Virtual Worlds in UK Higher Education: Students' Perspectives

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Abstract

The use of 3D virtual world software within higher education has increased significantly between 2008 and 2012. Educational research has largely speculated on the utility of virtual worlds in higher education, only latterly presenting data on their implementation in disciplinary curricula. Within this data there has been inadequate focus on students' experiences of and perspectives on virtual worlds in higher education. This thesis explores students' perspectives on the use of virtual worlds and emerges as part of a Leverhulme Trust-funded project on the socio-political impact of virtual worlds in UK higher education. Framed by a social constructionist worldview and grounded theory methodology, qualitative data was collected from four UK universities between 2009 and 2010. A total of 20 semi-structured interviews, two focus groups, and 26 hours of observation informed the analysis of students' perspectives.

Students' perspectives were contextualised within existing networks of meaning and their engagements with the virtual world were interpreted through these networks of meaning. Approaches to action within the virtual world, such as communication and spatial practice, were linked to expectations and norms of action derived from other situations (such as physical classrooms or digital games). Similarly, pre-existing skills underpinned students' reflections on both learning to use the virtual world and using the virtual world in learning. Students also drew extensively on extant discourses they perceived as salient to their engagement, such as discipline, education, and digital games, in framing and articulating their perspectives. Consequent from their positioning of the virtual world within (often) idiosyncratic interpretations of discourses, students' perspectives were complex and heterogeneous. Future research and practice within this field therefore needs to concern itself less with the pedagogic and technical capabilities of the virtual world, and more with the varied and consequential interpretations made by students.

1. Introduction

This thesis concerns use of virtual worlds in an educational setting. Virtual worlds are a computer technology facilitated by high-speed internet connections that allow production of a persistent, graphical environment in which multiple human users can act simultaneously through the use of avatars. Particularly during 2008 – 2011, virtual worlds were of significant interest to educators within the HE sector and an increasing number of UK students were experiencing taught modules that included a virtual world such as Second Life. Although much has been written about virtual world use generally, comparatively little attention has been paid to students' perspectives and the influences that inform these perspectives. As such, in the analyses and arguments forthcoming I intend to address the following research question:

> What are students' perspectives on the use of virtual worlds in UK Higher Education (HE)?

The methodological approach I have adopted is situated broadly within a social constructionist stance and draws significant influence from modern Grounded Theory. The analysis is based on qualitative data collected in 2009 – 2010 with student participants at four UK universities.

The genesis of this thesis is within the Coventry University Research into Learning in Immersive Educational Worlds (CURLIEW) project, funded by the Leverhulme Trust in 2008. The overarching goal of the CURLIEW project has been to explore the socio-political impact of virtual worlds on UK HE through three research foci: learner identity, pedagogy and policy, and students' experiences. The research described in this thesis constitutes the primary effort to fulfil the third research strand: students' experiences. I became involved as a doctoral student in the CURLIEW project through my interest in virtual worlds. Prior to this project, I had recently completed a master's degree dissertation on digital identity in Massively Multiplayer Online Games (MMOGs), another type

of virtual world. Similarly, whilst completing my master's degree I was introduced to the educational application of Second Life through several seminars of the Centre for Learning and Quality Enhancement at Teesside University. As such, I entered the project with a basic knowledge of Second Life, education, and a slightly more sophisticated appreciation of virtual worlds generally. I have never been an educationalist per se; my background is in psychology, sociology, and - to a limited extent – philosophy. I have grown into the discipline through my doctoral studies, but my focus resides explicitly on the experience and perspective of the individual, rather than the structures and concerns of UK HE.

1.1. Contribution

The CURLIEW project has aimed to provide a critical and reflective examination of the role virtual world technology has played (and may continue to play) in UK education. Unlike the majority of research published on educational uses of virtual worlds, the CURLIEW project – including my research strand – has no explicit pedagogic or content design element. That is to say, we have not attempted to produce pedagogic toolkits or guidelines within this project: it has been an exercise in taking stock, understanding, and suggesting theorised ways forward. The CURLIEW project is currently the only, multi-site, data-driven, UK-centric examination of virtual worlds in HE that has not evaluated content or pedagogy created as part of the project. Moreover, with the exception of a very few recent papers that have provided reflections on virtual world projects (e.g. Herold, 2012), the CURLIEW project provides the only substantive engagement with this reflective and analytical task.

I offer these claims not to market the project or in hope of elevating its importance, but rather to offer a sense of what position in the research field the CURLIEW project and my thesis have looked to occupy. Our contribution as a research group has been to examine the significance of philosophic, experiential, pedagogic, and political elements involved in the educational use

of virtual worlds through a data-driven, multi-sited approach. More specifically, the key contributions of my thesis are constituted by three interrelated aims:

1. To provide the first multi-site analysis of UK students' perspectives on the educational use of virtual worlds that is not simultaneously (and primarily) a pedagogic evaluation
2. To offer a conceptual examination of students' experiences and perspectives as a primary focus
3. To contribute to the emerging impetus towards critical research on the educational use of virtual worlds that examines the reality of use for - and perspectives of - those involved in the educational use of virtual worlds

1.2. Audience

Although this is not a thesis overtly focused on pedagogy, it is a thesis for educationalists. The analysis I will offer in forthcoming sections may offer insights to be drawn upon as foundational information for designing effective pedagogy; particularly as such analyses have been scarce in the research literature to date. I believe that designing effective teaching is very difficult without an understanding of in-situ educational experience, and this lends a pedagogic value to examinations of students' perspectives. Such understandings can be based on assumptions about students and their perspectives, or can be grounded in research data; the latter, I contend, is more useful.

As I have emphasised above, this thesis is foremost concerned with students and the constitution of their perspectives. My analysis is not designed to evaluate pedagogy and/or technology and, importantly, is not attempting to prove a case in favour or against virtual world use. I believe there is value in understanding experiences in situ and of performing a deeper analysis of perspectives than those most frequently represented in the research literature. This thesis should be of interest to those who wish to understand students'

perspectives in detail and are dissatisfied with the many loose ends left by the multitudinous small-scale survey research that populates the field (Gunn & Steel, 2012). Given that I have attempted to assume the relative 'neutrality' of neither pro- nor anti- virtual world, this thesis may also appeal to those who want to engage with the topic critically without being 'sold' a specific pedagogic approach or the technology itself.

Finally, this thesis may find an audience in those interested in the 'grand vision' of social science to chart and interpret social phenomena. Understanding students' perspectives on virtual world use has a sociological – or even anthropological – value in addition to its practical value for educationalists. Such an analysis has value to me, for instance, as a scholar with experience of virtual world technologies and a developing interest in educational technology. It may also be of interest to those concerned now or in the future with the modern history of educational change and the role of educational technologies. Within the study of virtual worlds at least, there has been little sophistication to the representation of students' experiences; I hope this thesis provides greater illumination on the perspectives of one of education's key stakeholders.

1.3. Thesis parameters

It is necessary and useful to clarify three important boundaries of this thesis. Firstly, as part of a funded project concerned with UK HE the scope of this thesis is necessarily also limited to UK HE. This is not to say published data from international sources has not been used to inform the research, but rather that collecting data from (for example) the USA or continental Europe was never considered as a methodological option. This thesis should thus be taken in context of being a product of UK scholarship concerned with UK HE. Whilst many of the observations and arguments made will resonate with other, international contexts, it should not be assumed that students' perspectives will be equivalent within other educational systems and situations. A useful product of UK-centric research is the relative similarity of educational policy and practice

for the participants involved in contrast to a multinational sample. Whilst this research is not comparative per se, an international investigation of students' perspectives would require far greater focus on the effects of differing educational (and social) cultures and policy to be credible.

In addition, this thesis relates solely to the use of virtual worlds in education in post-compulsory, HE environments: not to Secondary Education (SE) or Further Education (FE)[1]. Virtual world usage in these environments may be based on very different premises to HE– mandatory nature of schooling, vocational/non-vocational focus of content, pedagogic trends in the sector, social factors in the age of the participants, and so forth – and children particularly may have very different approaches to learning. Whilst I do not have the expertise in child development to comment with any authority on schooling, I broadly agree with Mezirow (1991) that education of adults, including HE, and child education are very different domains because of developmental differences and the practical and political imperatives briefly noted above. For analysis of virtual world use in SE see Ketelhut et al. (2010), and in FE see Twining (2009).

Furthermore, data related to digital games – including 'serious games' and simulations - are largely excluded from discussion. Notwithstanding very few instances – e.g. Delwiche (2006), Dickey (2011), Whitton (2009) – there has been little educational research focusing on the use of virtual world games. Rather, the majority of research on virtual world games has focused on content, activity, or learning within games (e.g. Gee, 2003 Steinkuehler, 2004; Yee, 2007; Oliver & Carr, 2009) and not the use of the technology within a formal educational setting. Additionally, there is a disturbing propensity for academics publishing in this field to draw parallels between gaming and the (educational) use of virtual worlds *a priori*: particularly through assertions that literacy in digital games implies literacy in educational applications of virtual worlds (e.g. Duffy &

[1] In the UK educational system, Further Education refers to the college system which may be utilised by students of any age, including school leavers, aged 16-17, post-secondary education and those returning to education (although usually in different institutions). In this thesis I do not analyse FE settings (with the exception of a brief reference in section 1.3), but instead focus on the university HE sector.

Penfold, 2010). I find, given the extensive literature challenging its validity (see chapter 2), this assumption is best avoided and thus digital games should be treated as another – and not the same – technology. Ultimately, however, the field of educational games is simply too expansive for a meaningful doctoral research project to simultaneously examine virtual worlds and digital games in education through a data-driven approach. The digital media commonly labelled as 'serious games' often differ dramatically to virtual worlds in both interaction style and pedagogic application (Aldrich, 2009). Although the thesis does return to the topic of digital games in chapters 6 and 7, this is in light of conceptual associations drawn between virtual worlds and digital games and not in examination of digital games as an educational technology per se. For a recent meta-analysis of research on games-based learning see Connolly, Boyle, MacArthur, Hainey & Boyle (2012), and for detailed examination of the relationship between digital games and learning see Gee (2003), Pelletier and Oliver (2006), and Pelletier (2009).

1.4. Thesis organisation

This thesis is divided into 6 further chapters (excluding the current introduction chapter). These chapters focus on:

2. **Context of virtual world use** – Outlines the use of virtual worlds in UK HE and details the state of research in areas of fundamental importance to understanding students' perspectives
3. **Thesis methodology** – Sets out the theoretical and practical basis upon which research was conducted, addressing five levels: worldview, methodology, research sites and participants, data collection, and data analysis.
4. **Action** – The first data chapter examines two common categories of action within the research findings: navigation of the virtual world and interaction between human users.

5. **Learning** – The second data chapter examines the ways in which students perceived the task of applying existing or developing new ways of acting in the virtual world.
6. **Discourse** – The third data chapter examines the role played by wider networks of meaning in shaping students' perspectives on - and experiences with - the virtual world
7. **Discussion** – The discussion chapter draws together the analyses made in the preceding data chapters and situates these arguments in relation to the research field and the thesis aims

In the following chapter – 'Context of virtual world use' - the research field is examined in detail. A brief chronology and analysis of virtual world use in HE is offered to situate the current research, followed by a discussion of fundamental issues that emerge from the published academic literature regarding students' perspectives. A critique of current research approaches and assumptions concludes the chapter. Initially, however, it is to the definition of a 'virtual world' that we must turn in order to better establish the identity of the technology with which this thesis is concerned.

2. Context of virtual world use

We now turn to the role played by virtual worlds within HE. A brief discussion of defining virtual worlds begins the exploration, followed by an examination of trends in research and pedagogy. The section moves on to discuss several key elements of current research that are pertinent to analysing students' perspectives, before turning latterly to concerns with the research field.

2.1. Defining 'virtual worlds'

In chapter 1 I offered a brief definition of 'virtual worlds' in order to outline the thesis topic. Yet the identity of virtual worlds is a contentious topic. At the most basic level, virtual worlds are a computer software and hardware configuration that gives rise to a digital environment. That digital environment is almost universally graphical (e.g. three dimensional, rendered graphics), simultaneously hosts multiple human users represented as an avatar or proxy, and facilitates some form of interaction with other users (e.g. typed utterances) and/or the software environment (e.g. content creation). Commonly recognised exemplars include Second Life, ActiveWorlds, There, and Open Simulator (de Freitas, 2008; Messinger et al., 2009). There is no consensus, however, on the attributes that characterise a technology as a virtual world. Nor consensus on what term should be used when referring to virtual worlds. Although most published papers discussing virtual worlds offer a brief definition of the technology, these definitions vary wildly and are frequently ambiguous or even contradictory. To offer an example, Second Life is referred to as the platform for a games-based learning intervention (Toro-Troconis, Meeran, Higham, Mellstrom, & Partridge, 2010) and as the subject of an article entitled 'This is not a game' (Bell, Robbins, & Withnail, 2010) within the same edited book (Peachey, Gillen, Livingstone, & Smith-Robbins, 2010). Similarly, disparate terms used for virtual worlds appear in the published literature and frequently authors discussing the same software both define and name it in differing ways.

Table 1 demonstrates some of the terms used in educational research on virtual worlds.

