In this research, I employ the term in its broadest sense to refer to the dynamic process of overcoming challenges in SL and pragmatically this approach helps to create a dialogical format in which students are stimulated to question, analyze, and transform their own personal understanding of the embodied self. It assumes that talking about the details of an affair is essential for the recovery of confidence and for healing. For instance, Avatar9 states that "*I had one student. She found SL threatening a bit with her. I had some one to one sessions. I talked though with her what her concerns were and went online with her in the lab."* This statement of the participant captures well the understanding of talking cure as a form of disclosing emotions by putting upsetting experiences in VWs into words. It offers a promise of listening, empathy, and understanding, thus contributing to the perceived therapeutic effects of talking cure within VWs. It is can be inferred from the participants' remarks that educators might reduce distress and make students feel better by saying phrases such as "I so get what you mean," or "it is ok to feel that way". By doing so, initial experiences of frustration or the feeling of loss can dissipate to be replaced by feelings of enthusiasm.

At this point the criticism can be raised that talking with an encouraging manner in which inspiration emerges may not simply be a means of dealing with students' sense of frustration. This is to say that some investment is required on the part of educators in supporting students through different stages of the activity. Participants' remarks suggest that students suffer from the lack of explicit or clear scaffolding and more systematic support is needed to position students to perceive the content

meaningfully. VWs ideally require a heightened awareness of scaffolding techniques (Moore & Pflugfelder 2010, p.250) and defining characteristics are particularly important in the context of VWs. This may require rigorously monitoring and planning all activities with established technological scaffolding. However, I here consider practical strategies of the participants and such an approach might be pertinent to institutional and technological infrastructure analysis.

Participants' comments indicate that it is within a declining manner that gradually reduces and eventually disappears as students' capabilities develop, whilst the provision of declining of scaffolding is not a necessary condition. While this does not provide a sufficient argument regarding the extent to which scaffolding is provided and desirable, participants' strategies are nonetheless examples of scaffolding. Further, scaffolding provides supportive aids in the form of strategies, and guides to assist learners. Some participants, for instance, treat support as something of a craft. They give students the skills they need to effectively learn in VWs. What they indicate here is the process of acquiring or developing the appropriate skills.

Gresalfi et al. (2009) attempt to support students' engagement within VWs at three stages, which I find useful to structure my discussion. They describe dimensions of scaffolding as procedural, conceptual, and consequential. Further, Lee & Dalgarno (2011, p.142) add three other categories, which are instruction, coaching, and enabling tools as pedagogical dimensions. The procedural level, for instance, includes sequences of steps to perform the tasks, ways to complete the tasks or guidance on how to carry out the tasks as part of an orientation. One way of providing procedural scaffolding within VWs is to allow students to have greater navigational control and the ability to manipulate the parameters of the environment such as through camera control, and the facility to edit their appearance. In Sheila Yoshikawa's case, it seems that this is particularly essential in the early stages of the module. The conceptual level goes beyond the procedural level and helps students link their understanding of the content. The scaffolding that assists the participants' students involves explaining why they are there and what they are supposed to be doing. A necessary skill set ideally includes enculturated understandings of the immersive experience and literacy and educators need to support students in understanding these. In Sheila Yoshikawa's case, this includes external resources such as key readings within the learning domain,

instructional videos, visualisations of the concept, or heads-up display (HUD). The consequential level considers allowing students to recognise the usefulness and impact of the desired outcomes. In Sheila Yoshikawa's case, this is illustrated for example by providing hyperlinks to interact with others in SL and conduct their interviews or by leading information questions in the form of prompts in the group activities. Attention is given to interrogating the value of using SL on learning outcomes.

Within the context of this unit of analysis, further support from Sheila Yoshikawa was available at various times to answer students' questions through different means, such as office hours, IM chat in SL, and email. This was seen as particularly useful to encourage students. As such, these different ways of scaffolding are not separable, but interact and build upon each other. The data suggest that these strategies might lead to a more critical pedagogical stance in a scaffolded and supported manner.

Student frustrations may also occur when the SL activity requires relatively higher levels of skills, such as modeling, crafting, or creating. Other SL skills, such as moving or communicating, are typically perceived as relatively easy. This time the data suggest that participants tend to look for peer-scaffolding and ask the students to find a comfort zone for doing the activity together. This was also evident in my observations of the students who had less experience within VWs. The participants' strategy then is to involve students in pairs and motivate them by sharing of joy.

For other participants, the data suggest that helping students to develop their own presence by establishing emotional connection and enjoyment component within the learning activities were motivating factors. The study of Ho (2011, p.112) is consistent with the participants' comments by highlighting that "weak" presence may evolve to "strong" presence. Ho aligns comprehensive strategies in enactive role-play to develop participants' presence, which is transferrable to other educational contexts within VWs. Some of these implications are for instance allowing students to become comfortable and familiar with the environment, giving them the scope to explore and experiment further in VWs, enabling them to develop ownership through personalizing avatar, or setting other locations to engage in other activities. Awareness of these factors allows educators to enable their students to strengthen the sense of presence.

In sum, participants allow students to express and understand their concerns, give them the skills they need to learn in VWs, involve them as peers within activities, and help them invest emotional connections to develop their own presence. These appear to be participants' primary strategies to diminish students' anxieties, which ultimately lead to a certain level of comfort and empower students. These strategies are presented as insights to help educators when designing a SL instructional activity. When such supports are feasible, students' potential frustrations may become minimized.

5.6 Summary

In this chapter, I have elaborated the seven themes I abstracted from the data. I have described the characteristics of the themes, and presented a variety of evidence to illustrate and establish my interpretation. I have begun to consider the implications for teaching practices my interpretation of the data invokes. I have solicited reflections on how participants teaching within SL affected their classroom pedagogies and discussed key aspects of becoming educators in SL. I have discussed participants' strategies around anxiety about what is unfamiliar for the students with VWs. In my final chapter, I summarise the results of the study, use my interpretation to answer my RQs and discuss practical implications for teaching within VWs, including possible areas for future research in an educational context. Implications for practice drawn from the study themes focus on ways in which educators who teach in VWs can conduct a course so that teaching experience is enhanced. Implications may be essential for individuals who consider teaching within VWs as learning environments.

CHAPTER SIX: CONCLUSION

6.1 Introduction

In this final chapter, I present the key findings of the study and link these with the RQs. Each supplementary research question is answered in the relevant section of the conclusion chapter. The findings that are related to the supplementary questions help to gain insights for the main research area of the study, which has been to explore distinct aspects of how immersive experiences and teaching can be practiced to enhance existing pedagogies and bring opportunities for new modes of teaching. Before doing this, I first reflect on my research journey from two perspectives; as both a researcher and teaching assistant, to unfold my vision of teaching within VWs. Afterwards, I acknowledge the strengths and limitations of my study, and use these as a basis for suggesting further research. I finish this chapter by providing an overview picture to indicate whether VWs offer unique forms of pedagogical practice and the extent to which such environments align with embedded teaching approaches. This is to illuminate how the use of SL impacts on learning and teaching.

6.2 Researcher's Reflections on the Study

I reflect on the research from two perspectives; as the teaching assistant in the classroom and from my own personal perspective.

6.2.1 From a Personal Perspective

When I was considering a topic for my research, as I investigated the current status of VLEs and to what extent they are student-centred in my Masters' programme, I developed a great interest in investigating an environment in which educators could enable students to have learning through experience, participation and exploration without feeling isolated. Given the apparent ease of access, interest and the experience the young generation seem to have towards VWs, my curiosity was to explore whether user-generated environments such as SL could be used in activities to leverage teaching and learning. Underlying this interest was the idea that nowadays, the boundary between virtual and physical realities is becoming blurred and VR is becoming firmly integrated into our daily lives. In starting my SL journey, I had some

assumptions and ideas of what to expect and knew very little about teaching or researching within VWs.

When I first began to explore SL, my first experience using this 3D virtual world was not motivating. I was puzzled by how empty it seemed, even sophisticated educational spaces were rarely populated. At first glance, it appeared to be a lonely and frustrating journey. Besides, it has been noticeable that there were times when I was feeling disappointed especially when I faced technical issues as well as hearing people talking about uses that they made of SL, referring to the phenomena of "sex" and "love" in SL; their enthusiasm for SL could be accounted simply in terms of self pleasure with having multiple, different gendered avatars. It appeared to me that social events to provide entertainment, music or dancing, and cyber-sexual encounters were the active part of many users' SL experiences. Further, the idea of having the freedom to play with identity and a place of no boundaries or restrictions on behaviour also appeared to me disconcerting. As time went by, I realised that this way of thinking was misleading and might lead onto false directions. Undoubtedly, sexual activities are a part of the SL culture and actively celebrated by several subcultural communities established in the environment. However, this does not reflect the discourse of educators' practices, which is arguably to be bound by the norms of the community in which teaching and learning is centrally placed.