Acronym	Definition	Authors using term
MUVE	Multi User Virtual Environment	Perez-Garcia (2009); Ketelhut, Nelson, Clarke & Dede (2010); Heid and Kretschmer (2009)
IVW	Immersive Virtual World	Savin-Baden (2008, 2010a); Dittmer (2010); Middleton and Mather (2008);
3D IVW	Three Dimensional Immersive Virtual Worlds	Dalgarno et al. (2011)
VW	Virtual World	Bayne (2008a); Boellstorff (2010); Girvan and Savage (2010)
3D Virtual World	Three Dimensional Virtual World	Lee (2009)
MMVW	Massively Multiplayer Virtual World	Antonacci and Modaress (2005)
MMVW (user-created)	Massively Multiplayer Virtual World (user-created)	Antonacci and Modaress (2008)
3D Virtual environments	Three Dimensional Virtual Environments	Dalgarno and Lee (2010)
SVW	Serious Virtual World	Bellotti et al. (2010)
3D CVE	Three Dimensional Collaborative Virtual Environment	Prasolova-Førland (2008)
3D VLE	Three Dimensional Virtual Learning Environment	Livingstone, Kemp and Edgar (2008); Dalgarno and Lee (2010)
SVW	Social Virtual World	Bell, Robbins and Withnail (2010); Jin, Wen, and Gough (2010)

Table 1: Example terms used to describe virtual worlds (Mawer, 2011)

Elsewhere I have argued that trends in terminology are indicative of researchers' stance toward virtual worlds (Mawer, 2011). Terminology serves to position the virtual world theoretically by establishing which traits are most noteworthy: a virtual world that is 'social', 'collaborative', 'three-dimensional', 'serious' and so forth. Thus it can be indicative of researchers' stances toward the virtual world which term they choose to employ in their discussions. Three differing foci are evident in terms applied to virtual worlds in the published literature:

1. Terms that describe the 'user' experience (e.g. 'immersive': Middleton & Mather, 2008);

2. Terms that relate the capabilities of the technology (e.g. ‘multi-user’: Perez-Garcia, 2009);
3. Terms that relate to the purpose or ethos of the technology (e.g. ‘collaborative’: Prasolova-Førland, 2008).

In each case the implications of terms used are contestable. Are all experiences of virtual worlds ‘immersive’ (Middleton & Mather, 2008)? If a virtual world is not used for collaborative activity then can it still be considered a ‘collaborative virtual environment’ (Prasolova-Førland, 2008)? To what is a ‘serious’ virtual world (Bellotti et al., 2010) being contrasted and, following this, is a virtual world inherently ‘serious’ or does it become so when applied for ‘serious’ purpose (i.e. education)? Terms for virtual worlds are both contentious and conceptually important; decisions on terminology reflect assumptions about virtual worlds that may or may not be consistent with the research literature. The representation of virtual worlds to students through one or more of these terms also serves to position the technology pedagogically. Terms such as ‘learning environment’ or ‘serious’ appear largely designed to establish a legitimate educational space for an essentially hybrid technology that often spans multiple ‘serious’ and ‘social’ spheres. Research evidence should counsel caution when affixing such terms as ‘serious’ to virtual worlds. To take a brief example, Alrayes and Sutcliffe (2011) reported that on a UK business module using Second Life only 18% of students envisaged the virtual world as an appropriate platform for formal university lessons, whilst 82% suggested it might be used for casual discussion and interaction. The relative seriousness of a virtual world is not straightforward; it is unclear both what it means to be a ‘serious’ educational technology and which (and to whom) educational spaces are ‘serious’.

As may be evident from the plethora of terms for virtual worlds, the attributes that characterise technologies as virtual worlds are contentious. Several authors with well-established reputations as virtual world researchers (e.g. Castronova, 2005; Bell, 2008; Schroeder, 2008; Boellstorff, 2010) have offered definitions. These definitions are dissimilar insofar as they present differing characteristics

as the essential qualities of a virtual world. Castronova has argued that 'synthetic worlds', his term for virtual worlds such as Second Life, can be defined as:

> '…an expansive, world-like, large-group environment made by humans, for humans, and which is maintained, recorded, and rendered by a computer' (2005, p. 11).

Bell, alternatively, has suggested that virtual worlds are best defined as:

> 'A synchronous, persistent network of people, represented as avatars, facilitated by networked computers' (2008, p. 2).

In the same issue of the Journal of Virtual Worlds Research, Schroeder offers a further alternative:

> 'Virtual worlds are persistent virtual environments in which people experience others as being there with them - and where they can interact with them' (2008, p. 2)

Whilst human users are at the centre of each, subtle differences arise between the definitions. Castronova (2005) argued that virtual worlds are 'large group' spaces, implying that the simultaneous presence of multiple users and (at least implicitly) interaction between users are central features. Schroeder (2008) is overt in characterising virtual worlds as spaces for interaction, but additionally argues that users should feel 'present' with others in order for a technology to be a virtual world. Bell (2008) also focused on the centrality of human users, yet representation through avatars, rather than feeling present with others, is the ancillary element to his definition. Similarly, Bell (2008) argued that the 'network of people' should be persistent, presumably in terms of social structures (formal or informal), whereas in Castronova's definition the persistent element is the world itself; 'maintained, recorded, and rendered by a computer' (2005, p. 11).

Divergences are apparent in the ways particular authors conceptualise the same hardware-software configurations and, as a corollary, how they believe users will (or should) experience these technologies.

Numerous authors have offered further competing definitions. In her scoping study on virtual world use, de Freitas explained that 'a virtual or immersive world is an interactive environment often although not exclusively, in 3D or animated graphics… used by many users at the same time' (2008, p. 7). Boellstorff (2010) argued that whilst modern virtual worlds are often highly visual this need not be a precondition of virtual world definitions: soundscapes, haptic virtual worlds (incorporating touch sensation), and text-based worlds are examples that are not graphically intensive. Instead, Boellstorff offered a broad definition (reflective of his anthropological background) of virtual worlds as '...places of human culture realized by computer programmes through the internet' (2010, p. 126). Bittarello (2008) has suggested that digital virtual worlds are similar in many ways to the imagined (virtual) worlds of religion, art, and literature. They require devices to enter (be they magic spells or laptops), have transferrable affect but rarely transferrable artefacts (i.e. experience changes the user, but rarely can anything but this experience be brought back from the virtual world), and are frequently extraordinary spaces in which ordinary actions (e.g. walking, talking, fighting) are performed (Bittarello, 2008). With the notable exception of pre-internet virtual worlds being primarily embodied physically (as opposed to virtually), the parallel is impressive. Other authors have rooted the history of virtual worlds firmly in modern game development (e.g. Damer, 2008; Schroeder, 2008; Messinger et al., 2009), although the status of the virtual world itself as a game is contentious (see Bell et al., 2010; Boellstorff, 2010; Carr, Oliver, & Burn, 2010). Whilst rarely the sole topic of an academic contribution, defining and naming virtual worlds has remained a point of departure for many research papers in the field. General discussions of defining and naming virtual worlds can be found in the papers cited above and in Mawer (2011) and Spence (2008): a detailed discussion of classifying virtual worlds can additionally be found in Smith-Robbins (2011).

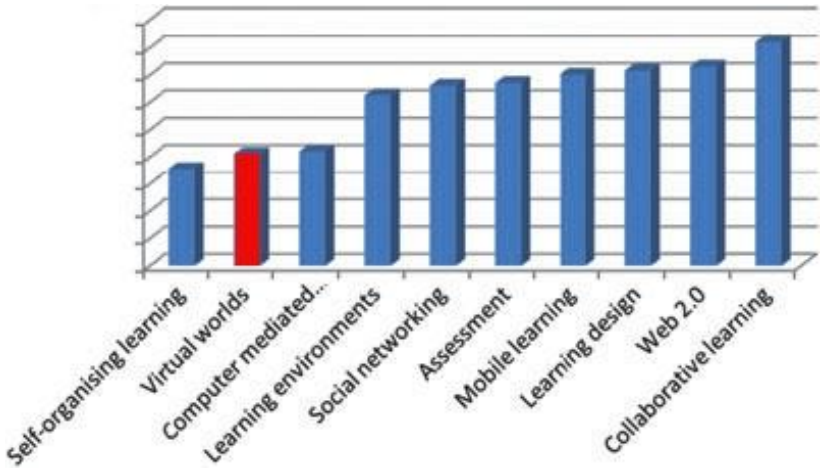
Ultimately, the attributes that characterise particular software as a virtual world, and the tradition in which virtual worlds more generally are rooted, are contested issues. Scholars from several disciplines and with differing interests in virtual worlds have offered definitions and terminology that might be fruitfully reconciled (e.g. Bell, 2008; Boellstorff, 2010), yet it is difficult to see how this can occur when discrepancies between definitions are so significant. Similarly, new research papers tend to take little heed of existing scholarship on the identity of virtual worlds, opting instead for new definition or technical description of the technology (e.g. Jin et al., 2010). Whether a thesis exploring students' perspectives on virtual worlds in UK HE requires a unitary definition of the technology is questionable. It is the definitions students' apply to technologies that are of more immediate interest to the forthcoming analysis and, given our differing backgrounds and the differing situations in which we have encountered virtual worlds, it is likely that I will take a different view to many of the participants quoted in this thesis. Nor is definition a concern solely within the field of virtual world research. Both Njenga and Fourie (2010) and Guri-Rosenblit (2005), for example, have criticised the confusing proliferation of terms and acronyms within the wider 'e-learning' arena.

It is appropriate at the minimum, however, to justify my continued use of the term 'virtual world'. There are several reasons for my adoption of this term. Firstly, the virtuality of technologies such as Second Life is a convergent feature of all virtual world definitions. Whilst parallels have been drawn to non-digital conceptions of a virtual world (e.g. Bittarello, 2008), I have not encountered a claim that a specific software (such as Second Life) is inherently physical rather than virtual or digital. Given that this thesis is about the use of *digital* virtual worlds I contend that we should consider these to be 'virtual', although I recognise that the blurring of 'physical' and 'virtual' in computer technology makes this a potentially fluidic issue. I should emphasise here that 'virtual' does not mean 'unreal' or 'false', but rather non-biomechanical and constituted by digital technologies (e.g. software code). Secondly, I use the term 'virtual world'

without a value prefix such as ‘immersive’ or ‘serious’ so as to leave open the possibility that a virtual world may not be experienced in these specific ways by all users in all situations. User experiences are largely dependent on the context of use and thus it seems imprudent to assert that all users will necessarily be ‘immersed’, feel ‘present’, ‘collaborate’, and so forth. Finally, the need for some form of descriptor beyond 'virtual' makes use of either 'world' or 'environment' (or a similar term) a necessity. I am more inclined toward the ecological sense of 'world' (with networked spaces, practices, communities etc.) due to my own background in MMOGs that fit the 'world' metaphor effectively. There is a degree of interchangeability in the terms 'world' and 'environment' (e.g. Schroeder, 2008), yet technologies such as Second Life are more commonly referred to as ‘worlds’ (see the terminology discussion above). For these reasons, I use the term ‘virtual world’ throughout this thesis to refer to the group of technologies – and specifically Second Life – under discussion. With this definition in mind, let us turn to the use of virtual worlds in educational contexts.

2.2. Trends in VW educational research

The fortunes of virtual worlds in the popular discourse of educational and technology communities have shifted in the preceding four years over which the CURLIEW project has been conducted. In early 2010, Nick Rushby – editor of the British Journal of Educational Technology (BJET) – reported a poll, querying the ‘five key topics in learning technology’, conducted amongst BJET reviewers, the journal editorial board, and members of a worldwide information technology forum. The poll reported that out of 34 possible topics, virtual worlds were rated as the ninth most important current issue (see Figure 1).



[2]

Figure 1: Highest reported key topics in BJET poll, 2010 (Rushby, 2010, p. 346)

By early 2010, a reputation had been established for virtual worlds as a potentially important educational technology; despite observations, from Hew and Cheung (2010) for example, that little research data had been produced. Engagement with virtual worlds in academic discourse spawned several special issues in influential periodicals. Research in Learning Technology (then ALT-J) published a special issue on virtual worlds in late 2008. The Journal of Virtual Worlds Research (JVWR), only launched in 2008, published an issue dedicated to pedagogy, education, and innovation in early 2009. Whilst articles on the use of virtual worlds in education are regularly published in JVWR, this issue (volume 2, number 1) remains the only edition focused exclusively on the topic. By summer 2010 special issues on virtual worlds were published in the periodicals BJET and Educational Research. BJET then published a further special issue on virtual worlds in January 2010, approximately one month after Rushby had polled academics for data that located, when published later in 2010, virtual worlds high in the list of most important current topic in the field. The period between mid-2008 and mid-2010 marked the apex of public discourse about virtual worlds in the UK educational technology community.

In mid-2011 Rushby published a successor study to the 'key topics in learning technology' poll of early 2010. The poll, slightly expanded list of topics (totalling 41) and wider participant group, once again queried the five key topics in

[2] The vertical axis on Figure 1 and Figure 2 both denote frequency of responses in the poll

learning technology (Rushby, 2011). In this iteration of the poll, shown in Figure 2, virtual worlds (highlighted in red) were placed 20th: note that the ordering is reversed and higher frequency responses now appear closer to the y axis.

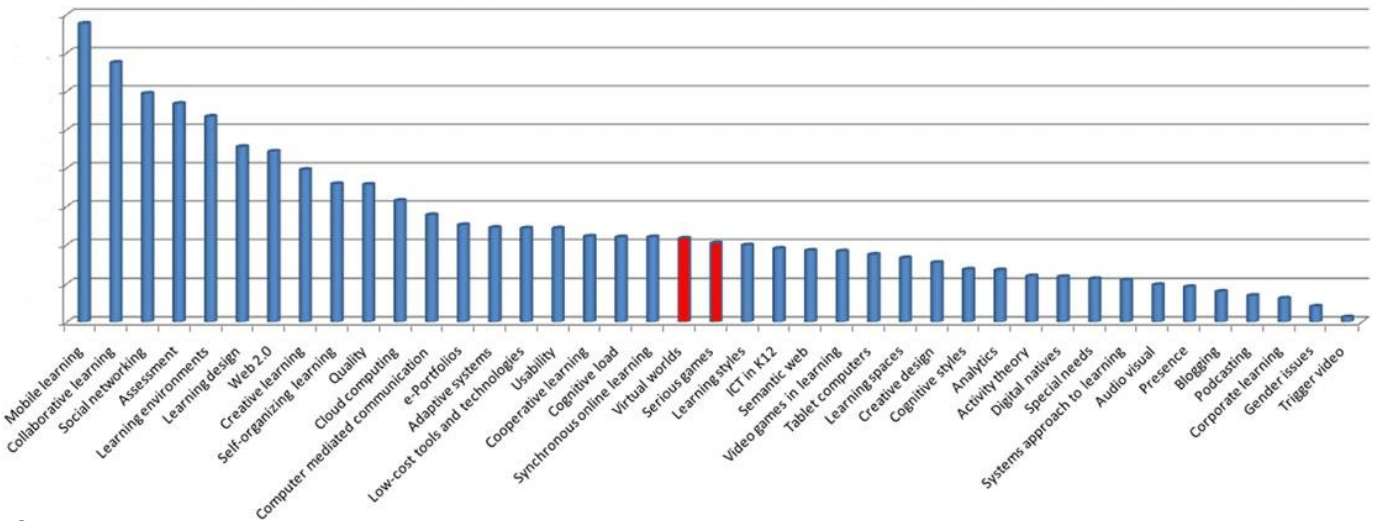


Figure 2: Highest reported key topics in BJET poll, 2011 (Rushby, 2011, p. 886)

The decline of virtual worlds in academic discourse is evident. This poll represents only a select group of academia of course; most notably those publishing academics involved with BJET. Similarly, the contiguity of virtual worlds and serious games (which placed 21st in the poll) may have reduced the individual scores of each category (Rushby, 2011). As may be evident from the discussion of nomenclature above, the academic community has defined virtual worlds in numerous ways. It is plausible that entries in conceptually similar categories, such as ‘serious games’ or ‘video games in learning’, are referring to the same technologies as entries in ‘virtual worlds’ and so due caution is perhaps advisable. Nonetheless, a similar decline in the perception of virtual worlds was reported by technology research company Gartner Inc.; producers of the infamous ‘hype cycle’. By summer 2011, the virtual world had descended into the ‘trough of disillusionment’ (see Figure 3), indicating a public disengagement with the technology.

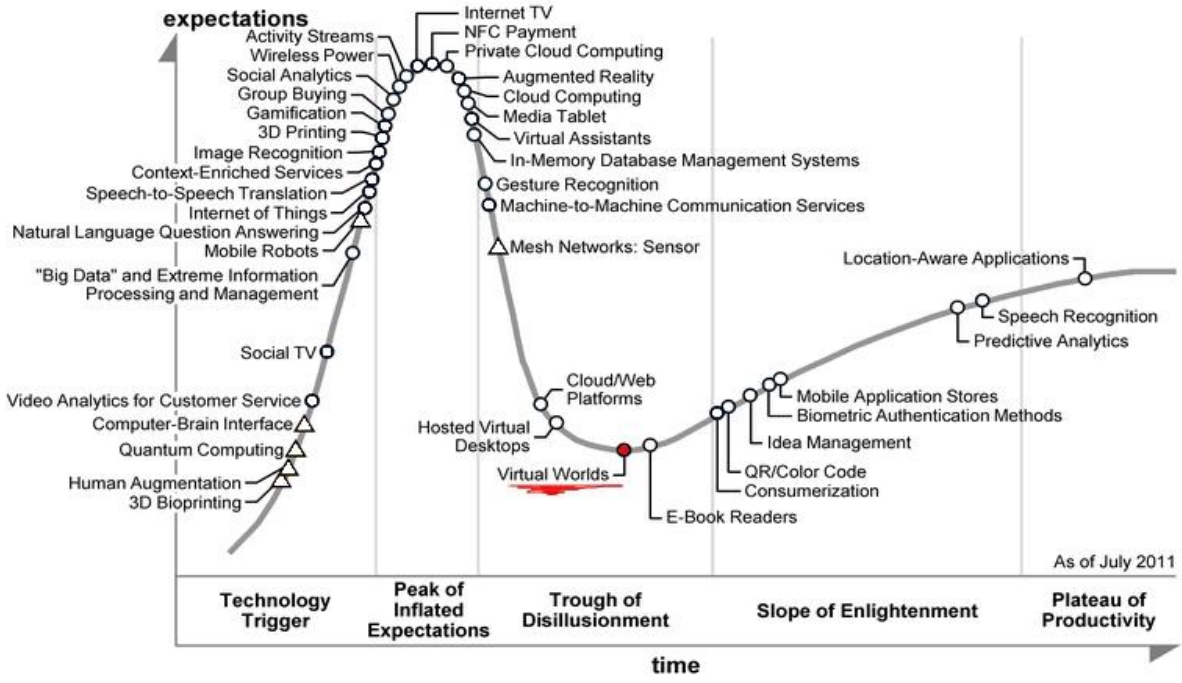


Figure 3: Hype curve for emerging technologies, July 2011(Gartner Inc., 2011)

Thus by mid-2011 the 'heyday' of the virtual world in educational technology discourse had passed. The enthusiasm for virtual worlds that had characterised 2009 and 2010 dissipated and the public discourse of the educational technology community had largely moved onto a new 'hot topic'.

Does this mean that virtual worlds are no longer relevant to education? They are certainly passé, but this does not imply practical obsolescence. Dillenbourg's comments on Technology-Enhanced Learning (TEL) are particularly resonant with the treatment of virtual worlds: '...TEL could never meet the expectations implied in the litany of overstatements on learning technologies' (2008, p. 128). It is clear in the Gartner hype cycle that this failure to meet expectations led to disenchantment with virtual worlds. Interest in virtual worlds has not, however, completely waned. In 2012, The Australasian Journal of Educational Technology (AJET) published a special issue entitled 'Virtual worlds in tertiary education: An Australasian perspective' (see Lee, Dalgarno, & Farley, 2012). Additionally, the University of the West of England (Bristol, UK) have recently started offering the master's degree 'MA Education in Virtual

Worlds'. The Gartner hype cycle suggests that most technologies reach a steady state of usage, the 'plateau of productivity', in which (in the case of education) use of the technology can make a serious contribution to learning. Having fallen from the 'peak of inflated expectations' it would seem virtual worlds are on the journey toward the final stages of Gartner Inc.'s technology hype cycle.

Reaching the 'plateau of productivity', however, does not merely require dispersal of unrealistic hype surrounding the technology. It also requires a serious scholarship that is capable of not only producing research data, but also of providing a credible theoretical and critical basis on which to conduct the academic debate. Establishing this basis in educational technology research is hampered by the prevalence of 'technopositivism' (Njenga & Fourie, 2010), in which technologies are promoted as unambiguous social goods, causally transformative, and attributed with abstract properties that transcend contexts (e.g. Bonk, 2009). Virtual worlds have been caught up in this technopositivist trend, just as have, more recently, tablet computers (e.g. Falmouth University and Cyprus University of Technology, 2013) and Massive Online Open Courseware (e.g. Bonk, 2013). This orientation is not unique to educational technology: As Woolgar (2002), and subsequently Wajcman (2008), have observed, hyperbole and speculation have characterised much debate on digital technologies generally. Educational technology appears particularly prone, however, to cyclical 'hype' in which the decline of 'cyperbole' (Woolgar, 2002) over current educational technologies is merely replaced by equally speculative and hyperbolic accounts of new educational technologies (Bennett and Oliver, 2011).

Technopositivist accounts have been criticised on a number of grounds, including their ahistorical posture (Selwyn, 2010: 2011), lack of regard for political and social context (Hall, 2011), inattentiveness to potential new inequalities (Livingstone, 2012), and reliance on problematic theoretical bases and technological determinism (Lea, 2004; Pelletier, 2009; Oliver, 2011). More

generally, they are part of a wider tendency to dissociate pedagogy from media, eliding the mutually constituting effect of technology and pedagogic action (Cousin, 2005). The challenge, as Cousin (2005) outlined, is to recognise this reciprocal relationship and to neither champion technology-led nor pedagogy-led education, but rather to understand how education and media (from written words to virtual worlds) are 'mutually determining' (2004: 118). As chapter 1 may have indicated, in this thesis I do not follow the 'technopositivist' trend, but rather seek to critically appraise perspectives in situ. In this way the thesis is reflective of recent publications in the field of educational technology in which several academics have argued for a more critical and socially situated study of educational technology (e.g. Selwyn, 2010; Facer, 2012): a point to which I shall return later in this section.

Whilst academic discourse on virtual worlds has diminished, the portfolio of research data on the implementation of virtual worlds as learning technologies has steadily grown. At the onset of my research in January 2009, educational usage of virtual worlds was a nascent field. Published research data was scarce and vastly outweighed by discursive articles considering potential merits, demerits, and strategies for using virtual worlds (e.g. Boulos, Hetherington, & Wheeler, 2007; Savin-Baden, 2008). Hew and Cheung (2010) summarise this situation in their literature review on virtual world use in HE prior to 2009:

> '…as at March 24, 2008, we had a total of 470 papers. Of these 470 papers, 455 were discarded because they were opinion papers, conceptual papers, non-empirical descriptions of programme implementations, literature reviews, or non- K-12 and higher education related' (2010, p. 35)

As Hew and Cheung's literature review suggests, in 2009 the quantity of published research reporting data collected and analysed was low. In their editorial for the first BJET special issue on virtual worlds, Salmon and Hawkridge comment that much pre-2009 research on the educational use of virtual worlds had been 'promotional or even speculative' (2009, p. 408). This

situation changed somewhat over the course of late-2008, 2009 and 2010, when several large-scale funded research projects reported on the implementation of virtual worlds (usually Second Life) in an educational context. These projects included Design of Learning Spaces in 3D Multi-user Virtual Environments (Minocha & Mount, 2009), Open Habitat (White & Le Cornu, 2009), Problem-based Learning in Virtual Interactive Educational Worlds (PREVIEW: Savin-Baden et al., 2009), and Theatron (Childs, 2009). The culmination of these funded projects was accompanied by an upturn in publishing on virtual world implementations, exemplified by the periodical special issues highlighted above. An increasing amount of published articles carried at least limited research data (e.g. Daniels Lee, 2009) and research with dedicated data collection, as opposed to course evaluation surveys and tutor's reflections, became more voluminous (e.g. Petrakou, 2010). Kim, Lee, and Thomas (2012) reported that sixty-five pre-2011, peer-reviewed journal articles presented research data on an educational implementation of a virtual world. This contrasts with the fifteen papers published pre-2009 reported by Hew and Cheung (2010). Kim et al. (2012) searched only for the term 'virtual world' and thus it is likely that sixty-five articles is a (very) conservative estimate, given the diversity in terminology discussed above. Moreover, the proportion of research reporting an experimental approach had increased enormously between the two literature reviews. In Hew and Cheung's (2010) pre-2009 literature review, 6.7% of published articles were deemed to be experimental research studies; this had increased to 42% in Kim et al.'s (2012) pre-2011 review. There are, again, definitional concerns in the latter review; not least the bifurcation of studies as 'descriptive' and 'experimental' which seems to elide non-quantitative approaches (e.g. Savin-Baden, 2010b). Like the concern over narrow search terms, however, this categorisation makes Kim et al.'s findings a conservative estimate and more sophisticated representation of studies carrying substantive research data may report higher volumes.

In sum, whilst academic discourse and popular fervour over virtual worlds may have been waning, the production of research data has been accelerating. The

emphasis of these research ventures has, however, largely been on producing effective pedagogy, rather than evaluating students' experiences. Large funded projects (such as those noted above), descriptions of programme evaluations, and much of the 'experimental research' on educational uses of virtual worlds have focused on establishing pedagogic frameworks (e.g. Girvan & Savage, 2010). Bennett and Oliver (2011) have observed that within educational technology it is recurrent that hype about a technology precedes theory and that when more theorised research follows it is predominated by solving problems of implementation; such as deriving effective pedagogic frameworks. Duncan, Miller, and Jiang (2012) suggested that up to 60% of published research on educational use of virtual worlds is solely concerned with deriving pedagogy. The preponderance of research on pedagogy has, however, led to a paucity of high-quality data on students' perspectives. Information on students' experiences and perspectives must often be retrieved piecemeal from programme evaluations, frequently based on survey measures designed to assess pedagogy rather than collect rich, experiential data (e.g. Penfold, 2008; Cheal, 2009). This subsuming of students' perspectives within pedagogic research, and the research field more generally, is a topic I shall return to later in the section. Currently, however, a brief review of trends in pedagogic implementation of virtual worlds will be helpful for contextualising the forthcoming discussion of students' perspectives. The preceding chronology has examined the ebbs and flows of virtual world research in the previous four years; the following discussion of pedagogic trends examines more closely the types of uses for which virtual worlds have been implemented.

2.3. Educational use of virtual worlds

The use of virtual worlds in both UK HE and internationally has been dominated by Second Life (Kirriemuir, 2010; Duncan et al., 2012; Kim et al., 2012). Out of 65 articles on educational use of virtual worlds reviewed by Kim et al. (2012), 35% concerned use of Second Life, compared to 14% for ActiveWorlds, and the remaining 51% split between numerous other virtual worlds. Other platforms

such as ActiveWorlds, OpenSim, and OLIVE have been used by educators in the virtual world community internationally (e.g. Bronack et al., 2008); however, these uses have been far less frequent and/or frequently reported in the UK. Despite the preponderance of Second Life use, Iqbal, Kankaanranta, and Neittaanmaki (2010) argue that education in the US has been more heavily influenced by ActiveWorlds than by Second Life, primarily through (equivalent to) Secondary Education projects such as River City (e.g. Ketelhut et al., 2010) and Quest Atlantis (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005). Dissimilar to the US research context, however, there have been no virtual world usages in UK secondary or further education comparable to the River City virtual world for scientific inquiry. The Open University-led Schome Park project is a well disseminated example of virtual world use in UK FE (e.g. Peachey, Gillen, & Ferguson, 2008; Gillen, 2009), yet the scale of participation is considerably less than the circa 10,000 students who had reportedly completed the River City scenarios by 2007 (Nelson & Ketelhut, 2007).