Given that SL is often very permissive and flexible, it occurred to me that I needed to slightly reflect on my own values and think through my ethical position, since it seemed that I could pretty much re-invent anything I can imagine about myself in SL. This is not a reflection on the participants of my study, but a more general comment about my own initial personal feelings. I feel I have developed in the process both as a person and teaching assistant.

I classify my journey within SL into three phases. The first phase includes the crossing of boundaries from the physical world to SL, akin to crossing from known to the unknown, from one culture to another, from physical life to virtual life as a "newbie". Within this stage I began familiarising with the environment and developing my avatar identity. At this point, passing from being outsider to becoming an insider in SL characterised this level. However, this was not the act of transition, rather, this was just an extension of my experience. I was experiencing the idea of "in-

betweenness" or "metaxis", which is a sense of, for instance, neither here nor there. I was in between-cultures, between the VW culture and my culture of original values and beliefs. Initial adaptation to the environment appeared to be chaotic and included frustrating moments. Through this process, there was a noticeable move from disquiet to familiarity.

The second phase includes learning SL skills, establishing persistent identity and making "sense of place". Within this stage, I began learning practical skills such as walking, running, flying, communicating through text chat and voice chat and navigating. I came to an understanding of the unwritten rules and etiquette of SL. Uncertainty, strangeness, and a sense of presence and space characterised this stage. I had a virtual space to refer to as an office in SL. I designed this office, followed later by participating in learning activities. The property consisted of one furnished room that I dedicated to conduct the interviews and one unfurnished room that I decorated with snapshots and posters from the learning activities. The initial purpose of my residence was to promote immersion in SL through attachment in the sense of belonging to the environment. Throughout this process, I practiced my SL building skills and my SL presentation skills. During this stage, I also made friends within SL, and joined various SL educational groups including ISTE, SLED, and VWER and attended conferences such as VWBPE. The third phase includes engaging in the practice of teaching that is learning to teach within SL, which I reflect in the following paragraph in detail.

6.2.2 From a Teaching Assistant Perspective

I was fortunate to have found a lecturer who allowed me to participate in her module both in the classroom and SL and who shared her feelings genuinely. As a teaching assistant using SL, I highly enjoyed being able to help learners in the environment. My engagement was very interesting in a way that I have learned approaches to assist students within SL. The process that went into facilitating an island in SL was a fun and exciting experience. I think that my presence in SL contributed, at certain times, to minimise alienating, confusing, and complicated circumstances among certain students. For me this role also was a learning or upskilling curve and allowed me to conceptualise my understanding of the context in this module.

Specifically, I learned how teaching and learning occurs in SL through observation and through participation within the module in SL. I focused on the observations of key skill sets such as classroom management, communication modalities, presenting the content. That is, in order to conceptualise my teaching experience within SL, I observed Sheila Yoshikawa's teaching skills to design the lesson, classroom management and communication skills to facilitate dialogue in the classroom, and motivating skills to engage the students. Participating in the module significantly helped me to develop my SL skills, and subsequently my understanding of teaching and learning in SL. I grew confident in my SL skills through dialogue and engagement.

By the time I finished my case study, I came to know that the key to efficacy of immersing within VWs is interactivity, which simply means that students "learn by doing" in this environment. Interactivity was key in order for me to feel immersed while exploring SL. This role also allowed me the space to explore my beliefs and challenge my embedded assumptions about teaching and learning. One such understanding I made in this role was in a lot of ways immersing in SL really pushes the boundaries of what it means to be teaching and learning. As a teaching assistant whose beliefs are firmly grounded in social constructivism, I have gained a deeper understanding of the pedagogical implementations within VWs. It is my argument that the nature of the learning experience becomes messy and meaningful if there is a certain ambivalence and uncertainty.

While I had experience in SL, I particularly enjoyed forming a VWs platform, which was my first initiative in this area of study in Turkey, for educators with my colleague who I never met in person. The aim of this platform was to gather educators from different disciplines and bring awareness regarding VWs and education. We held fifteen weekly meetings in 2012 with a different discussion theme each week. The project went successfully and some key points emerged for us. One consideration was to realise that not all educators have similar levels of technology proficiency or comfort levels. Providing professional development and SL basic skills training on an "as needed" basis is important (see Ata & Orhan 2013 for furtther details). At the same time, this togetherness has led us to plan another project. An institution in Turkey had a presence on the island, in which I investigated my case study, for a year

and my colleague conducted a hybrid of RL/SL digital photography course with her students. This effort allowed me to put into practice the concepts and to design the space for them. I have learned that the role of the educator is significant since all teaching approaches require substantial behind the scenes, SL activities preparation. One important understanding I made in this project was that the way I look at SL is as a place to create and explore. The project indicated that SL could provide a rich and productive context for participants in place-based locations.

Furthermore, I had opportunities to moderate several discussion events at SL journal club meetings, which are held regularly on the island, in which I have developed essential skills such as critical thinking and communicating and helped me to understand different perspectives in a global sense. Relating directly or indirectly to my teaching experience in SL, perhaps these are the most significant aspects in this research for me.

I am now considering further studies to conduct with my colleagues. There is an ongoing project in Turkey, which is known as FATIH "Movement of Enhancing Opportunities and Improving Technology" that proposes to equip 42,000 schools and 570,000 classes that are in preschool education, primary education and secondary education with tablets and LCD Interactive Boards (FATIH 2012). This project is among the most significant educational investments of Turkey. The FATIH project aims to bring over 11 million tablets to the students across the schools in the next 4 or 5 years, at the time of this writing (Trucano 2014). Within the scope of our project, it is firstly aimed to construct an elective course of "Design of Educational Environments in VWs" with stakeholders such as formative ICT teachers in schools in order to provide them in-service practicing. In the further stages of the project, it is then aimed to design and experience a virtual space, named as "Gallipoli", which is considered to be one of the greatest victories during the history of World War I. The attempt is for students to make a sense of space, primarily for those who have difficulties or challenges to visit the place in person by accessing SL via tablets. The motivation here is to explore engagements in the perception of the experience of places, particularly in the forms of historical, ritual, and memorial places within VWs. The project aims to demonstrate the impact that experience of space has on the learning of students in SL and explore how virtual space influences students'

perceptions of physical space. The idea may be similar to that of the studies conducted before, however, it is unique within the context of Turkey. The Ministry of Youth and Sports expressed their interest in the initial proposal and indicated that the proposal would be supported with a funding of £100K for an exhaustive project.

In the following sections, I answer my research questions, present the strengths and limitations of the study and discuss directions for future studies.

6.3 RQ1: How do educators implement teaching into SL/f2f situations?

The so-called "pedagogy of uncertainty" clarified by Barnett (2007) and its tie with teaching in VWs (Bayne 2008; White & Le Cornu 2010) as well as the "cybergogy" concept posited by Chase & Scopes (2012), and the idea of "metaxis" (Falconer 2011) seem to be the catalyst to changes for participants in rethinking the concept of learning and teaching. Section 4.13.2 provided a description of Sheila Yoshikawa's approaches to learning within the pedagogy of uncertainty and demonstrated that she expects to harness her students' learning experiences by engaging them within spaces and practices that may be disquieting, strange, unfamiliar, and disorienting. Foremost, it is evident that Sheila Yoshikawa adopted SL mainly for its potential to foster constructivist and experiential learning (Section 4.13.1), and inquiry based learning (Section 4.9). Most notably, the affordances highlighted by participants regarded SL's potential for being a venue in which students can interact with others, the ability to customize avatars and develop identity presence, the ability to manipulate the environment to create various activities including simulations. It became evident that participants integrated SL into their teaching to design learning activities for place exploration, concept exploration, task or skill practice, role-play, and communication. Section 4.2 provided a snapshot of how participants implement teaching into SL. This was well framed with the conception of the cybergogy model (Scopes 2011; Chase & Scopes 2012), which is based upon the social, cognitive, dexterous and emotional aspects of learning aligned with the revised version of Bloom's Taxonomy of Learning Outcomes (Anderson & Krathwohl 2001). The model became a useful frame to map learning archetypes, outcomes and processes. It is clear from the interview extracts in the study that educators approached the use of VWs, which embraced higher order characteristics of learning such as taking the initiative and

reflection, focusing on a process in which the learning experience is placed. Such a teaching design characteristically focuses on learning experience that promotes socialisation, participation, collaboration, interaction and communication. Among the pedagogical concerns raised, participants highlighted the ability to connect students with others outside of the classroom within the idea of connectivism (Siemens 2006). Emerging pedagogical practices identified by participants were similar to those previously classified by other studies, such as Savin-Baden et al. (2010) and Dalgarno et al. (2013).