The general trend of virtual world use in UK HE has been characterised by three traits: 1) institutionally specific teaching and learning activities with few multi-site projects (although exceptions exist, e.g. Childs, 2009; White & Le Cornu, 2009; Savin-Baden et al., 2010); 2) numerous small-scale projects and single-site cases, rather than large-scale roll-outs as seen with River City (Ketelhut et al., 2010) or Second Life at the University of Texas (Jarmon & Sanchez, 2008); and 3) limited dialogue between HE and secondary/further education on educational use of virtual worlds[3]. In addition to surveying macro trends, it is useful to further explore the ways in which virtual worlds have actually been put to use within HE classrooms and it is to this we shall now turn.

2.3.1. Approaches to the educational use of virtual worlds

[3] The limited dialogue may also be an artefact of Second Life's design. In addition to the 'main grid' habitually utilised by HE, Second Life also separate has a 'teen grid'. Each grid has strict age restrictions, >18 on main grid and <18 on teen grid. As such, colleges and schools utilising Second Life are to an extent using an entirely different platform to their colleagues in HE.

The reported use of virtual worlds in HE can be roughly divided into three modes:

1. Studying the virtual world (or application of the virtual world) itself
2. Studying the enactment of disciplinary concepts within the virtual world
3. Using the virtual world as an environment to study disciplinary content

To distinguish these modes several examples may be illustrative. In the first category, academics have sought to study the virtual world as an artefact generally. Campbell (2009), for example, worked with pre-service teacher students to examine the ways in which Second Life can be applied as an educational technology. Similarly, Cheal (2009) taught an undergraduate module exploring the technology, theory, and current issues surrounding virtual worlds. These studies report teaching and learning situations in which the virtual world itself is the object of study. In the second category, students from Daniels Lee's (2009) operations management class explored how entrepreneurs and business owners in Second Life engaged with the processes of operations management in their commercial activities. In another example, Herold's (2010) media studies classes aimed to increase students' criticality towards media by examining the representation of spaces and cultures in Second Life. In these cases, it is a specific disciplinary concept/process that is embodied or enacted in the virtual world that is the focus of study. In the third category, students in Jamaludin, Chee and Ho's (2009) teaching utilised Second Life as a role-play space in order to develop critical thinking and argumentation skills. Similarly, Rogers (2011) reported the use of clinical simulations in Second Life for nursing students. Clearly in these latter cases the object of study is neither the virtual world itself, nor an inherent feature of Second Life that has disciplinary relevance. Rather, the authors are reporting the use of Second Life as an environment for studying disciplinary content.

Much of the teaching and learning reported has been in the latter category: the use of a virtual world as a vehicle for disciplinary or interdisciplinary content.

Kim et al. (2012) indicated that the majority of virtual world applications have involved the 'reproduction of reality using avatars, objects or tasks' (2012, p. 14), such as the simulations used for nursing noted above. This is perhaps unsurprising given that Messinger et al. (2009) and Kemp and Livingstone (2006) have commented that the ability for educators to develop their own educational materials, such as simulated objects or avatars, in the virtual world is a precondition for their use in teaching and learning. Whilst there are exceptions to this assertion, such as studying media representation in Second Life (Herold, 2010), it appears consistent with the weight of publication and usage. Nonetheless, these trends should be treated with some caution. Kim et al. (2012) also identified in their meta-review that the discipline with most published educational applications of virtual worlds was foreign language education. In the same meta-analysis, virtual world use for foreign language education was closely correspondent to uses of the virtual world as a communication space (i.e. for naturalistic communication with other users); not as a space for 'reproduction' (Kim et al., 2012). Similarly, the typology itself - simulation space, communication space, experiential space – is relatively crude; lacking granularity in terms of how the studies within each category actually applied to the virtual world. Additionally, and following the discussion of nomenclature above, it seems likely that many studies of interest may have been missed by searching only for papers on 'virtual worlds', rather than including synonymous terms and acronyms. Consequently, it is useful to examine some of the general trends in the third pedagogic mode more closely. Two notable strategies are evident in published articles on the use of virtual worlds as an environment for studying disciplinary content. Firstly, virtual worlds have been used extensively for role-play and simulation of processes, tasks, or events. Secondly, virtual worlds have been employed as a space to simulate or create disciplinary learning artefacts.

2.3.1.1. Simulation and role-play

Simulation and role-play has been a key area of pedagogic interest in Second Life (Duncan et al., 2012). An increasingly voluminous and discipline-diverse portfolio of research has emerged on the use of Second Life for role-play and simulation. Amongst the disciplinary settings represented are security and international policing (Hudson & Degast-kennedy, 2009), counselling (Walker, 2009), paramedic science (Savin-Baden et al., 2009), argumentation and linguistics (Jamaludin et al., 2009), geography (Mount, Chambers, Weaver, & Priestnall, 2009) and nursing (Rogers, 2011; Chow, Herold, Choo, & Chan, 2012). Several implementations within this domain have been linked to specific pedagogic approaches, such as problem-based learning (Savin-Baden et al., 2009; Peck & Miller, 2010) or to broad constructivist pedagogic principles (e.g. Rogers, 2011). Similarly, virtual world use has frequently arisen from the perceived lack of opportunities for authentic experiential learning for students (e.g. Walker, 2009), and/or the failures of classroom-based role-play to provide sufficient experiential fidelity to professional situations (e.g. Peck & Miller, 2010; Rogers, 2011). In at least one case, the turn to Second Life as a teaching and learning medium was a direct response to the loss of opportunity for experiential learning in physical settings due to heightened security concerns following the 9/11 attacks in the US (Hudson & Degast-Kennedy, 2009).

Two perceived capacities of virtual worlds are commonly cited in support of role-play and simulation approaches. Firstly, the perceived capacity of virtual worlds to provide environments with a higher degree of visual fidelity to the professional setting than a generic classroom is often cited as advantageous (Peck & Miller, 2010). Student feedback on simulations of this nature is frequently reported to be favourable (e.g. Walker, 2009). Secondly, the capacity for subject-specific content to be included which would be impractical in cost or ethically unacceptable to reproduce in a physical classroom. The PREVIEW project, for instance, created simulations in Second Life in which trainee paramedic students could attend the scene of a recent accident and enact emergency response measures to preserve an injured patient (Savin-Baden et al., 2009). Similarly, Hudson and Degast-Kennedy (2009) created a simulation

of a Canadian border port in which students would assume the role of border agents or travellers in role-play scenarios designed to improve skills in interviewing border crossers. Role-play applications of Second Life have thus predominantly focused on the potential of the virtual world to provide replications and enhancements of extant physical spaces.

2.3.1.2. Production of learning artefacts

Production of learning artefacts has been a second prevalent trend in the use of virtual worlds as an environment to study disciplinary content. As in the case of role-play and simulation, the exact nature of the artefacts produced (and whether they were produced by students or tutors) differs between instances. Generally, the virtual world has been used to create subject-specific representations or replications of concepts and artefacts that students subsequently engage with during class. Edirisingha, Nie, Pluciennik and Young (2009) discussed a pilot study in Second Life in which a series of archaeologically important field sites were recreated virtually for the class to visit. Getchell, Miller, Nicoll, Sweetman, and Allison (2010) have also reported a virtual archaeology project in Second Life; the recreation of a Byzantine basilica. In this case the boundary between simulation of learning artefacts and role-play is blurred. Student teams were required to conduct an archaeological project; including winning project funding, planning, and virtual fieldwork, with the aim of excavating the basilica site successfully, in addition to exploring a 3D model of the complete Byzantine basilica (Getchell et al., 2010). Similarly, Lowe (2008, 2009) created a ‘Genome island’ space in Second Life which included various models and information on genetics with which students could interact as part of undergraduate bio-sciences modules. Creation of virtual world learning artefacts thus supplements teaching and learning in ways impractical or impossible within traditional settings. Interdisciplinary projects that have used Second Life also often involve creating learning artefacts. Jarmon, Traphagan, Mayrath and Trivedi (2009), for instance, described an interdisciplinary communication course in which students made links with a local community

housing project and subsequently modelled a replica of the proposed housing development in Second Life.

The creation of learning artefacts thus still uses the capacities for production and visualisation in Second Life, but does not involve role-play of simulated activities. Certain disciplinary settings also allow the enactment of disciplinary practices toward creating learning artefacts, somewhat blurring the distinctions I have made in section 2.3.1 between categories two and three. Thomassen and Rive (2010), for instance, used Second Life in a digital design course to engage students in cinematography. This form of work transects the use of the virtual world to study disciplinary practices and study of extant disciplinary elements within Second Life and the Second Life community. Kim et al. (2012) have noted that virtual world use for creative purposes within the disciplines may not be well reported within educational periodicals, leading to their omission from meta-analyses (e.g. Hew & Cheung, 2010; Duncan et al., 2012; Kim et al., 2012). As such, it is unclear to what degree these forms of virtual world implementation are taking place in UK HE or elsewhere.

2.3.2. Distance learning

Distance education has also been the focus of a subset of research on Second Life. The potential for providing co-located virtual environs for students in distance courses is one of the most immediately recognisable possibilities for Second Life (Duncan et al., 2012). This potential is outlined by Edirisingha et al. (2009) in their case study of an archaeology course conducted online in which students attended virtual field trips to simulated historical sites in Second Life. Initial reflections from students on the opportunity to meet virtually and provide a social 'class' environment were positive, suggesting that one potential application of Second Life in an educational setting was to provide co-present, synchronous meeting spaces for geographically disparate students. The case study set out by the authors related to only four student participants, however, and thus offers only a limited amount of experiential data. In another

examination of distance learning, Wang, Song, Stone and Yan (2009) reported pilot studies on the use of Second Life for an English as a Foreign Language (EFL) programme in China. These pilot studies involved exchange-style collaboration, predominantly based on group discussions and interviews, in Second Life between Chinese EFL students and students at an American university. Student feedback on exchange activities was highly positive, indicating that the approach had the potential to offer an innovative and effective environment for EFL studies. Of particular interest are the perception of immersion in 'everyday' English expressed by the students and the disinhibiting effect reported of speaking English in an English-native environment (Wang et al., 2009). Similarly, Ritzema and Harris (2008) studied the use of Second Life as a distance learning platform in computer science education with two participant groups: computer science students and computer users who did not study computer science. For the former group, learning artefacts related to disciplinary content at their current level of study were created and offered as interactive 'exhibits' in Second Life. The latter group were orientated in Second Life and then guided through a series of learning activities designed to teach the basic principles of object-orientated programming. In both cases the authors report that responses to the use of Second Life in these ways were highly positive, particularly in raising interest in computer science amongst the non-computer science students (Ritzema & Harris, 2008). These results illustrate that distance learning programmes using Second Life can engender positive engagement with subject content; although, given the lack of a comparison to other approaches (e.g. asynchronous distance learning), they offer little insight into whether Second Life is more or less effective for distance learning.

Distance learning with Second Life has also been considered in adult education outside of the university. Wiecha, Heyden, Sternthal and Merialdi (2010), for example, piloted an interactive seminar in Second Life. This pilot study brought together primary care physicians recruited on an opportunity basis from medical mailing lists to engage with a seminar about diabetes care and treatment.

Participants in this pilot study reported that the seminar in Second Life was engaging, useful, and compared favourably to other online courses. Reflections on the comparison between Second Life and physically co-located classes were not overwhelmingly favourable, but indicated overall that participants found the Second Life intervention either equally or more effective than physical classes.

One issue emerging from distance learning applications of Second Life is definitional blurring of 'distance'. For instance, are classes hosted in virtual worlds for students from the same institution, but who never meet in person, distance education? Can modules that involve physically co-located classes that engage in Second Life activities with other physically co-located classes (Wang et al., 2009) be considered as distance education? In some cases, applications of Second Life include both physically co-located and distance students in the same class activities (Mennecke, Hassall, & Triplett, 2008), further distorting the relationship between campus and distance learning. Although these issues are not highly significant in this thesis, it is worthwhile to note that definitional boundaries between modes of study can be blurred by the varying pedagogic applications of Second Life.

2.3.3. Other trends

Other commentators have provided more extensive analysis of virtual world pedagogy and, whilst pedagogy is not the concern of this thesis per se, it is useful to note some key studies. An overview of pedagogic strategies and issues with virtual worlds is provided by Pfeil, Ang, and Zaphiris (2009): drawing on presentations and discussion contributions from 30 virtual world educational practitioners. This overview explores pedagogic issues in initial engagements with the virtual world, learning and teaching activities, and assessment and validation (Pfeil et al., 2009). Similarly, Savin-Baden (2010a) discusses numerous pedagogic approaches, practical activities, challenges, and potentialities for teaching and learning in virtual worlds in her book on the topic. More abstract commentary on the capabilities of virtual world spaces is

provided by Lim (2009), Dalgarno and Lee (2010), and Warburton (2009). Some caution is advised, however, given the theoretical basis of certain commentaries. Dalgarno and Lee (2010), for instance, draw upon the concept of 'affordances'; an approach Oliver (2005) has convincingly criticised as theoretically incoherent. As I will discuss later in this section, concerns with the focus of these discussions have informed the approach to students' perspectives I have taken in this thesis.

With this general outline of the educational application of virtual worlds in mind, we will now examine several specific issues that emerge from the literature as important considerations regarding students' experiences with virtual worlds.

2.4. Fundamental issues in students' perspectives

Certain themes are evident in the published research on educational use of virtual worlds that appear particularly relevant to understanding students' perspectives. Firstly, student identity and use of stereotype to inform research bears merit as a reflection on the way in which pedagogues have positioned students in relation to teaching and learning. Secondly, the data available on students' experiences of learning to use Second Life is of interest. Following from this, discussions related to students' perspectives on the purposiveness of Second Life in programmes of study is relevant to this thesis. The sections following will examine these areas in detail and reflect on where current research fails to offer satisfactory data and analysis.