Section 4.13.3 moved the discussion to dynamic relationships and includes understanding of developing identity in the context of SL and presence. Section 4.13.3.1 demonstrated that Sheila Yoshikawa's identity creation and projection through her avatar could be considered to leading to establishment of positive relationships between students and her. One of the most notable points I observed in the SL sessions compared to classroom sessions was that the appearance of Sheila Yoshikawa may offer insights into facilitating communication and heightening social interaction throughout dialogue between students and her. At the same time, I can relate that in a class of first-year students Sheila Yoshikawa was teaching, both f2f and in SL, students met an avatar that resembled Sheila Yoshikawa's real-life self and personality, my real-life self, as well as an avatar that totally differed from Pancha's real-life appearance. Students were comfortable with either similar or different expressions of identity, and they did not feel distracted as some of them also had a distinct identity in SL.

6.4 RQ2: Does teaching in SL give educators insight to improve their f2f teaching?

Section 4.4 reported on addressing whether teaching in SL gives participants insights to enhance their classroom teaching approaches. Overall, participants indicated that immersing in VWs helped them to challenge their existing assumptions about teaching and learning and reflected what they had been doing within the classroom. Participants in the interviews most often reported that teaching in SL had raised the expectations of their classroom pedagogies, as they were more creative and reflective about their teaching assumptions within VWs. Participants indicated that this pushes the boundaries of what they previously had considered possible.

In light of the argument that educators consider being in VWs to be a source of inspiration for their teaching strategies, Section 5.3 examined Sheila Yoshikawa's concept of creativity within SL, considering the Four C creative model (Kaufman & Beghetto 2009). Based on their model, it provided that Sheila Yoshikawa's aesthetic personalisation of her avatar might be a good example of mini-c as well as crafting virtual objects in SL can be considered as one aspect of little-c. Furthermore, with years of acquired expertise and advanced experiments in VWs, Sheila Yoshikawa's professional accomplishments could be considered as part of her profession, Pro-c.

6.5 RQ3: How do educators learn how to approach teaching in SL?

Section 4.5 illustrated that the participants often came into SL with little or no immersive experience and the way to become an SL educator is by engaging in hands-on activities, experimentation, and exploration. With the initial exposure to SL, participants value learning through a trial and error method and are happy to ask for help and support from experienced others when they feel they need it.

The data revealed that nurturing professional development in the educational communities motivate educators to sustain adoption of VWs. The connectedness of the community and the engagement of being there to share commonalities or trivialities bound educators to the space. The appeal is not principally SL itself, but the presence of the community and togetherness. Most notably, Sub-section 4.5.2 demonstrated that the chance to be a part of something new and exciting, the simple desire to have fun, and the desire to learn, provided sufficient motivation to continue.

6.6 RQ4: How do educators overcome challenges such as learners' anxiety towards VWs?

Section 4.6 addressed educators' strategies to overcome learners' potential anxiety towards immersive experience. It was demonstrated that the causes of this anxiety are rooted primarily in the perception of discomfort at new social experiences. Sub-section 4.6.1 argued that the rationale for adding immersive value into learners' experience is needed to be well established. Further, more reassurance is needed for those who do not necessarily experience presence, embodiment, and are reluctant to engage. For those students, they may need to be given an opportunity to express their

concerns regarding immersing into VWs as well as become familiar and connected with their avatars and the space. Included in this argument is an underlying assumption that letting students voice concerns, and express their anxieties is essential in the constitution of self-understanding and embodiment (Sub-section 4.6.2). It was indicated that educators might need to provide different forms of support within the different stages of the activity (Sub-section 4.6.3). Besides, students could be encouraged to involve themselves in learning activities with peers, allowing them to observe their peers and to influence each other and develop a social presence (Sub-section 4.6.4). Sub-section 4.6.5 indicated that students could be allowed to invest robust emotion and establish a stronger sense of self and place. These assertions are also supported by the findings of Childs (2010, p.261).

6.7 Strengths and Limitations of the Study

Considering the links between characteristics of teaching and immersive experiences with a blend of ubiquitous technologies is fundamental to accomplish a better understanding of how educators optimise their teaching strategies and approach the concept of learning and the learning environment. First of all, this study presented a comprehensive discussion of pedagogic approaches within VWs and highlighted that VWs are better suited to the cognitivist, social constructivist, and connectivist approaches than to simply associative approaches, which are rooted to the transmission of information. Based on the themes which emerged from this case study, the ideal approach would be characterised neither entirely within teacher-led nor student-driven forms but by combining the two. Regarding the theoretical aspects, the study brought the model of cybergogy (Scopes 2011; Chase & Scopes 2012) and applied in order to conceptualise implementations of educators' teaching into SL and demonstrated its juncture with learning domains and archetypes.

In terms of employing methods, some of the key themes emerged from in-depth elicitation interviews conducted with Sheila Yoshikawa and Pancha. This was a different approach among other studies in this area. I prepared various picture boards with attached notecards which referenced a particular chunk of conversations which had emerged in SL activities. To better understand the methodological niche elicitation interviews hold, this gave me an opportunity to zoom in and zoom out of

snapshots and ask specific questions to the informants regarding what had been done and why. This was a genuine attempt to understand and elaborate what snapshots and a chunk of data meant to Sheila Yoshikawa and Pancha and to elicit diverse opinions from them. The combination of screen captures and thematic analysis in particular represents novelty in method that could be used in other studies to explore teaching and learning through SL and other spaces.

Concerning the limitations of the study, restrictions in the research were mostly related to the analysis of the data. Firstly, a case study is about depth and insights not volume. This implies some concerns for presenting a sizeable depiction of a body of literature. The intent of this study was not to generalize to a larger population, but to provide qualitative data that could be considered with the implementations of other studies. Certainly semi-structured interviews provided additional information, but the class with which I worked is not representative of all disciplines taught within VWs and personal qualities and skills of the educator and interactions determine the ways the class is shaped and developed. This can be considered another limitation. However, an exceptional focus on Sheila Yoshikawa's skilled use of SL helped me to capture and analyse much of the setting and provided rich data. Secondly, my interview participants represent a subset of a small population. They fall within the boundaries of an educational community who are actively engaged in educational activities in SL. The situated nature of the setting and pedagogical implementations need to be taken into account when evaluating my findings and the applicability of the research. Finally, the thematic analysis of the participants' reflections towards students' potential anxiety about immersive experience was totally limited to the participant interviews. A full analysis would have been possible if other techniques such as observations, or video recording had been employed.

Another identifiable limitation of the case study presented in this research is that visual and aural data were not included in the data collection process. Visual data are data associated with the avatar, for example, avatar movements, gestures, and visual behaviour. Filming of in-world sessions might have provided more nuanced data for a holistic analysis. The collection of such data may have helped to provide a thick descriptive account (Geertz 1973, p.6). This study relied solely on textual communication and observation for data collection and data analysis. The inclusion of

"thick description" could have provided a more nuanced account of the research findings.

6.8 Preparing First Time SL Educators for Immersive Teaching

In this research, I have represented how participants adopted SL as an essential component of their teaching experiences and the ways in which their engagement has reshaped salient aspects of their teaching practices in the classroom. I have emphasised how VWs inflect teaching practices concerning presence, socialisation, collaboration, and communication. In doing so, I have considered how perceived affordances of SL, namely sense of presence, experimentation, synchronous communication and collaboration have placed a role or catalyzing element in prompting shifts in teaching practices. I have also looked at factors that have arisen out of educators' motivational dynamics to sustain their use of VWs. Having illustrated the conceptualisation of teaching within VWs, in this section I highlight that which I believe is essential for educators to be aware and be able to do in terms of designing learning experiences. Obviously the design process varies depending on the discipline, but the principles below indicate the key competencies needed to teach in VWs such as SL.

- Identify goals to justify use of a VW; that is, consider your teaching style, learning outcomes, course aims to establish a clear connection.
- Explore the affordances and components of VWs; that is, identify the possibilities, strengths and weakness, issues and barriers that may impact the learning process.
- Train yourself and explore how to build and do things in-world; that is, practice 3D modeling and SL skills such as moving around, customizing avatars, navigating the environment.
- Create activities that help accomplish learning goals.
- Careful scaffolding, well-structured class management, and in-time technical support are essential to troubleshoot.
- Consider orientations to accommodate students with locomotion techniques in SL and provide support to become accustomed to navigating around the environment (how to interact with objects, how to chat with others, how to alter the appearance of one's avatar).

- In order to avoid losing students who are reluctant to immerse in VWs, include stimulating spaces to prompt students' sense of empowerment.
- Consider peer teaching to assist with in-world sessions.

6.9 Directions for Future Studies

Having explained the strengths and limitations, this section presents some recommendations for future research projects as new directions in the similar topics. According to the review of current and recent research, and the findings which emerged in this study, the following points can be addressed for further research.

- This study focused solely on the IL module for a single academic term and examined in-depth interviews on how teaching strategies are adopted within VWs. A possible future study would involve a follow up on the participants in this study to investigate whether their teaching strategies continued to change since participation in VWs.
- Many of the topics covered throughout the SL course sessions might be aligned with disciplines such as computer science, engineering, and medicine and concentrates on practical skills, which could have taken a different approach to look at teaching the SL courses in disciplines such as social sciences, humanities. That is, the subject matter taught in the SL courses may have influenced the pedagogical practices employed by educators. Future studies can shed light on which was of greatest value, since the components of teaching within VWS are tied to educators' perceptions of teaching.
- In this study, among the pedagogical concerns raised was participants' motivations to sustain being in SL to engage with educational communities such as VWER. Further work can be done to assist in developing a better understanding of VWs as a venue for CPD.

Finally, I would like to illustrate a holistic view, the culmination of teaching and learning in VWs that has emerged from my iterative interaction with the literature, my personal journey and the evidence I gathered.

6.10 Teaching and Learning within VWs

My literature review indicated that the educational implementation of SL is no longer in its infancy (Wang & Burton 2013, p.365). There are numerous studies that recognise the educational potential of 3D VWs, with their unique features such as the reformation of the sense of presence by offering engaging, interactive and immersive experiences (De Freitas & Neumann 2009; Warburton 2009). Nevertheless, using a VW within educational settings involves a paradigm shift with its different communication modes, vehicles of expression and visualisation (Soto 2013). Furthermore, the incorporation of VWs in HE is fragmentary and haphazard (Farley 2014, p.328). The adoption of VWs in teaching is characteristically inhabited by an enthusiastic and adventurous attempt, largely on a dare, with variable levels of institutional support (Stewart & Davis 2012). Therefore, I examined distinct aspects of how immersive experiences are potentially practiced by the educators, discussed the evolving pedagogies arising within them, and reflected what value the use of VWs adds to a learning experience in HE.

I looked at teaching strategies in which blended learning, i.e. a mix of physical/real world interaction incorporating ubiquitous e-technologies, was involved. Blended learning was not just an "add-on" to class sessions, but an integrative part of the teaching activities. This hybrid approach helps teaching become more student-centred. Likewise, given the argument established about the potential efficacy of SL within education, it may require a great effort to address complex issues in VWs scenarios. To teach learners and augment the capability of VWs, learners may need to be engaged in a combination of traditional settings with e-learning components. It therefore seemed that the ideal use of VWs could be pursued through the blended approaches, in which students are presented by the course material both in VWs and the classroom. Activities in the form of a cybergogy model can be productive when attempted within VWs, whereas activities such as lectures, presentations, and seminars that characteristically entail f2f communications could usually be more suitable in classroom environments.

Using pedagogies guided by the "whole person" approach – taking account of the emotional, physical, or spiritual dimensions of the individual – is also important. Furthermore, educators' conceptions of teaching and learning influence pedagogies

that are presented in students' learning experiences. If educators use a pedagogy that involves students being immersed in new experiences, then they need to have a better understanding of how to use the technology. As such, key aspects of the teaching experience include how educators conceptualise learning, approach to learning, and perceive the learning environment. The principle way of understanding educators' experiences of VWs is to consider their reactions to the context in which they find themselves teaching. By bringing the perspectives such as approaches to teaching, perceptions of learning space to bear on the educator experience of VWs, Sheila Yoshikawa's immersive experience with respect to pedagogical strategies and participants' remarks helped illuminate how teaching was implemented within a virtual world, that is SL.

The traditional lecture-based model of teaching is often associated with lecture attendance, and usually involves challenges to engage students in their learning experience with a nostalgic view on its relatively lower cognitive levels of practice. A range of specific strategies such as guided class preparation, small-group discussion, or positive verbal and non-verbal feedbacks is incorporated to reinforce active participation, where the traditional lecture format is still the norm. Yet, this study showed that participants also implemented new approaches to engage and motivate students, to feel able to pursue their learning, utilizing some gamified design elements such as curiosity, challenge, a sense of control and fantasy – i.e., gamification of learning (Lee & Hammer 2011). This is also consistent with the concept of "flow" originated by Csikszentmihalyi (1997) to describe a state in which individuals involve in an activity with a great level of enjoyment and fulfillment. The flow experience is therefore applicable to VWs for their capacities to be enjoyable and to provide the sense of playfulness and challenging content.

VWs are typically designed to support real time social interaction in which lecture style and teacher-centred approaches could rarely be productive. Thus, there is a strong emphasis on the importance of shifting toward student-centred approaches, which are rooted in constructivist ideas when engaging within immersive experience. The social nature of VWs signifies certain pedagogic approaches, which are viable and scalable for more integrated social learning. The data analyzed in this study suggest that VWs such as SL have the potential to capitalise on principles of this

philosophical position and create a culture of shared practices through social interactions. The central idea of the student-centred approach is to actively involve students in ongoing activities and allow them to develop their own understandings. Here, the study of Goodyear & Ellis (2007, pp.339–341) underlines a problematic character of technology-enhanced teaching as design in tending either teacher directedness which involves prescriptive tasks, or student centeredness which is located around experiences in co-constructivist learning without learner autonomy, i.e. allowing them to make some choices about who they want to work with, share discoveries with, and trust. They argue that what matters most is the importance of situatedness of learning in which the tools and resources as well as the affordances or influences of the physical and digital environment become closely tied up with the experience of learning. Of course, immersing within SL goes beyond social exchanges and much of what is described here.

The discussion about the key aspects of teaching and learning so far suggests several points such as focusing more on the learning process instead of outcomes, shifting the role of the educators to orchestrators of learning and shifting the role of students to active learners. With more student-focused activities, educators typically hold a role of being facilitators, or coaches, which still involves pedagogical, social, managerial, and technical commitments in VWs. The findings of this study suggest that student-centred approaches have the potential to be more engaging with VWs than teacher-centred approaches. Nonetheless, tailoring this shift from which the physical classroom paradigms remains prevalent is difficult.

It was clear from the interview extracts in the study that educators approached the use of VWs, which embraced higher order characteristics of learning such as taking the initiative and reflection, focusing on a process in which the learning experience is placed. Such a teaching design characteristically focuses on learning experiences that promotes socialisation, participation, collaboration, interaction and communication. This also invokes blurring the formal and informal learning boundaries and context. The research clearly indicated that VWs have the capability to aid educators and promote or accommodate aforementioned pedagogies. With the combination of perceived affordances of SL, the social elements and the flexibility of SL itself in accommodating user-created content provided one further element of immersive

experience for educators, which was a formation of personal learning networks to gain knowledge and skills. The data revealed that nurturing creativity and innovations as well as professional development in the educational communities motivate educators to sustain adoption of VWs.

Teaching that approaches learning within the cybergogy model, provides a step beyond traditional forms of learning experiences, and utilises innovative skills such as creativity, communication and collaboration might be desirable, but there has not been a widespread adoption of VWs in education due to several reasons. Linden Lab has decided to remove the 50 % educational discount, rendering it too costly for a great number of educators. Further, Linden Lab does not see educational activities to be an area on which they intend to primarily focus, but see SL as a potentially valuable game development platform. This points to them having no interest in offering direct support for educational institutions. At the same time, the high volume of the learning curve still applies for many, which may lead to haphazard and erratic consequences. The first cycle of educators is still comprised of early adopters who devote numerous hours to exploring, tweaking and creating. Perhaps the majority of others do not want to be forced to dedicate that much of their time and just want to use VWs as long as they receive a lot of help and support in the class. There are still few exemplars of desirable teaching and the academic trend to investigate from the field of education is not growing largely and is even slightly decreasing as compared to previous years. This is consistent with the recent indication proposed by Gartner, which places VWs just off the bottom of the Trough of Disillusionment on the Hype Cycle (Gartner 2013). The educational main trends are therefore more likely to focus on other current initiatives such as mobile learning, or MOOCs.

On the other hand, as the literature reflects, SL has been embraced by a substantial number of institutions to have a virtual presence, or design and experience anything that can be imagined. However, it is noteworthy that most educators use the environment in much the same way that they use physical spaces (Salmon 2009, p.529). Most educational spaces I have visited in SL were full of lecture theatres, classrooms and auditoriums with habitual spatial paradigms such as a regular bricks and mortar classrooms. Educators often stand at the front of the set of avatars representing their class, usually displaying a PowerPoint on a screen and asking

students to raise a virtual hand or text in chat should they have any questions. Students sit on rows of seats and desks facing the front. The typical educational scenario represents an ordinary SL classroom, which resembles its physical world counterpart and replicate carbon-based activities. With this sort of scenario, educators who consider adopting VWs in their teaching usually stem from "default" teaching strategies. Therefore, it appeared over time that educators relied upon their prior experiences in the physical classroom. Although a variety of teaching practices were employed in SL, a pedagogical approach is commonly found in the physical classroom and ends up as a duplication of traditional teaching paradigms. In general, my personal opinion, based on my research and my teaching experiences, is that the most compelling aspects of VWs are those which are either not possible or too expensive and difficult to invest in the physical world. The interesting teaching experiences I have had were the ones whose key focus was on features that highlight the capacity of SL to conduct what is impossible in the physical world. We are now witnessing more realistic experiences of VR by highlighting these with the help of AR such as Google Glass[6] or High Fidelity[7], and Oculus Rift[8] to add "more degrees of freedom" (Rosedale 2014) without relying on the set of keyboard and mouse. This said, I personally believe that VWs have huge potential for educators, offering a big upside as a place of wonder and discovery.