There are many additional themes that could be explored in anticipation of their relevance to students' perspectives. These include modes and practices of interaction in Second Life (e.g. Merchant, 2009; Petrakou, 2010), issues around the apprehension and design of space (e.g. Bardzell & Odom, 2008; Minocha & Reeves, 2010), experiences of presence and immersion (e.g. Mount et al., 2009), and learner identity (e.g. Boon & Sinclair, 2008). Each topic is sufficiently detailed to constitute an entire thesis and, although these topics are important,

they are primarily concerned with the interface between student and virtual world. As will become evident in later discussion, this thesis takes a broader lens approach in which the socially situated nature of the virtual world is explored. As such, I have focused on the three themes identified above in order to situate the forthcoming analysis.

2.4.1. Student identity and the 'Digital Native' archetype

An issue of particular significance to the examination of students' perspectives is the construction of student identities in the published data. Broadly speaking, the research literature has failed to attend to the identities of participants beyond demographic variables (e.g. gender, course of study, approximate age) and in some cases fails to provide even this detail (e.g. Minocha, Tran, & Reeves, 2010; Thomassen & Rive, 2010). As a result, there is little information available to actually discern who are the 'students' participating in educational applications of virtual worlds. Little is known about the individual biographies of students, their educational history, personal use of technology, and so forth. One solution authors have used to fill this void has been to draw upon the 'Digital Native' theory (Prensky, 2001a, 2001b). The Digital Native theory posits that a key division exists between those born pre-1980 and those born post-1980 due to the saturation of digital technology in everyday life (Pedró, 2006; Sanchez, Salinas, Contreras, & Meyer, 2011). Digital Natives, born post-1980, are deemed fundamentally oriented towards technology-centric, information-rich activity, accessed at a fast rate through multiple media sources (Prensky, 1998; Pedró, 2006). Prensky describes this generation as:

> '….native speakers of technology, fluent in the digital language of computers, video games, and the internet' (2006, p. 9)

Digital Native students are considered likely to be collaborative learners, to value participation, co-presence and networked information (Barnes & Tynan, 2007). Similarly, it is assumed they are more heavily influenced by digital media

sources and therefore less likely to be engaged by non-digital activities (Pedró, 2006). To understand the Digital Immigrant, born pre-1980, the diametric opposite of the traits noted above is representative (Prensky, 2001a, 2001b, 2003).

Digital Native theory has been applied in various circumstances within the literature. The figure of the Digital Native is used to frame student identity and form the main premise for Duffy and Penfold's (2010) work designing a virtual campus for Hong King Polytechnic University. Herold (2009) also discusses students' identity as 'digital natives' in relation to a separate aspect of the Hong Kong Polytechnic Second Life project, although he later recants this position (see Herold, 2012). O'Connell, Grantham, Workman and Wong[4] (2009) and Toro-Troconis et al. (2010) advocate leveraging Digital Native's game-playing skills and familiarity with virtual environments in their discussion of developing a virtual world intervention. O'Connell et al. (2010) conduct a discourse analysis of student talk in a virtual world, both framing their participants as Digital Natives and transposing this theoretical perspective onto the data analysis. Coffman and Klinger assert that the emergence of Digital Native learners makes use of immersive environments, such as virtual worlds, the 'next natural steps in teaching and learning' (2008, p. 29). This is echoed by Haycock and Kemp (2008) in their suggestion that there is a need for institutions to build library spaces that facilitate Digital Native work styles; a space in Second Life being their primary exemplar. Other authors employ the figure of the Digital Native in weaker claims. Burgess, Slate, Rojas-LeBouef and LaPrairie, for instance, claim that '…acquiring knowledge and skills through the use of MUVEs is an effective and powerful instrument for students who are digital natives' (2010, p. 85). In this latter case the potential for participants to *not* be Digital Natives is acknowledged, even if the typology is still employed conceptually.

[4] Curiously, O'Connell et al. adopt the terminology of 'Digital Natives' and 'Digital Foreigners', the latter not being an original term from the cited works of Prensky. It is not entirely clear why they chose to modify the theory's vernacular, although this is not uncommon. Toledo (2007), Stoerger (2009), and White and Le Cornu (2011) have attempted similar modifications, although in the case of O'Connell et al. it appears more likely to be a misquotation given the lack of any explanation around the switch from 'Immigrant' to 'Foreigner'.

It is particularly concerning that authors assume *a priori* that their participants are Digital Natives, and furthermore that this provides sufficient understanding of their personalities, practices, and proclivities. Researchers in education have criticised this claim elsewhere and at length (e.g. Bennett, Maton, & Kervin, 2008; Kennedy, Judd, Churchward, Gray, & Krause, 2008; Helsper & Eynon, 2010; Jones, Ramanau, Cross, & Healing, 2010; Salajan, Schönwetter, & Cleghorn, 2010; Thinyane, 2010; Waycott, Bennett, Kennedy, Dalgarno, & Gray, 2010). Serious failings have been identified in Digital Native claims about universality of technology ownership and use (Jones et al., 2010; Waycott et al., 2010) and the universality of digital literacy (Kennedy et al., 2008): particularly in the context of HE (Masterman & Shuyska, 2011; Ransdell, Kent, Gaillard-Kenney, & Long, 2011). Moreover, the digital literacy dichotomy between generations is unsupported by several large research studies (Guo, Dobson, & Petrina, 2008; Helsper & Eynon, 2010). There exist, additionally, a host of theoretical objections to 'Digital Natives' which, for reasons of longevity, I will not recount here: cogent cases can be found in Bennett et al. (2008), Bayne and Ross (2007), and Facer (2012).

This is not to say that practices with digital technologies are not evolving, differentiations between groups of users emerging, and/or leisure use diverging from educational uses of technologies. Use of social networking sites (e.g. Facebook) and home access to the internet are (almost) ubiquitous amongst teenagers in certain European countries, including the UK (Livingstone, Haddon, Görzig, & Ólafsson, 2011; Ofcom, 2010). Additionally, Crook (2012) has demonstrated that web 2.0 technology use and practices common amongst adolescents do not fit comfortably with current practices or structures at school. Unlike previous commentators on this divide (e.g. Gidley & Hampson, 2005; Prensky, 2005; Van Eck, 2006), however, Crook does not urge immediate, radical reform of the schooling system. Rather, he identifies that educational and leisure spaces are fundamentally different and we might expect that technology use in these spaces will (and perhaps should) also be different

(Crook, 2012). Erstad (2012) too has challenged the assumption that technology use inside schools should mirror that outside schools, suggesting instead that we need to explore how differences in practices are experienced by students and how practices in one setting may relate to those in another. Nor is it clear that the young are necessarily the digitally literate and creative internet users that have been envisaged. Dutton and Blank (2011) have identified in the results of the Oxford Internet Survey (OIS) – a large-scale internet use survey in the UK – that 'next generation users' (with a higher propensity for creative activity online) emerge across all age groups: not just amongst students or teenagers. Similarly, Eynon and Geniets (2012) have called attention to 'lapsed internet users'; the 10% of 17-23 year old respondents to the OIS who reported that they had previously used the internet, but no longer did so.

Even assuming the generational dichotomy is valid, it does not follow that this would have such resounding influence on HE as Prensky and others have claimed for schooling (e.g. Prensky, 2006). HE includes a much broader age range of students than secondary education (and this can differ greatly by institution, see Jones et al., 2010) and includes numerous students from outside of the UK. Some prominent European countries still have relatively low overall household connectivity. Italy, for instance, has broken the 50% threshold for homes connected to the internet only within the last two years and 61% of households remain without a broadband (i.e. high speed) connection (Livingstone et al., 2011). This is not to mention digitally developing countries, particularly in Africa, where evidence suggests lower ownership and usage of digital technologies; even within university populaces (Thinyane, 2010). Within the context of this thesis, evidence from research on the educational use of virtual worlds is, at best, equivocal on the assumptions of the Digital Native theory. Two particular assumptions stand out as dubious: Firstly, students will be familiar with virtual worlds. Secondly, age determines engagement (Prensky, 2001a).

In response to the first assumption, there is nigh-overwhelming evidence that students are broadly *unfamiliar* with the virtual worlds being utilised in UK HE. Jones et al. (2010) investigated the technology use of university students through a survey of 596 participants across five universities, 15 courses, and a broad age range. Of this sample, only 2% reported previous use of a virtual world. This lack of familiarity is frequently borne out in educational research on virtual worlds also. Campbell (2009) reports that only 17% (six) of the education students involved in her research had heard of Second Life prior to the course. Campbell's statistics should, however, be treated with some caution due to unclear reporting, most notably in stating that all participants knew or 'inferred' Second Life was a virtual world, but later commenting that only eight participants thought Second Life was a virtual world (Campbell, 2009). Nonetheless, similar findings are reported by other authors. Edirisingha et al. (2009), Mennecke et al. (2008), Thomassen and Rive (2010), Shen and Eder (2009), and Cheal (2009) all report that their student participants had little or no knowledge of Second Life prior to the educational engagement they discuss. McVey (2008) indicates that none of his eight student participants had used Second Life before and 75% (six) had never heard of Second Life prior to his research. This latter case is a useful illustration of the pervasive assumption that students will be familiar with digital technologies. McVey commented that his participants were 'unique' (2008, p. 177) because of their lack of engagement with virtual worlds. It is evident from the studies noted above that it is not unique for students to be unacquainted with virtual worlds; if anything, this is the norm.

In like manner, the evidence that has emerged from virtual world use in education does not support the assumption that age is fundamentally related to engagement. Wiecha et al. (2010) and Girvan and Savage (2010) both report highly positive responses and successful pedagogic use of Second Life with adult learners who would be categorised as Digital Immigrants. Furthermore, Jarmon et al. (2009) ran an interdisciplinary communication course using Second Life that included graduate students of different age groups. Although

the authors report some initial scepticism toward the utility of Second Life, the students' final evaluations and interviews indicated that the virtual world was both valuable and effective in facilitating the course goals (Jarmon et al., 2009). If Digital Native students are assumed to be engaged and competent with virtual worlds, it seems to follow that Digital Immigrant students should be disengaged and unable to effectively learn in a space such as Second Life (although other evidence undermines this proposition also, see Ransdell et al., 2011). Yet this does not emerge from the literature, with diverse age ranges of students reporting both engagement and disengagement with the use of Second Life as a learning technology. Duffy and Penfold (2010), for instance, introduce their virtual world project at Hong Kong Polytechnic by asserting that learners are Digital Natives and their willingness to engage with digital technology must be capitalised on. Despite this, Duffy and Penfold (2010) later report that only ten students took part in activities on the Second Life campus and suggested there were concerns about participation to resolve for future use. Thomas and Hollander (2010) perhaps provide the most compelling case for pause regarding the Digital Native assumption. In their use of Second Life as part of urban planning classes, the authors suggest that their preconceptions of students' identity were found to be inaccurate:

> 'Given that the students were all, by definition, part of the internet generation, we assumed they would start joining social groups and 'hanging out' with friends online. They did not.' (Thomas & Hollander, 2010, p. 233)

The comments of Thomas and Hollander resonate with other evidence in students' technology use, such as Waycott et al.'s (2010) findings that both students and staff tend to divide technologies into 'living' and 'learning'; desiring some separation between the two categories.

Given this evidence, assumptions of familiarity and engagement associated with age in the Digital Native theory are unhelpful for understanding students' perspectives on virtual worlds. Theorising students' relationship with and use of

technologies *a priori* by applying a homogenised model of the student (i.e. the Digital Native) generates little real understanding of experiences or perspectives. A more useful approach is to examine the experiences of virtual worlds emerging from published literature and, more pointedly, to explore individual cases of digital literacy in each research study. As Crook puts it,

> '...digital fluency should not be abstracted as if it was an idealised characteristic of people - decoupled from the situations in which they act. Communication practices do not exist independently of the socio-cultural structures that communicating agents occupy' (2012, p. 77)

Similarly, examining students' perceptions of purposiveness of learning in the virtual world offers a more promising avenue that assuming students will 'get it' due to their Digital Native identity (e.g. Toro-Troconis et al., 2010).

Moreover, it seems that in analyses that deploy the Digital Native (and related) archetype there is a degree of conflation between the (closely related) ontological and epistemological issues in identity. Whilst much focus in such implementations of virtual worlds has been on the epistemological and literacy practices of participants (the 'knowing' and the 'doing'), many ontological issues associated with such practices (the 'being') have been marginalised. Research on student and teacher identities in virtual worlds (e.g. Bayne, 2005: Boon and Sinclair, 2009: Savin-Baden, 2010b) has raised a host of intriguing (and often concerning) ambiguities related to participation. Concepts of identity deceit and deviance in virtual worlds (raised by Bayne, 2005) for instance, have been part of the larger arena of cyberspace theory (e.g. Turkle, 1997; 2011), but appear to have little traction within a Digital Native discourse that implies such issues are irrelevant to current generation users of digital technology. In a similar vein, through homogenising student populaces Digital Native identity archetypes elide ontological issues arising from disability and virtual worlds, particularly, though not exclusively, the construction of disability in (re)embodied spaces (e.g. Hickey-Moody and Wood, 2008: Carr, 2010). Continued interest in identity

within virtual worlds (e.g. Peachey and Childs, 2011) has indicated that there is much nuance in issues of embodiment, aesthetic, deceit and control, and play and fluidity that are poorly articulated by the uniformity of Digital Native theory. From this perspective, ideas about Digital Native students actually tell us relatively little about identity in an ontological sense, but rather speak to the epistemic relationship between extant practices and learning with particular media. To address this topic it is necessary to move to a second fundamental issue in relation to educational use of virtual worlds; learning and the 'learning curve'.

2.4.2. The 'learning curve'

A second area of interest to understanding students' perspectives is the development of competencies required to successfully engage in learning in Second Life. The concept of the 'learning curve' is well represented in published literature (e.g. Mennecke et al., 2008; Pfeil et al., 2009; Wang & Braman, 2009). The term 'learning curve' is used to describe the competencies required to use Second Life in learning, and the requisite time to develop these competencies. Issues relating to the learning curve are particularly important to considering students' perspectives in Second Life due to their centrality in experiences of learning. The process of learning to function effectively in Second Life is, to some degree, a key facet of any educational experience within the virtual world.