6.11 Publications

The study has generated several presentations and publications. These are:

Conference Presentations

Ata, R. (2014). Theme of Creativity within Immersive Teaching Experience -Virtual Worlds Best Practice in Education Conference [Online], 9-12 April 2014, VWBPE14.

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[6] Google Glass, which was developed by Google, is a wearable display that provides strong feelings of immersive VR.

[7] High Fidelity is a private company based in San Francisco founded in 2013 by SL founder and former CEO Philip Rosedale. The company aims to create a next iteration or generation of virtual world, to enable even richer avatar interactions by using body-tracking sensors for more life-like avatars.

[8] Oculus Rift is a headset that has the ability of head-tracking and allows users to immerse fully within VR.

Ata, R. (2012b). A mix of the real (physical) world & virtual worlds: Case study with orchestrating teaching in blended situations. Poster Presentation at Challenging The Binaries, Centre for the Study of Literacies International Conference, Sheffield, UK, 29th-30th June 2012.

Webber, S. **& Ata, R. (2012).** Teaching and Learning in Second Life as Part of a Blended Approach: Reflections and Lessons learned -Virtual Worlds Best Practice in Education Conference [Online], 15-17 March 2014, VWBPE12, Abstract available at: http://ejournal.urockcliffe.com/index.php/JOVS/article/viewFile/25/4

Conference Proceedings

Ata, R & Orhan, S. **(2013)** An Implementation of Virtual Worlds Platform for Educators in Second Life, Procedia - Social and Behavioral Sciences, Volume 83, 4 July 2013, Pages 1027-1031, ISBN: 1877-0428.

Publications

Ata, R. (2013) Experiential Teaching and Learning as part of a Blended Approach: Classrooms, Blackboard and Second Life Practices, In: Jerry, P., Tavares-Jones, N. and Gregory, S. (eds.) Riding the Hype Cycle: The Resurgence of Virtual Worlds [Online]. Available from: ISBN: 978-1-84888-234-8.

Ata, R. (2012) Virtual Ethnography for Virtual Worlds, In: Marques da Silva, S. and Landri, P. (eds.) Rethinking Educational Ethnography: Researching Online Communities and Interactions [Online]. Available from: ISBN: 978-989-8471-04 -8.

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Zemsky, R. & Massy, W.F., 2004. *Thwarted Innovation: What Happened to e-learning and why*, A Learning Alliance Report, Available at: http://www.csudh.edu/dearhabermas/WeatherStation_Report.pdf

APPENDICES

Appendix 1: Participant Information Sheet

Teaching in and from Second Life (SL) in the Higher Education (HE) Context
You are being invited to take part in a doctoral research project. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Take time to decide whether or not you wish to take part. Thank you for reading this.

Purpose of the project
The primary aim of this study is to develop a deeper understanding of Second Life (SL) and investigate its impact on teaching processes in Higher Education. I will be examining whether teachers find SL useful to enhance their teaching pedagogy/strategy/approach. This project has the following aims and objectives:

- To reveal how teachers implement teaching into SL/f2f learning situations
- To examine how teachers re/define classroom pedagogy/strategy in SL
- To determine which roles tutors undertake within SL when they are involved in blended learning.
- To disclose how teachers overcome challenges such as learners' resistance to the virtual environment.

Why you have been chosen
You have been chosen as you are already engaged in a Higher Education Institution and involved in an educational space in SL. I would like to work with people who are actively using SL or have a degree of familiarity and experience with SL.

Participation
It is up to you to decide whether or not to take part. If you do decide to take part, you will be asked to give your consent either by exchanging a notecard with me during the interview in SL or by signing it in the university setting, if face-to-face interview happens. You can still withdraw from the research at any point without giving any reasons.

What will happen to you if you take part
I will contact you to arrange an interview. For SL interview, it will be held within SL, at a place to be mutually agreed. The interview is likely to last about an hour. It will be undertaken in text chat and I will take a chatlog of the discussion (including both chat and Instant Messages exchanged between me and you) for analysis. For face-to-face interviews, the interview will be held in the university setting. In the interviews, you will be asked how you use SL for any educational purpose, how you implement your virtual teaching experience into classroom environment, which strategies you use to develop knowledge through the environment etc. I will then analyse the chat transcripts (chatlogs). All the interview data will be anonymised, including your SL name, in the study. I may request permission to take a photograph of us both (as avatars) in SL in order to demonstrate the interview process. Yet, if you think this could make you identifiable and feel uncomfortable with me using your photograph at any time, I will delete this from my records.

The possible disadvantages and risks of taking part
As this research involves conducting interviews, you may feel slightly inconvenienced due to the possible interruption of your activities in SL. However, I will seek to arrange convenient time for interviews with you.

The possible benefits of taking part
I hope that this research will bring a better understanding of how SL is implemented in teaching approaches within blended learning and you will contribute this study with your participation. You will benefit from involvement in the project by giving you feedback on my research findings.

If something goes wrong
If any technical problems (e.g. SL outages, poor internet connection) occur, I hope you will be willing to reschedule the interview yet it is up to you whether you wish to participate again. In another cases or if you have any concerns or complaints, please contact my supervisors (Julia Davies, j.a.davies@sheffield.ac.uk , Sheila Webber, s.webber@sheffield.ac.uk) or me (Ridvan Ata, r.ata@sheffield.ac.uk). You may also wish to contact head of the department (Jackie Marsh, j.a.marsh@sheffield.ac.uk)

Confidentiality
Once interview data has been gathered, its confidentiality will be maintained by ensuring that only my supervisors and I will have access to the data. You will not be able to be identified in the study. The chatlogs will be kept on my encrypted laptop and will be destroyed/ deleted when the study finishes.

The results of the research project
It will be used in the thesis to reveal information about teaching within SL. I may write papers for academic journals using this data, or present the data at academic conferences. All previously agreed anonymisation will be adhered to.

Organiser and fund provider for the research
There is no external funding for this research yet this study is supported by the Republic of Turkey Ministry of National Education for me to pursue a doctoral degree.

Ethical Approval Reviewer
This project has been ethnical approved via the School of Education ethics review procedure. The University of Sheffield Research Ethics Committee monitors the application and delivery of the University's Ethics Review Procedure across the University.

Contact for further information
Ridvan Ata, The University of Sheffield, The School of Education, 388, Glossop Road, Sheffield S10 2JA
Email: R.Ata@sheffield .ac.uk

Thank you for your cooperation!

Appendix 2: Participant Consent Form

Consent Form

Teaching in and from Second Life

Please read the statement below and complete the required information.

Statement of consent

I, the undersigned, consent to participate in the study on 'Teaching in and from Second Life' as outlined in the project summary provided. I consent to the (anonymous) use of my words and my images being used within a PhD thesis and academic papers. I understand that this will be used for academic and research purposes only. The data collected from me and my personal details will not be made available to third parties.

Participant's details

Avatar name:
Signature:
Date:
Attached: Participant Information Sheet

Please complete and return the form by email to: R.Ata@sheffield.ac.uk

Please note that this information can be provided using IM/notecards in Second Life.

Thank you for agreeing to participate in my research.

Appendix 3: Ethic Review Approval Letter

The University Of Sheffield.

The
School
Of Education.

Ridvan Ata

Head of School
Professor Jackie Marsh

Department of Educational Studies
388 Glossop Road Sheffield S102 JA

Telephone: +44 (0114) 222 8096
Fax: +44 (0114) 222 8105
Email: jacquie.gillott@sheffield.ac.uk

5 August 2011

Dear Ridvan

Ethical Review Application: 'Teaching in and From Virtual Worlds in Online and Face-to-Face Situations in Higher Education'

Thank you for your application for ethical review for the above project. The reviewers have now considered this and have agreed that you can go ahead with your research project. Any conditions will be shown on the Reviewers Comments attached.

Yours sincerely

PP

Jacquie Gillott
PhD Secretary

Appendix 4: Sample Coding
A- Sample Data-Elicitation Interview

B- Sample Transcript with Initial Codes

A - Sample Image with picture boards

Activity Snapshots

- Students are into different segments on the opinionator
- The opinionator is on the ground
- Students appear to work on their mini islands
- Image suggests students able to upload slideviews
- Humanoid, vehicle and animal shaped avatars in the interview

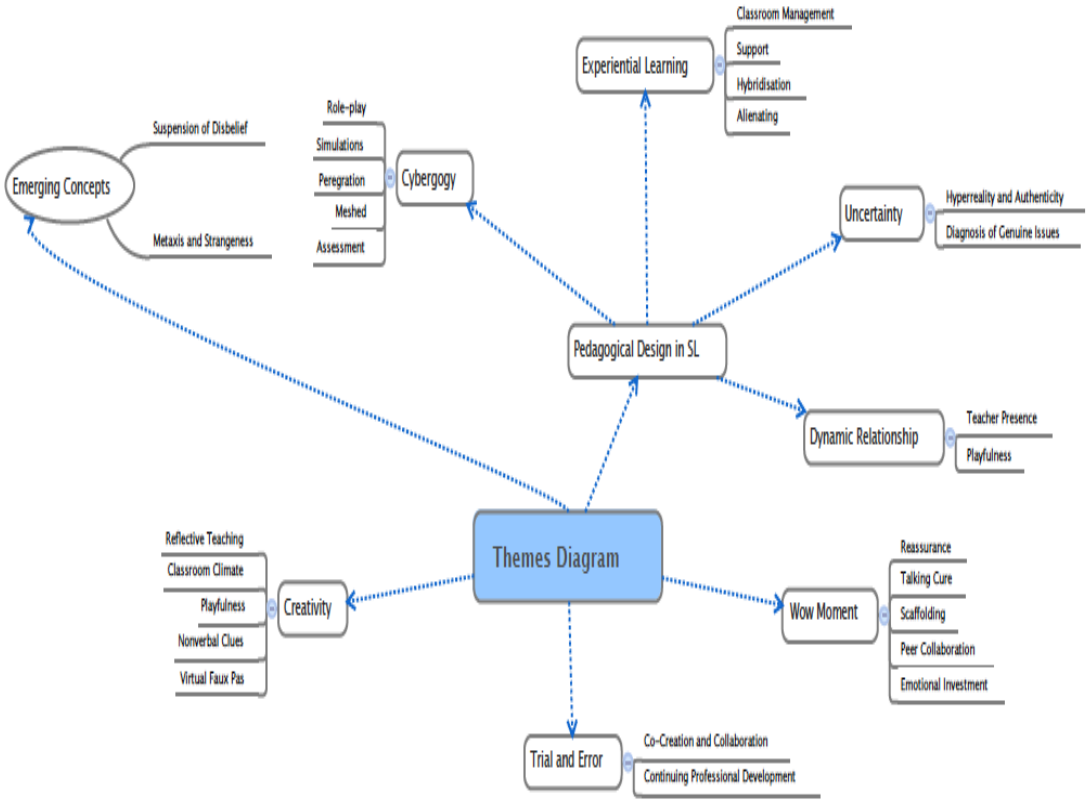
B - Sample Transcript with Initial Codes

Ridvan Atolia: we can see on the picture board
Sheila Yoshikawa: I'm just coming in on the photo
Sheila Yoshikawa: we could have had the opinionator in the air surrounded by nothing of course
Sheila Yoshikawa: that might have focused them [students] more
Sheila Yoshikawa: but I wanted to get a "physical" connection with where they would be working on the home islands I think?
Pancha: lol
Sheila Yoshikawa: also - it seems a bit dull
Sheila Yoshikawa: finding the balance between dull and distracting
Pancha: I think having it near their building places was a good idea
Sheila Yoshikawa: I suppose one thing is that I hope they will get through the hello sky hello sheep phase by week 4

Open Coding of Data Sample

we could have had the opinionator in the air surrounded by nothing of course	"we" refers to "collegiality"? , hyperreality , immersion, imagination, creativity,
that might have focused them [students] more	Reflection, activity-focused
but I wanted to get a "physical" connection with where they would be working on the home islands I think?	Authenticity, familiarity, adjustment, , link, sense of belonging to space?
also - it seems a bit dull	Reflection, perception
finding the balance between dull and distracting	Uncertainty, unfamiliarity, disquiet, strangeness
I think having it near their building places was a good idea	Personal view, authenticity, attractiveness,
I suppose one thing is that I hope	Expectation, aim,
They will get through the hello sky hello sheep phase by week 4	Achievement, everything is new to students, steep learning curve

Appendix 5: Themes Diagram



Appendix 6: Module Outline

Module Aims:
The module aims to progress students' information literacy in key areas, and develop their understanding of information literacy theories and practice.
Learning Objectives:
By the end of the module students will have learnt:

- to analyse their own information behaviour and start to identify ways in which they can become more information literate
- to understand some key information literacy models and theories
- to plan a strategy for seeking information and search for information in specific information sources
- to apply an evaluation framework to information resources
- to interact with others to explore their information behaviour and needs
- to communicate more effectively orally and in writing

Learning Methods:
Students will learn through a combination of lectures, practical exercises, tutorials and inquiry. The class website at is on
MOLE2 (class name: Inf104: Information Literacy). Students will also work in the virtual world, Second Life.

Assessment:
Assessment is 100% through coursework. The coursework is designed to give students practice in the skills they aim to acquire, and to encourage them to reflect on what they have learnt, including more theoretical aspects. There is one a test assignment handed in at the start of week 5 (marked as if it were a normal assignment, to give you feedback, but does not count towards the class mark). The first assignment (report) is submitted at the end of the semester (50% of the class mark: word count 2000) and a second assignment (an e-portfolio) is submitted immediately after the Christmas break

(50% of the class mark:, word count 1500 for the main report: a proportion of the credit is given for the evidence presented in the portfolio). Students must pass both assignments (report and e-portfolio) in order to pass the module as a whole.

Test assignment (does not count towards final mark): due: 2pm Monday 45th October. Submission method: electronic submission via Turnitin (no paper copy needed).

> **Assignment 1:** due: Monday 19th December 2pm (return by January 9th). Submission method: electronic submission via Turnitin (no paper copy needed)
> **Assignment 2:** due: Monday, 16th January 2012, 2pm (return by February 6th). Submission method: MOLE e-portfolio (no paper copy needed)

Note that submissions differing from the specified word length by more than 5% will be penalised as detailed at http://www.shef.ac.uk/is/current/length.html
There are also penalties for late submission, as outlined at
http://www.shef.ac.uk/is/current/latesub.html

Syllabus Content

	Lectures	Practical	Deadlines & tutorials
Week 1 26 Sept	Introduction to the class: outline of class and mode of working	Information literacy exercise	Sign up for a Second Life avatar and email the name to s….@sheffield.ac.uk
Week 2 3 October	Identifying, scoping, evaluating	Identifying, scoping, evaluating	Introduction to SL tutorial (to be arranged)
Week 3 10 October	Gathering	Parallel activities (1) Information literacy problem (2) Second Life activity	Support tutorials
Week 4 17 October	Exploring the meaning of information and introducing information behaviour	Parallel activities (1) Information Literacy problem and (2) Second Life information behaviour activity	Support tutorials
Week 5 24 October	Finalising presentation/ exhibits in Second Life		Test assignment due 2pm Mon. October 24th. Submitted via Turnitin
Week 6 31 October	Identifying: Interviewing techniques	Interviewing in Second Life activity (parallel sessions)	
Week 7 7 Nov	Research process and (Managing) ethics	Experiences and models of information literacy	You carry out interviews in Second Life
Week 8 14 Nov	Theory and research: Information behaviour	Information behaviour exercises	Test assignment returned in tutorials
Week 9 21 Nov	Experiences and models of information literacy	Information literacy exercises	
Week 10 28 November	Theory and research 2: Information behaviour	Information literacy & Information behaviour research workshop	
Week 11 5 December	Information behaviour workshop and e-portfolio		
Week 12 12 December	No lecture.	No practical	
			Assignment 1: Mon 19 Dec. 2011, 2pm ; Assignment 2 Mon 16 Jan. 2012 at 2pm

Readings (all checked 25 September 2011)

Cheuk, B. (2008) "Delivering business value through information literacy in the workplace." Libri, 58 (3), 137-143. http://www.librijournal.org/pdf/2008-3pp137-143.pdf

Johnston, B. and Webber, S. (2006) "As we may think: Information Literacy as a discipline for the information age" Research strategies, 20 (3), 108-121.