In much of the literature there has been an assertion that the learning curve for Second Life is 'steep' (e.g. Jarmon et al., 2009; Pfeil et al., 2009); i.e. difficult, time-consuming, requiring much effort. Yet evidence for this assertion has been mixed. Observations of students in some research studies have certainly suggested a degree of difficulty in learning to function within Second Life. Petrakou (2010) studied a presentation and argumentation module delivered in Second Life and found students were broadly unfamiliar with the navigational and interactional skills required to engage effectively within the virtual world. Pfeil et al. (2009) also commented that students are frequently disorientated

and confused by their initial dealings with the virtual world. These feelings of confusion are suggested to arise both from specific practices within world, such as teleporting, and from the technical problems with the virtual world programme; such as crashes or log-in difficulties (Pfeil et al., 2009). Similarly, McVey (2008) studied communication practices for novice students on 'field trips' into Second Life, concluding that confidence levels for novice users are often very low. Evidence thus exists of a steep learning curve; however, the issue is not as straightforward as these findings would suggest. Other research has been equivocal regarding the learning curve's gradient. Ritzema and Harris (2008), for instance, reported that novice users from computer science and non-computer science backgrounds found Second Life only 'nominally' difficult to grasp.

The actual orientation time reported in research is illuminating. Edirisingha et al. (2009) conducted two student orientation sessions, each an hour in length, to develop sufficient competency that Second Life could be used. Jarmon et al. (2009) also report implementing two orientation sessions, each one hour in length. In a single-class Second Life intervention, Wiecha et al. offered orientation and support to medical practitioners until they felt ready to engage with the learning content. In this case, the average length spent on orientation activities was 78 minutes (Wiecha et al., 2010). For these studies, the steep learning curve can therefore be approximated to somewhere around two hours (106 minutes if we take an average). Within other research the approach to the learning curve has been quite different. Toro-Troconis et al. (2010) prepare students for games-based learning scenarios in Second Life with an unusually short orientation period of only 20 minutes. Conversely, Wang and Braman (2009) engaged in 200+ minutes of class discussion on underlying concepts and technology of Second Life prior to students actually entering the virtual world. Esteves, Fonseca, Morgado and Martins' (2011) activity-led approach to learning in Second Life involved regular meetings with tutors to examine progress, exchange ideas about work, and offer guidance. Orientation was thus a more diffuse process than the discrete orientation sessions enacted by, for

example, Edirisingha et al. (2009). If orientation to Second Life is treated as the whole period in which tutors are instructing or guiding students on the instrumental function of Second Life, then for Esteves et al.'s students this totals many hours. Alrayes and Sutcliffe reported a similar approach, holding a weekly tutorial in Second Life to 'acquire technical skills' (2011, p. 6). As the module described by Alrayes and Sutcliffe (2011) took place over 20 weeks, this totals 40 hours of orientation period.

Whilst many authors have argued that the learning curve for Second Life is steep, clearly there is no consensus on how long it takes students to 'ascend' it. The length and frequency of orientation sessions vary and, in many cases, are structured by modular systems rather than in response to students' learning: for example, the first two classes of the module are used as orientation. Additionally, it is unclear to what frame of reference the learning curve for Second Life is being compared. Whilst two hours of orientation may seem extensive for a simple computer programme (e.g. Microsoft Paint), it is certainly minute when compared to the learning curve for academic writing in a new disciplinary area, speaking a non-native language fluently, or learning a complex database software (e.g. Microsoft Access). Moreover, it is questionable whether even ten hours of orientation to Second Life constitutes a steep learning curve within a university module notionally constituted of 200 study hours.

A further conceptual problem is the deterministic implications of the learning curve metaphor. The relative steepness of the learning curve has generally been assessed by researchers extrapolating from their observations of students and applying these extrapolations as intrinsic properties of the technology. The discussion of learning to use Second Life has occurred devoid of contingent discussions of context and individual learners. A regular computer user with some experience of other virtual worlds is likely to experience a less steep learning curve than an irregular user or a student who has never used a

computer before[5], and, as the discussion of Digital Native theory has suggested, there is great variance in students' technological expertise. In some cases the reports of a steep learning curve have been directly from students (e.g. Mennecke et al., 2008); however, there appears to have been an uncritical acceptance of these accounts within published research. Little attempt has been made to situate exactly what is meant when students suggest that the process of learning Second Life has been difficult: what does 'steep' mean to them? In comparison to which other learning experiences? And why is a specific process, action, or knowledge threshold causing difficulty?

Some accounts hint at a more sophisticated understanding of learning. Mennecke et al. (2008), for instance, comment that the learning curve for Second Life is not merely the need to apprehend technical operations such as movement, building, searching and so forth. Instead, it is also necessary to understand the complex social systems of Second Life (Mennecke et al. 2008). This link between experiences of learning and the social systems of Second Life echoes the ways in which literacy theorists discuss the situated nature of digital literacy practices (e.g. Kress, 2003; Kahn & Kellner, 2005; Merchant, 2009). Literacy, from this perspective, is not a matter of ascension from illiteracy to competency, but a constant act of interpretation and critique that involves the apprehension of new modalities of communication and action situated within cultural and social contexts (Lea and Street, 1998; Barton and Hamilton, 2000; Lea, 2004). Nor is literacy only taken to mean reading and writing, but rather a host of communicative, spatial, creative, and interpretative practices salient to understanding experiences of virtual worlds (Gillen, 2009; Merchant, 2009). The rhetoric of the learning curve within the virtual world educational literature has, however, remained disconnected from the body of scholarship on academic literacy, even whilst some authors have argued for pedagogic use of the virtual world in facilitating particular types of literacy practice (e.g. Hedburg, 2008).

[5] This is clearly an extreme example; in UK HE the overwhelming majority of students will have some experience with digital technology. However, as I have noted in the discussion of 'Digital Natives' above, it is an egregious simplification to suggest that all students have common engagement with digital technologies and specifically with virtual worlds.

Despite a common discourse in published research of the 'steep learning curve', this issue appears far from straightforward. Analysis of evidence available reveals a complex picture in which some students find functional mastery of Second Life challenging, but others do not, and time spent learning to use Second Life varies between 20 minutes and 40 hours. More important, the relative gradient of learning curves lacks any common frame of comparison and/or assessment of students' prior competencies; rendering discussion abstract and uninformative. Students' experiences are under-analysed in favour of general statements about the virtual world's ease or difficulty. The aspects of developing literacies that students find difficult is briefly addressed (e.g. Pfeil et al., 2009); however, the underlying question of why these are areas of difficulty, for whom, and in what circumstances, is left unanswered. Pedagogically focused projects (e.g. Savin-Baden et al., 2009) might be expected to offer more theorised accounts of student learning, yet, unfortunately, little rich data on students' perspectives or experiences has emerged from these projects; such data is subsumed (or elided) within the pedagogic evaluation of project objectives. This particular domain of students' perspectives is one in which further analysis would certainly be informative.

2.4.3. Perceptions of purpose

A further important issue is students' perspectives on the purpose of virtual world implementation. Several authors (e.g. Mount et al., 2009; Wiecha et al., 2010) have commented on the need for the premise of using Second Life to be pedagogically sound and apparent to students in order to promote engagement. As Wiecha et al. put it:

> 'Among the lessons learned is that an event like this has to be designed in such a way that it answers the question 'Why SL [Second Life]?' before it gets asked' (2010, np)

Mount et al. (2009) have similarly commented that there must be solid pedagogic principles behind the use of Second Life, and that simply transferring existing learning activities into a virtual world with no apparent pedagogic justification is likely to garner little support from students. More specifically, this pedagogic justification must be evident to students. This theme is best explored through several examples of when purposiveness has been challenged by students.

In several reports students' have questioned the purposiveness of learning and teaching activities, with consequences ranging from confusion to rejection and retrenchment against the virtual world. Esteves et al. (2011) engaged in an activity-led learning computer science module with several groups of students at various levels of study in the discipline. Students were offered the opportunity to conduct programming projects in Second Life that were visually-orientated, such as building and scripting objects, or text-orientated; such as learning and constructing scripts in Linden Scripting Language. In evaluating the programme, Esteves et al. (2011) found that the visual project was far more successful than the textual project. The immediate feedback from the visual project, such as the programmed object moving in the desired manner, contrasted to the lack of feedback from the textual projects (2011). Importantly, students challenged the relevance of enacting a solely textual project in a 3D environment. Immediate visual feedback in the visually-orientated project distinguished Second Life from other programming tools available. With textual projects, the virtual world was perceived to offer no immediate benefit and thus lacked pedagogic purpose. This finding echoes earlier work by Sanchez (2007) that sought to implement a Second Life element to an undergraduate literature class. In this case Second Life was utilised as a visual aid to writing, although the authors offer little detail as to what this entailed. Student responses to the use of Second Life in this manner were at best ambivalent, reflecting a perceived lack of relation between the virtual world activities and the disciplinary content (Sanchez, 2007). Sanchez (2007) observed that the perceived lack of purpose for Second Life activities actually angered students.

Pfeil et al. (2009) have argued that specific activities within Second Life must be justified; not simply the use of the virtual world broadly. This comment resonates with both the findings of Esteves et al. (2011) and Sanchez (2007). It also aligns with the Technology Acceptance Model (TAM), which suggests that the factor 'perceived usefulness', twinned with 'perceived ease of use', strongly influences behavioural intention (Davis, 1989). Multiple applications of TAM have been published in educational research on virtual world use (Fetscherin & Lattemann, 2008; Hua & Haughton, 2008; Shen & Eder, 2009; Chow et al., 2012). Shen and Eder (2009) explored intention to use virtual worlds in an educational setting using the TAM, conducting a three week practical project in Second Life with 90 students (77 of whom completed analytical measures). Perceived usefulness was found to be a significant predictor of intention to use Second Life in education, but perceived ease of use was not; although ease of use was a significant influence on perceived usefulness (Shen & Eder, 2009). Conversely, Chow et al. (2012) examined behavioural intention to use a Second Life simulation of rapid sequence intubation in a supplementary undergraduate nursing course with 206 participants. Perceived ease of use was found to be a much stronger predictor of behavioural intention than perceived usefulness, although both were significant predictors of behavioural intention (Chow et al., 2012). Some caution is due in interpreting Chow et al.'s findings because the authors do not elaborate on the orientation session for students. Whilst Chow et al. (2012) indicated that an orientation session was conducted prior to the simulations in Second Life, there was no indication of what this session involved, how long it was, nor what proficiency students appeared to have reached upon completion (i.e. could they move an avatar? Communicate?).

Nonetheless, it appears from these findings that perceptions of purposiveness are crucial in shaping intentions towards virtual world use. It is also evident that these judgements can be influenced by estimations of the relative arduousness of using the technology. These claims follow closely the 'learning curve' discussion in section 2.4.2 and emphasise the need for a sophisticated

approach to understanding students' perceptions on learning to use a virtual world within a specific educational situation. Like the TAM generally, however, published literature on virtual worlds has offered little insight into why elements are seen as useful, relevant or purposive. Perceptions of purpose have been treated largely as irreducible, self-evident concepts. Consequently, there has been little attempt to theorise students' perspectives on purposiveness; particularly in regard to broader meanings attached to practices. Esteves et al.'s (2011) research, for instance, immediately raises further queries regarding what *students* perceive to be the advantages of virtual worlds, and accordingly what *students* consider to be an effective application of these possibilities. Similarly, Chow et al. (2012) offered no explanation as to why the 206 student respondents may or may not perceive Second Life to be useful; it is merely stated (through interpretation of responses to Likert survey items) that they do.

Disciplinary differences are also alluded to by the differing students' attitudes towards purposiveness. Sanchez (2007) found little support for the congruence between English literature and Second Life, for instance, yet Esteves et al. (2011) and Ritzema and Harris (2008) offer evidence to suggest that computer scientists found certain applications of the virtual world disciplinarily relevant. I have noted above the self-evident concordance between the virtual world and the discipline when studying the application of disciplinary concepts in the virtual world (mode 2; see above). Notwithstanding this, most educational applications of virtual worlds have followed mode 3, using the virtual world as an environment to study disciplinary content, and thus it remains unclear whether virtual worlds are perceived to be more salient to particular disciplinary settings. As may have been evident in my discussion of pedagogic trends, certain disciplines have reported extensive use of Second Life (e.g. health professions), whilst others have reported little or none (e.g. dance, sport sciences). This disparity may reflect academics' perceptions of virtual worlds' relevance or irrelevance within the discipline, although it is unclear whether students would or would not concur. Alternatively, disparities might reflect the availability of funding, disciplinary background of interested academics,

structural arrangements within disciplines (e.g. more technology use or distance learning), or under-reporting through lower publication rate in educational periodicals. The role that discipline plays in shaping perspectives on the educational use of virtual worlds, and consequently perceptions of their purposiveness, is thus ambiguous in the current published literature.

2.5. Concerns with the current state of research

Several concerns arise from the literature that I have attempted to address in this thesis:

1. The methodological sophistication of published research has been lacking
2. There has been a pervasive tendency within the literature to draw under theorised continuities between educational uses of virtual worlds and practices from leisure domains such as gaming or social networking
3. Of the little high quality data available, there has been an emphasis on the use of students' accounts as a data source for reflecting on pedagogy; rather than a focus of inquiry
4. Published literature has focused on a narrow conception of perspectives and experiences influenced by factors contained within the course or module, eliding extant influences (with the exception of technological skill) on perspectives

In this section each concern is discussed and, where appropriate, I illustrate the stance toward the research field that I have established within this thesis. A more detailed discussion of specific methodological arrangements is forthcoming in chapter 3.