Lloyd, A. (2005) "Information literacy: different contexts, different concepts, different truths?" Journal of Librarianship and Information Science, 37 (2), 82-88

Society of College, National and University Libraries. (2011) The SCONUL Seven Pillars of Information Literacy: core model for Higher Education. London: SCONUL. http://www.sconul.ac.uk/groups/information_literacy/publications/coremodel.pdf

Webber, S. Boon, S. and Johnston, B. (2005) "A comparison of UK academics' conceptions of information literacy in two disciplines: English and Marketing." Library and Information Research, 30 (93), 4-15. http://www.cilipjournals.org.uk/ojs/index.php/lir/article/view/73

Information

If you become interested in exploring the debate about how "information" can be defined, these are three important writers: Bates, M.J. (2005). "Information and knowledge: an evolutionary framework for information science" Information

Research, 10 (4). http://InformationR.net/ir/10-4/paper239.html

Buckland, M. (1991) "Information as thing." Journal of the American Society of Information Science, 42 (5), 351-360. Preprint available
http://people.ischool.berkeley.edu/~buckland/thing.html

Capurro, Rafael and Hjørland, Birger (2003) "The concept of information ." Annual Review of Information Science and
Technology, 37(Chapter 8), 343-411. There is a draft version at
http://hdl.handle.net/10150/105705

Information searching and sources

Blakeman, K. (2011) RBA Information Services.[Online] Caversham: RBA. http://www.rba.co.uk/ (She has tips on searching etc.)

Bradley, P. (2011) Phil Bradley home page. [online] http://www.philb.com/ (He has information on search engines etc.) Brem, S., K. & Boyes, A.J. (2000). "Using critical thinking to conduct effective searches of online resources." Practical
Assessment, Research & Evaluation [online], 7 (7). http://pareonline.net/getvn.asp?v=7&n=7

Pancharo (2011) Virtual Training Suite. [online] Bristol: University of Bristol. http://www.vtstutorials.co.uk/ (This page leads to online guides to searching in various specific topic areas e.g. philosophy, sociology, business and to the Internet Detective)

Information evaluation Intute. (2007) Intute health and life sciences evaluation guidelines. [online] Bristol: Intute. http://www.intute.ac.uk/healthandlifesciences/IntuteHLS_Evaluation_Guidelines.doc (Detailed guidelines for evaluating health information sources)

Research Information Network. (2010) Peer review: a guide for researchers. London: Research Information
Network.[online] http://www.rin.ac.uk/our-work/communicating-and-disseminating-research/peer-review-guide-researchers

Mindmapping

Buzan,T. (1995) The mind map book. Rev. ed. London: BBC Books.

Buzan, T. (2000) Use your head. Rev. ed. London: BBC Books. Buzan was the inventor of this term. Tony Buzan's website at http://www.thinkbuzan.com/uk is mostly focused on selling Tony Buzan products, but there are numerous examples of how mindmaps have been used e.g. by students.

Cave, C. (2007) Creativity Web [online]. Sydney: Charles Cave. http://members.optusnet.com.au/charles57/Creative/Mindmap/index.html

Interviewing techniques and the reference interview

Owen, Tim (2006) Success at the enquiry desk. 5th ed. London: Facet.

Trochim, W.M.K. (2006) Interviews. In: Trochim, W.M.K. The Research Methods Knowledge Base [Online]. Ithaca: Cornell University. http://www.socialresearchmethods.net/kb/intrview.htm

Information behaviour and use

Erdelez, S. (1999) “Information encountering: it's more than just bumping into information.” Bulletin of the American

Association for Information Science [Online], 25 (3), 25-29. http://www.asis.org/Bulletin/Feb-99/erdelez.html

Ellis, D and Haugan, M. (1997) “Modelling the information seeking patterns of engineers and research scientists in an industrial environment.” Journal of documentation, 53 (4), 384-403.

Mansourian, Y., Ford, N., Webber, S. and Madden, A. (2008) "An integrative model of 'information visibility' and 'information seeking' on the web." Program, 42 (4), 402-417

Wilson, T.D. (2000) "Human information behaviour." Informing science [online], 3 (2). http://inform.nu/Articles/Vol3/v3n2p49-56.pdf (This is a concise overview of the area. Wilson traces the history of research in the area, describes some models, and puts forward one his own.)

Test Review 2010-2011

Due by 2pm Monday 24th October (week 5) Wordcount: 600 words.
Submission method: electronic submission via Turnitin (no paper copy needed)

This does not count towards your final mark, but it will be marked as though it were, using the usual Departmental form. Doing this test review will gives you feedback on how you are doing, and gives you an idea of how we mark work in this Department.

Aims:

To develop your written communication skills.
To develop your ability to evaluate information resources.
To help you understand the Department’s standards and practice in marking work.

Description:

A review of a website, article or book that has helped you with some aspect of information literacy. It can be about information literacy as a whole, or some specific aspect of information literacy. If you are not sure whether the item you have selected

is about information literacy, ask SW. You must explain clearly what the scope of the website, article or book is, and exactly why you think it is good, explaining its strengths and weaknesses. You can write in the first person, but your review should be well structured, with correct spelling and grammar. You should give the full reference for the item you are reviewing, following the Departmental guidelines as outlined in the Student Handbook, at the start of the review.
You should assume that your audience knows something about information literacy (so you do not have to explain what it is).

Assignment 1: Results of a research interview carried out in Second Life 50% of module mark
Word count: 2000 words excluding title, references and appendices
Due: 2pm Monday 19th December 2011
Submission method: electronic submission via Turnitin (no paper copy needed)
In this report you will report on a research interview carried out in Second Life, and analyse transcripts of interviews in SL, including your own. There is not a strict word count for each section, but we expect the second section to be longer than the first.

1. Assess the success of the interviews that you are analysing, in particular your own interview:
    a. When/where/how did you carry out your interview? (very brief summary – you can assume that the marker knows about the origins of the second interview transcript)
    b. What went well, and less well, in your own interview? What might you do differently next time? In particular focus on your performance as interviewer.
    c. Did the approach of the other interviewer differ from your approach? How do they compare (as far as you can judge from the transcript)
2. What were the main results, as regards information behaviour, that emerged from the interviews?
    a. How do the results compare with the theories and models that you have learnt about?
    b. Are there differences and/ or similarities between the interviewees?
    c. What are your conclusions?

You must include, as an Appendix, the anonymised transcript of the interview you carried out.
You must refer to the information behaviour/ information literacy research literature for the second section (analysis): remember to cite articles and all other material correctly and include all items in the reference list.

Report 2: Structured reflective report on development of information literacy 50% of module mark
Word count: 1500 words for the main report (excluding title, references and other evidence) 25% of the marks for this assignment is for the presentation and quality of the accompanying evidence.
Format: MOLE e-portfolio
Due: 2pm 16th January 2012
Submission method: electronic submission via MOLE e-portfolio (no paper copied needed)

Aims:

To demonstrate your understanding of information literacy, information and information behaviour

To reflect on your progress as an information literate person

Important: The cutoff point for adding and changing material is as stated above, and any material added or amended after that will be ignored

A report in which you take the SCONUL Seven pillars of information literacy, briefly describe your understanding of each "pillar", discuss what your achievements are in that area, and where you hope to make improvement.
In each section, you will need to make it clear that you understand which aspects you are covering: this might form an introduction to each section. We will be looking at the examples you give within the report e.g. explanations of how you decided which sources (search engine, library etc.) to use for a particular information search. We will also look at the Evidence section to back up your account of what you think you have achieved. For example, you might say that you feel that you are good at considering the range of information available, to pick the best starting point for an information search. However, if your examples and evidence show you always try Google first (or only ever use Google), then that would seem to contradict your claim that you were aware of a wide range of sources.

Components
There are some aspects of your work that you must discuss, and these are highlighted below. You can also include discussion of other work carried out in the inf104 class and in any other classes you are taking this semester.

1. **Identify and Scope**

Discuss your ability to identify your own, and other people's information needs, and to identify which information resources might meet that need. Use an example of an information need you had to meet in Semester 1 (either for your academic work, in this or another module, or outside academic work).

2. **Plan and Gather**

Must include discussion of your own information behaviour in relation to the concepts and theories covered in the "information behaviour" sessions. Use one or more specific examples of searches you have undertaken for information.

3. **Evaluate**

Discuss your skills in comparing and evaluating information obtained from different sources

4. **Manage and Present**

This will include discussion of your awareness of legal and ethical issues, and your ability to communicate information in different ways.

5. Overall summary of your progress and conception of information literacy at this stage of your university career.
6. **References:** list of any books or articles you have cited in your report. The reference list is not included in the wordcount.
7. **Evidence (nb this is not a complete list):** you might include: screenshots showing how you searched a search engine, or if you have kept a detailed record of the path that you followed in a search; a copy of the presentation that your group presented; bibliographies or reference lists you have produced for assignments in other modules; links to presentations or documents you have created. The Evidence is not included in the wordcount

SW, September 2011

Appendix 7: Exhibition Activity

Aims: To create an exhibit that will be visited by (amongst others) students from a College, USA (on 26-27 October), and delegates to the virtual **Midnight to Noon** conference organised by Abo Akademi, Finland (on 27 October, see http://m2n4sl.library2pointoh.fi/) at which SW is presenting

To develop your skills in communicating and presenting

Organisation

Every team can have one person using SL throughout the session (**after** you have completed your PowerPoint). It doesn't have to be the same person all the time e.g. one person might upload the ppt into SL, another person might create a questionnaire in SL.