2.5.1. Methodological sophistication

As might be expected of a nascent field, much research has been small scale and, in some cases, unsophisticated in design. Explications of methodology

have frequently been lacking in detail (e.g. Herold, 2009; Thomas & Hollander, 2010) and some have relied on informal measures taken during the course of a module (e.g. Daniels Lee, 2009) rather than dedicated data collection for research purposes. Of more immediate concern is the limited amount of data available due to the small numbers of participating students in many published studies. McVey (2008), for instance, reported a quasi-experimental study of communication that includes only eight student participants. Similarly, Cheal (2009) employed a survey instrument with 15 respondents. Wiecha et al. (2010) performed statistical analysis of likert survey responses for 14 participants. Ritzema and Harris (2008) also analysed a web-based survey from 14 participants. Lowe (2009) employed a Likert survey instrument with only eight respondents. It is not inherently limited numbers that is the problem here, but the lack of rich data available. Larger scale analyses, such as Chow et al.'s (2012) 206 participants, have tended towards examining or validating existing models (e.g. TAM), rather than examining experiences or perspectives in detail. Gunn and Steel (2012) have observed that attitudinal surveys are pervasive in educational technology research, but do not offer sufficient depth to generate a sophisticated analysis. Likert surveys of 15 students are unlikely to provide any detailed insight into students' perspectives given the limited depth of the measure and scope of the sample. This is especially the case when analyses are ambiguous - such as rating the virtual world to be higher than average on 'interactivity' (Alrayes & Sutcliffe, 2011) – and are not subsequently explored in greater detail.

Lack of analytical depth has not solely been a feature of quantitative approaches or course evaluation surveys; in some cases qualitative data has been similarly lacking. Hudson and Degast-Kennedy (2009) conducted pre- and post-module interviews to understand students' experiences of a role-play scenario in Second Life. In reporting these findings the authors chose to reduce the qualitative data to a series of short bullet points, eliminating the richness of the data and thus offering little opportunity to reflect upon students' experiences. McVey (2008) evaluated his study of communication practices in

Second Life with two open-ended survey questions, yet these also had methodological problems. Firstly, the survey question distinguishing between novice and expert communicators was clearly leading: inviting students to comment on what distinguished expert communicators, as opposed to asking if there was a distinction. Secondly, McVey subsequently employed a coding rubric derived from extant research literature; essentially quantifying the qualitative data by counting its concordance with predetermined categories. In both cases the opportunity to provide deeper and more useful data on students' experiences and perspectives was missed. Research with small participant numbers and/or little depth is not universal in the field. Effective, detailed data has been offered by several studies which have employed multiple data sources or detailed explorations of experience (e.g. Jarmon et al., 2009; Petrakou, 2010). Nonetheless, there is a need for current research increasingly to go beyond single-site, descriptive studies and to provide robust *interpretation* of students' perspectives. Moreover, greater methodological focus on exploring meanings underpinning and attached to students' practices is necessary to achieve insight into perspectives. Too often studies have taken students' perspectives (particularly in responses to surveys) as irreducible, failing to examine what influences students to articulate themselves in the ways reported.

2.5.2. Assumed continuities

A second concern is the assumption of continuity between practices involving digital technologies. Certain facets of the literature have assumed an unproblematic continuity between educational engagements in virtual worlds and other digital practices; particularly computer gaming (e.g. Toro-Troconis et al., 2010). Although some theorists have argued for the effectiveness of educational practices drawn from digital games (e.g. Gee, 2003), this does not imply that practices are continuous between educational and other contexts. Not all digital terrains are alike, the literacies required to engage are often disparate, and students have varying levels of familiarity, as the discussion of Digital Native theory above has illustrated. Nor is there justification for the

assumption that familiarity with practices in a leisure domain (e.g. gaming for enjoyment) necessarily implies the desire or capacity to enact those practices in educational domains. As Waycott et al. (2010) observed, both students and staff divide technologies into 'living' and 'learning'; indicating a desire for separation between some uses of technology. This is not to say that the two categories of technology use are irreconcilable, but to critique the assumption that continuity between them is straightforward. A nuanced approach, that recognises the potential difficulty in transferring practices into educational environs in the face of resistance of the kind noted by Waycott et al. (2010), is required.

2.5.3. Students as data

A third concern with the literature published to date is the subsuming of students' perspectives as a form of data for evaluating pedagogy. Whilst reports on learner experiences of e-learning have been relatively common (e.g. Timmis, O'Leary, Weedon, Harrison, & Martin, 2004; Conole, de Laat, Dillon, & Darby, 2006; Creanor, Trinder, Gowan, & Howells, 2006), studies about learner experiences with virtual worlds have been very limited. Much of the detailed data available regarding students' experiences of virtual worlds are contained within papers that are primarily concerned with developing pedagogy for effective use of virtual worlds in education (e.g. Girvan & Savage, 2010). Esteves et al. (2011), for instance, reported the results of an action research project conducted across two university courses in Portugal and discussed intriguing findings on both students' communication practices and the problems faced engaging with Second Life. Yet their research is, despite its methodology, tutor-centric; focusing on how recommendations for problem-based learning practice can be derived from students' experiences. The experiences of students are contextualised within the journey of the tutors towards a theorised pedagogic model, rather than in their socially situated experience of learning. Put differently, we are seeing an interpretation of the design, implementation,

and ‘effect’ of pedagogy from the perspective of the tutors, using student data as the evaluative measure.

In a similar case, Jarmon et al. (2009) offered an account of the interaction between students and Second Life in a project-based, interdisciplinary course. Nonetheless, the priority of the authors seems to be in establishing the efficacy of project-based, experiential learning in Second Life. Little detail is offered on how Second Life fits into the learning experiences of the students, such as their broader studies, disciplinary learning, or lives at home or on campus. The detail that is offered is immediately contextualised in terms of pedagogy. One example is in Jarmon et al.’s (2009) reporting of several students who opted to continue using Second Life after the conclusion of the course; creating a non-profit body designed to encourage and support others wishing to use Second Life in their work contexts. This decision is characterised by the authors as a positive reflection on the pedagogy of the module, suggesting students were more engaged and the pedagogy had generated possibilities not previously available to students (Jarmon et al., 2009). No analysis is offered on emerging questions about the students’ motivations to take this (unusual) action. Why did they decide to create a non-profit body in Second Life? How did this cohere to their broader social commitments, ideologies, understandings and so forth? In what ways did this extended engagement with Second Life relate, append, or interfere with their studies, family lives, or occupations?

The tendency to view students’ experiences solely through the lens of pedagogy has left a paucity of detail around how Second Life actually figures in students’ lives. Researchers appear enthused by building lists of merits and demerits associated with teaching and learning in Second Life (e.g. Lim, 2009; Warburton, 2009; Dalgarno & Lee, 2010; Duncan et al., 2012). Whilst such exercises are perhaps understandable in the context of pedagogic design, they regularly result in the production of deterministic ‘universal’ pedagogic models that elide the socially situated nature of all virtual world interventions. Iqbal et al. (2010), for instance, reviewed research on learning with virtual worlds and

attempt to formulate a checklist of important pedagogic features. They commented that:

> '...in order to design virtual worlds for engaged learning the virtual world shall be: based on experiential, inquiry-based and project-based learning; shall have features to facilitate socio-collaborative interaction; shall have activities that are authentic and challenging and has tools to carry out those activities; and shall have game based rules to make learning fun' (Iqbal et al., 2010, p. 302)

Accounts such as this promote, at best, a pedagogically deterministic account of learning and, at worst, a technologically deterministic account. Attempts to analyse data and form a 'magic-bullet' or 'recipe' for pedagogic success force the debate around virtual worlds further away from exploring the situational factors of particular applications. Moreover, such accounts imply the irrelevance of influences outside of pedagogy and technology, and of students' perspectives, on the experience of learning with a virtual world. As Pelletier (2009) has observed in the case of digital games, attempts to separate 'form' and 'substance' by deriving obdurate, transportable properties of technologies sustain technological determinism by isolating technologies from the social contexts in which they are engaged. This tendency is characteristic of the larger educational technology field (Pelletier, 2005), of which research on virtual worlds, in this matter at least, appears to be no exception. Nonetheless, it seems implausible, given what Herold has called students' 'pre-existing webs of social commitments' (2012, p. 4), that a productive approach to understanding perspectives could start from a position of either pedagogical or technological determinism, such as that propounded by the 'technopositivist' (Njenga and Fourie, 2010) orientation I have identified in section 2.2.

2.5.4. A narrow focus

Finally, published research has done little to go beyond the 'module' as a unit of analysis: focusing almost exclusively on how students and virtual worlds interact within classes. To return to Jarmon et al.'s (2009) interdisciplinary course, the authors reported a content analysis of students' journal entries regarding the course. When analysing this data they chose to exclude all detail from the journals that they deemed relevant to students' personal lives and the course, but not relevant to their engagement with Second Life (Jarmon et al., 2009). This process of compartmentalising experience is highly problematic. The intersection between elements of a student's life - such as personal commitments, Second Life, study, and occupation – is lost when our analytical vision is initially limited by viewing Second Life, the module, or the individual class as isolated experiences without connection to students' lives generally. As Herold puts it:

> 'Their [students'] engagement with Second Life does not happen in a vacuum, without input from their experiences of their offline lives, and the exact modalities of this engagement need to be looked at in much more detail than has happened so far' (2012, p. 10)

This call towards a more socially aware analysis of virtual world use is echoed both within virtual world research and the broader educational technology field. Bleumers, Maessens and Jacobs (2010) have argued that there is a need to understand data beyond discrete encounters and to consider virtual world's permeation into broader arenas of everyday practice. Similarly, Selwyn (2010) has argued that educational technology generally needs to expand its focus to include the socially situated nature of technologies at individual, institutional, and societal levels. In both cases the authors argue that researchers should consider the influence of factors that did not originate within the module itself, to situate their analyses more holistically, and pay attention to what else matters to students beyond Second Life, a tutor and the module pedagogy.

2.5.5. Conclusions

Emerging from these concerns is the need for research to focus less on pedagogic design as a way of shaping students' perspectives. Several of the problems I have identified stem from this approach. The tendency to draw parallels between digital practices without evidence has taken the place of rigorous investigation of students' practices in particular educational applications of virtual worlds. Similarly, the reliance on Digital Native theory as sufficient for understanding student identity has (ostensibly) alleviated responsibility for investigating nuance in students' relationship with technologies such as virtual worlds. Even the narrow focus on modules or courses can be partially explained as a disregard for extra-modular influences on the assumption that the most influential forces are explainable by intra-module influences (such as pedagogy). I should qualify this contention, however, by noting that the preponderance of single-site case studies and narrowly focused projects is also closely related to the relative availability (or lack of) funding and the willingness of periodicals to publish such work given the scarcity of data available overall. Such factors are products of trends in academia, rather than specific researchers' approaches.

This thesis seeks to present an analysis that moves away from each of the unhelpful tendencies identified in this chapter. The primary tools for achieving a solid conceptual foundation are to be found in methodology, to which we turn momentarily. Specifically, I have sought to avoid presupposing that rudimentary models of the student (e.g. Digital Natives) will offer sufficient explanatory power to understand my participants' perspectives. Additionally, the methodological approach I have taken seeks to draw upon the richness of qualitative data to elaborate the shaping influences on students' perspectives. Attitudinal surveys have not been used in this research project; the aim has been to offer a much more substantial interpretation of perspective than such measures can provide. Finally, the analysis I have employed does not seek to sever the connections to elements not deemed to be located within the module or course, but rather to explore such connections to their fullest and to

understand their nature and relevance. Through offering these methodological moves – described in detail in the following chapter – I aim to avoid the conceptual pitfalls which appear to have inhibited the emergence of a compelling analysis of students' perspectives.

2.6. Chapter summary

This chapter has considered five aspects of the research field that are important to contextualise the research described in this thesis. These five aspects are:

1. The multitude of virtual world definitions and the difficulty in finding consensus on terminology. In this thesis I have chosen to use the term 'virtual world' and omit any value prefixes (e.g. 'immersive') to avoid presupposing elements of students' experiences.
2. The zenith and nadir of academic interest in virtual worlds for educational purposes, in which initial enthusiasm over virtual worlds has subsided whilst research evidence has steadily increased. Interest in virtual world use has, however, predominantly focused on producing pedagogy to effect best results with the technology, leaving a paucity of data on students' perspectives and experiences.
3. The predominant educational trends in the use of virtual worlds, which can be split into three categories: 1) Studying the virtual world (or application of the virtual world) itself, 2) Studying the enactment of disciplinary concepts within the virtual world, and 3) Using the virtual world as an environment to study disciplinary content. The majority of published uses have been within the third category, typified by role-playing and simulation scenarios.
4. Three fundamental issues for understanding students' perspectives emerging from the research literature. These issues were: 1) student identity and the role of the flawed 'Digital Native' archetype in shaping academic debate, 2) the 'learning curve' and the need to consider which aspects of learning to use Second Life are challenging, for whom, and why, and 3) the

need to consider perceptions of purposiveness as influential in shaping students' perspectives.

5. Four concerns with the current research field that this thesis attempts to either address or circumnavigate. These concerns were: 1) lack of methodological sophistication in most research to date, 2) the assumption that practices will transfer unproblematically between digital activities/technologies, 3) predominant use of students' perspectives as data for pedagogic evaluation, rather than of interest in its own right, and 4) the narrow focus of much research to date that has omitted study of extant and extra-modular influences.

In the following chapter I describe in detail the methodological approach adopted. In addition to discussing the philosophical, methodological, and practical facets of the research, this chapter will also deal with my ethical stance and detail the four UK university research sites at which data was collected.

3. Methodology

This chapter will discuss the philosophical, practical, and ethical dimensions of the research described in this thesis. This discussion is divided into five elements:

1. Worldview
2. Methodology
3. Sites, researcher, and participants
4. Data collection
5. Data analysis

Each section is then further sub-divided by various issues that require elaboration. The purpose of this chapter is to both present the final research approach and to illustrate some of the trials, tribulations, and resolutions of the research process. The following section - worldview – begins by articulating my philosophical stance and the conceptual 'tools' that have aided my research approach at a macro-level.