This leaves some spare computers for SL, for when people want to have more than one avatar working on things in SL

Other members of the team also go into the SL lab to help/advise the person

Ridvan can help you with moving objects and uploading jpegs

Pancha (in SL) will help you with altering the questionnaire tool, notecard and link boards.

Tasks

1. **Complete your PowerPoint.** You must get it approved by SS before going to the next stage.

2. **Upload your ppt into SL**. *SW will demonstrate key steps in this task*

    a. Decide who will do the upload. That is the person who needs to do the next steps in this section.
    b. Tell SW a) who it is and b) how many slides will be uploaded (as she will need to give the person some Linden dollars)
    c. Convert your PowerPoint into a folder of jpegs
        i. Select Save As, and then scroll down the options for saving until you find jpeg
        ii. Save all the slides as jpegs. This needs to be saved somewhere that you will be able to access when you are in SL
        iii. Locate the folder with the jpegs and check they are all there

    d. Login to SL.
    e. Get Linden dollars from SW so you can pay to upload the jpegs
    f. Upload the jpegs.
        i. Select Build (top tab) and Upload Bulk
        ii. You are prompted to select the jpegs. Select all the jpegs Click ok if you are asked any questions about uploading them. They should appear in the Textures folder in "My inventory"
    g. Rez a presenter and put the slide textures (jpegs) into them. For this get instructions from Ridvan or Pancha, or refer to the notecard that is in SL

3. **Prepare some brief information about your presentation, to put into a notecard in SL**
    a. It should include: A title (the title you have given your PowerPoint); your names (Second Life, or Real Life, or both, it is up to you); the date; a few sentences describing what is in your presentation; any other information you want to give about yourselves. Remember to spell check it.
    b. Once you have the text prepared, someone should go into Second Life, create a notecard with the text and put the notecard in a notecard-giving poster. There are instructions about this in SL, and Pancha can help you.
4. **Prepare questions to put into a multiple choice quiz ball in SL.**
    a. The aims are
        i. to get some feedback on your presentation
        ii. to collect some data from visitors relevant to your information problem
    b. "Multiple choice" means you have to specify all the possible answers
    c. Make no more than 5 questions per quiz ball. Each question should have no more than 4 options
    d. Make at least 2 questions asking people's opinions about your presentation. You could have one quiz ball covering presentation feedback AND asking questions relevant to your info problem, or you could make 2 quiz balls
    e. There is an example quiz ball in SL. Look at that to see an example of how the quiz will be presented
    f. When you set it up, you specify that the answers will be sent to an email address. Decide whose email address it will be.
    g. A couple of examples of questions+options:
        i. When you search Google, how many hits do you look at? First few | 1st page | 1st 2 pages |More than 2 pages [example of a question relevant to one of the information problems]
        ii. How much did you learn from this exhibit? Nothing | One or two things | Several things | A great deal [example of a question giving feedback on the presentation]
5. **What else do you want people to know about or do?** Further options include:
    a. Linking to or displaying web pages (consult Pancha about this)
    b. isplaying a particularly important slide or some other text or picture (e.g. a picture of yourselves in SL) on a separate poster
    c. Using a voting board (ask Pancha about this)
    d. Any other items that you can find that you think are relevant to what you decided/ discovered in your search
6. **Make the exhibit easy to find on your island**

Appendix 8: Interview Activity

Aims of the session:

- To improve skills in interviewing
- To put guidelines on interviewing (see this week's handout) into practice
- To enable you to carry out the interviews in Second Life that you will need to undertake in order to complete your final assignment.

There are two stages, one face to face, one in Second Life.

Stage 1: Interviewing face to face

You will be in groups of three or four. In each group there will be an **Interviewer**, an **Interviewee** and one or two **Observers**.

1. The interviewer interviews the interviewee using the attached questions. The goal is to discover more about the interviewee's information behaviour in relation to a specific information need.
2. The interviewer will need to take notes on what was said, as we are not recording the interviews.
3. The observer(s) are there to provide feedback to the interviewer on what went well and what went less well. They should take notes on how the interview progresses (there is no need to take notes on what the interviewee said)
4. When the interview is over, each person should reflect on how the interview went. There is a form attached with questions to comment on.
    a. Firstly, the interviewer says what he/she thinks went well and what could be improved
    b. Secondly, the interviewee says what he/she thinks went well and what could be improved
    c. Thirdly, the observers give their feedback. If there are two observers, one should concentrate on the questions about the interview content, and the other on the interview process.

Stage 2: Interviewing in Second Life

You will be in groups of three. In each group there will be an **Interviewer** (a student), an **Interviewee** (a student) and an **Observer (**a tutor).

1. You will be told who your tutor is and where to go for your interview (to ensure that different interview groups are out of "hearing" of each other)
2. The interviewer interviews the interviewee using the attached questions. The goal is to discover more about the interviewee's information behaviour in relation to a specific information need.
3. The observer is there to provide feedback to the interviewer on what went well and what went less well. He/she should take notes on how the interview progresses (there is no need to take notes on what the interviewee said)
4. When the interview is over, each person should reflect on how the interview went. There is a form attached with questions to comment on. You should give this feedback within Second Life, to practice your chat skills further.
    a. Firstly, the interviewer says what he/she thinks went well and what could be improved
    b. Secondly, the interviewee says what he/she thinks went well and what could be improved
    c. Thirdly, the observer gives his/her feedback (on all the listed questions)
5. The Observer will give a copy of the chat transcript (log) to SW (either send it via email to s…….@s……..ac.uk or paste it into a notecard and drop it into SY's profile).

Interview schedule - for practice interviewing 2011

This has some of the questions that you will use in the real interview.

In the real interview you will have to spend more time at the start making sure that they have the background information on the interview and requesting their informed consent to the interview.

Explain that the purpose of the interview is to investigate the interviewee's information behaviour.

Ask the interviewee to talk about a particular time when he/she needed information for his/her studies – e.g. for an assignment, homework at school, a class activity.

You want them to talk about **a specific time**, not to talk generally about how they find information. This may mean that there are quite short answers to some questions, but that is OK.

Take notes on the interview in the face to face practice. You will not need to do that for the SL exercise as you can scroll back through the chat to see what was said.

Question 1.
Think about a time, recently, when you needed information for your studies

1a. Firstly, please tell me about what the information need was

1b. When did you need this information? Why did you need it?

Question 2
2a Did you have a starting point for trying to find the information? (e.g. a search engine, a reading list, a website, a book, a person (tutor, friend))

If Yes - go to 2b
If NO - go to question 3

2b What was the starting point?
Follow up question: How did you decide on the starting point?

2c Did this starting point give you the information you expected and wanted?

3a Did you ever browse around for information (Examples are looking round a website that you think might have useful information, browsing through shelves of books at a bookshop or library, examining sets of posters in SL to find ones which are useful) If yes go to 3b If NO go to question 4
3b What were you browsing
3c Did it give you any useful information?

Question 4 **4a Are there ways in which you think you demonstrated information literacy in meeting this information need?** If no – go to 4b If yes – in what ways did you demonstrate it?
4b Do you think you could have done more to be information literate in answering this information need? If no – interview finishes If yes – what could you have done to be more information literate?

Feedback from interviews

1. Points for interviewers to consider

What aspects of the interview were most successful?
Do you think you got all the information you needed to write a short report on the interviewee's information behaviour?
What do you think could have been improved in your interviewing technique - and can you suggest how you could have improved the interview?

2. Points for interviewees to consider

What aspects of the interview were most successful?
Do you think that the interviewer missed any opportunities to get useful information out of you?
What do you think could have been improved in his/her interviewing technique?

3. Points for observers to comment on

3a Content

Did the interviewer find out what the interviewee's information need was?
Do you think the interviewer found out all they could about the interviewee's information behaviour, or did he/she miss the opportunity to find out more?

3bProcess

Did the interviewer pose each question clearly?
Did the interviewer leave enough time for the interviewee to answer each question?
Did the interviewer use any probes or follow up questions, to get extra information?
Were there any points where is would have been useful for the interviewer to check back with the interviewee as to what he/she meant in a reply? If so, when?
Did the interviewer summarise what was said at any point? If so, did it seem a good summary?
Was the end of the interview well-handled or did it just tail off?
Overall, what do you think went best about the interview?
Overall, what do you think most needed improvement?