3.1. Worldview

The worldview I have assumed is social constructionist. Numerous variants of social constructionist thinking are offered in the literature, including radical constructionism (Schwandt, 2003), micro and macro constructionism (Burr, 2003), and contextual constructionism (Andrews, 2012). It is not within the purview of this thesis to articulate the epistemological and ontological positioning of variant social constructionisms; for this I recommend Gergen (1985, 1999), Crotty (1998), Burr (2003) or Schwandt's (2003) excellent discussions. Nonetheless, a brief outline of social constructionism will be useful in establishing the ways in which it has influenced my engagement with the research topic, data, and analysis.

Social constructionism argues that knowledge and meaning are derived primarily from relationships between humans and, consequently, that these meanings are not merely reflective of an already-meaningful world (Gergen, 1999). As Gergen puts it:

> 'The terms in which the world is understood are social artifacts, products of historically situated interchanges among people' (Gergen, 1985, p. 267)

The meanings derived from this interplay of relationships are maintained communally; meaning-making in everyday life incorporates a constant process of communal knowledge generation and maintenance (Gergen, 1999; Schwandt, 2003). An important departure from other approaches is the emphasis placed on the construction of meaning from diverse materials, rather than the discovery of meaning or the creation and subsequent application of meaning. There is some debate over the ontological status of this claim (Andrews, 2012), but it is sufficient for this thesis to acknowledge the opacity of statements about the 'reality' of objects given the way in which meaning is constructed. Meaning-making processes are also intimately linked to language, which allows conceptualisations of the world to be formed symbolically and exchanged. Gergen underscored the importance of linguistic exchanges for meaning making: 'descriptions and explanations of the world themselves constitute forms of social action' (1985, p. 268). As such, analysing students' perspectives from a social constructionist stance emphasises that students' articulations of their experiences are a kind of social action of significant interest to understanding how other action within the educational context is shaped.

As meaning is constructed and sustained socially, so are institutions (including educational institutions) and meaning systems in public life. This in turn implies that meaning systems are subject to critique as collective sense-making situated in specific traditions. Such sense-making can be challenged and reinterpreted within alternative traditions or perspectives (Gergen, 1999; Burr, 2003). Individuals position themselves within meaning systems in order to make

sense of the world; their positions can therefore be challenged along similar grounds (Burr, 2003). A social constructionist approach thus counsels us to understand students' perspectives as drawing upon extant meaning systems to situate new meanings and craft new understandings about technologies, actors, environments, topics, and so forth.

I did not begin this project with a social constructionist stance, but rather have 'grown' into it over the course of the research. Some realisations from this movement that have been particularly important are: 1) the researcher is just as much a meaning-making actor as the participants. As a consequence, this thesis is *one possible analysis*, inextricably linked with the social circumstances of its construction; 2) the data available to 'gather' are socially constructed accounts that are reinterpreted, often in ways not originally conceived by participants; and 3) attention to language is crucial to a sophisticated analysis. Since statements are best considered as a kind of social action, an analysis should consider what is being achieved by articulating positions in particular ways. The implications of my philosophical orientation will be evident as this thesis unfolds.

3.1.1. Sensitizing concepts

My worldview has informed which theoretical concepts have shaped the research. The term 'sensitizing concept' was coined by Blumer (1954) to delineate between two modes of relationship between researchers and theory. The first mode - a definitive concept – imparts a theoretical framework into which data may be slotted by a researcher. The second mode – a sensitizing concept – merely provides guidance toward additional understandings of data that may prove fruitful. Sensitizing concepts give:

> '…a general sense of reference and guidance in approaching empirical instances….whereas definitive concepts provide prescriptions of what to see,

> sensitizing concepts merely suggest directions along which to look' (Blumer, 1954, p. 7)

Sensitizing concepts expand rather than limit vision. Since a relationship between researcher and some kind of theory is inevitable (even if it is only culturally situated traditions) the logic of the sensitizing concept provides an antidote to a prescriptive, deductive framework that limits analytic vision. Authors who have influenced my methodological approach have drawn upon this logic, such as Glaser in his notion of 'theoretical sensitivity' (1978). Sensitizing concepts, more so than definitive concepts, serve to fulfil Maclure's vision for theory:

> '…the value of theory lies in its power to get in the way. Theory is needed to block the reproduction of banality, and thereby, hopefully, open new possibilities for thinking and doing' (2010, p. 277)

Acknowledging sensitizing concepts is a useful reflexive exercise as it states openly the major theoretical influences that have shaped my analytic vision. I will briefly outline three concepts that have been particularly influential: 1) situational analysis (Clarke, 2005), 2) transformative learning theory (Mezirow, 1991), and 3) classification (e.g. Bowker & Star, 1999) and discourse (e.g. Mills, 2004). These sensitizing concepts should not be understood as analytical tools crafted at the onset of the study, rather they emerged over time as a result of iterative engagement with the data and the literature (the latter in a broad sense of interdisciplinary theoretical and empirical literature).

3.1.2.1. Situational Analysis

Situational analysis (SA) is a methodological approach developed by Clarke (2005) from Grounded Theory and various other contemporary influences (e.g. Actor-network theory). SA explores situations by '...tracing the practices, ideas, people and things brought together….' (Friese, 2009, p. 370). The situation is a

broad categorisation of linked elements whose involvement in doing *something* can be charted; in this case the use of virtual worlds. I take the situation in SA to be more a conceptual bounding than a temporal, spatial, or ideological one. The situation in which elements are traced (Friese, 2009) is thus a kind of analytical spotlight shone on a particular practice or structure of practices (such as the use of virtual worlds). A key premise I have taken from SA is to look at *all* of the elements present in a situation as relevant. As Clarke puts it:

> 'There is no such thing as 'context.' The conditional elements of the situation need to be specified in the analysis of the situation itself as *they are constitutive of it*, not merely surrounding it or framing it or contributing to it. They *are* it.' (2005, p. 71, italics in original)

In this thesis I use the term 'learning situation' to refer to a conceptual construction of a situation in which virtual worlds are used as learning technologies. Crucially, this construction includes whatever elements its observers (and participants) salient, leading to multiple, potentially competing, conceptualisations.

Although I initially considered SA to be part of the methodological structure of the project, I have used few of the methodological tools Clarke (2005) offered (e.g. positional maps, situational maps); I found the techniques of SA to be less effective than the conceptual premises for SA in guiding my research. Positional maps (Clarke, 2005), for instance, required opposing positions to chart on graph axes, but in practice I found simplifying positions in this way difficult and counterproductive; not least because not all students discussed the same topics in the same depth. I now consider SA to be a sensitizing concept, rather than an aspect of the methodology per se.

3.1.2.2. Transformative learning theory

Transformative learning theory is an approach to understanding adult learning developed by Mezirow (1991). Within the theory, contentions about the ways in which learners make sense of their world within existing meaning structures are of specific interest to this thesis. Mezirow (1991) argues that learners seeking to understand new information use extant meaning frameworks to provide referents for their understanding. These extant frameworks are described by Mezirow as '…the structure of assumptions within which one's past experience assimilates and transforms new experience' (1991, p. 42). This conceptualisation informs my commentary about 'learning' in the learning situation and is evident in chapters 4 and 5, in which the role of previous experiences is examined.

An important caveat is that whilst Mezirow's approach primarily focuses on individual meaning making, social constructionism argues that such meaning making is constituted through dialogue between humans (e.g. Gergen, 1985). As such, when learners enter into meaning making with reference to extant meaning systems, a conceptualisation of HE for instance, they are also entering into a dialogue with all those who have done work defining these meaning systems. Because what Mezirow calls 'meaning schemes' (1991, p. 42) inevitably relate to social defined phenomena (e.g. education, mind, body, language, digital games) they rely on communally maintained meaning systems. Individual meaning making, and thus learning, cannot productively be divorced from the social basis of meaning making. It should be born in mind when reading this thesis that although I discuss deployment of meanings by individuals, these are ultimately a social construct and thus students' perspectives are framed in relation to available social constructions.

Although this thesis is not about learning theory, it has been nonetheless important to chart the conceptual link between learning and the epistemological framework of social constructionism.

3.1.2.3. Classification and discourse

Classification is the act of systematised delineation. A classification system, described by Bowker and Star, is '...a set of boxes, metaphorical or not, into which things can be put in order to do some kind of work' (1996, p. 197). Classification is thus a way of thinking about how people divide up their lives and which technical and social arrangements are implicated in these divisions (see Bowker & Star, 1999). Discourse, in at least one of its forms, can '…be detected because of the systematicity of the ideas, opinions, concepts, ways of thinking and behaving which are formed within a particular context, and because of the effects of those ways of thinking and behaving' (Mills, 2004, p. 15). Discourses are systematised ways of conceiving and articulating *something* and, as a consequence, acting on *something* (see, for example, Burr, 2003; Mills, 2004). Discourses are therefore meaning systems that give rise to action.

Classification and discourse are influential in the way I have elaborated upon the elements 'that matter' (Clarke, 2005) within the learning situation. When students' have made claims about the position of Second Life within particular domains, such as education, I have sought to examine the ways in which these domains are constructed, delineated from other domains, and the consequence of situating Second Life within one or other space. As such, I have been mindful of the ways in which classifications are achieved and, to some degree, maintained, and the ways in which these meaning structures enable or constrain particular forms of representation. These foci follow the definitions of classification and discourse above and examine the social constructionist concern with the way in which positioning through language works to define reality (Gergen, 1985, 1999; Burr, 2003).

3.1.2.4. Other concepts

It is also important to recognise that many analytically influential concepts are inherited or socialised, rather than overtly chosen. These include cultural traditions, raced or classed viewpoints, and even traditions of enquiry (e.g.

qualitative, social constructionist and so forth). Whilst these are not sensitizing concepts in the sense I take Blumer (1954) to mean, culturally specific assumptions may nonetheless be overlaid onto the data. I have not found any examples of raced, classed, or gendered assumptions that are challenged (or supported) within the data, but certainly the shift from working within a primarily positivist/post-positivist approach during my previous studies toward a social constructionist paradigm within this research has altered where I look for, and what I find in, data.

Sensitizing concepts provide tools for viewing the data in new ways, for informing and challenging specific interpretations; including both commonsensical (folk) understanding and extant theoretical models within the literature. These philosophical issues should be born in mind as the conceptual underpinnings and practical arrangements of the research are outlined. In the next section, the first element of these arrangements is discussed: the project methodology.

3.2. Methodology

Establishing a theoretical and practical framework for inquiry has been one of my personal journeys within the doctorate, the subject of much tension and labour. The field of virtual world use in education had little history of sustained and methodologically theorised scholarship during the early stages of this project (i.e. 2009) and flexibility in approaching the field has been required to recognise and accommodate new research challenges. The methodology that has emerged, and that I am largely satisfied with, is not an adoption from a textbook but an assemblage of meaningful components (Law, 2004). I distinguish between methodology – the research approach – and methods: the techniques for collecting data. It is the former that is the subject of this section; the latter will be the topic of a proceeding section (3.4. Data collection).

3.2.1. Pre-methodology

The CURLIEW project, including my doctoral research, was initially conceived as Participatory Action Research (PAR). During the process of doctoral study I elected to move away from the PAR methodology toward an approach broadly based on Grounded Theory (GT). It is useful at this point to briefly outline Action Research (AR) and PAR and the concerns that precipitated my decision to adopt another methodology.

Action Research (AR) is a cyclical approach in which researchers work with participants as co-authors of a project designed to analyse and derive a practical response to a salient issue in participants' lives (Ray et al., 2004). AR can be divided into broad two categories: reflective practice and critical theory/praxis (Cohen, Manion, & Morrison, 2007; Cousin, 2009). PAR falls into the latter category, concerned with issues of critical praxis; representation, voice, and emancipation (Kemmis & McTaggart, 2005; Ayala, 2009). PAR is influenced by critical theory (e.g. Freire, 1996) and feminist scholarship (e.g. Torre & Ayala, 2009) that emphasises the political and powerful status of knowledge. In PAR projects, therefore, the focus is frequently upon raising awareness, understanding marginalised positions, and taking consensual action to improve these positions (e.g. Garwick & Auger, 2003). Although the exact content of the AR cyclical approach is contested, most contemporary versions tend to include several broad 'phases' (see Kemmis & McTaggart, 2005; Cohen et al., 2007; Cousin, 2009). A relatively apolitical depiction of these stages would be to begin with a 'diagnostic' phase, move to a 'planning' phase, take 'action' based on plans, and 'reflect' on the results and process (see McNiff, Lomax, & Whitehead, 1996; McIntyre, 2008; Cousin, 2009). In all versions of the action cycle the emphasis is on collaborative process and the relationship between researchers and participants, and within participant groups, is paramount (McIntyre, Chatzopoulos, Politi, & Roz, 2007).

As the research progressed three problems with PAR became evident. Firstly, engaging with research sites (discussed in section 3.3) involved layers of

gatekeepers and preparatory meetings prior to recruiting student participants. By January 2010 I noted that my student-centred AR project had failed to secure a means of involving students in the research design and enactment; far more 'action' was taking place between the researcher and gatekeepers than with students. This problem was exacerbated by the second concern; lack of opportunity for iterative AR cycles in the field work. Student participants were involved in the virtual world learning situation only once; none of the research sites had a second iteration in a subsequent year that involved the same cohort. Diagnosing, planning, acting, and reflecting iteratively within a single university module (particularly without entirely disrupting the module itself) was impractical. It is noteworthy that almost all AR projects are conducted with participants on issues endemic within their lives: healthcare (Garwick & Auger, 2003), self-identity (McIntyre et al., 2007), aspirations (Bland & Atweh, 2007), and so forth. The use of a virtual world as a learning technology was not widespread within the lives of the participants, but rather an isolated incident. My third concern with AR arose from a sense of disquiet with the epistemic and methodological aims of the approach. As chapter 2 highlighted, the core 'problem' with the research field at the onset of my project was chronic lack of data and sophisticated analysis. AR methodology offered no redress to this problem, but rather was primarily concerned with examining and taking action on ideological issues. It was conceptually flawed to approach the research situation aiming to change practice when neither the 'situation' nor the experience of 'practice' was well understood.

As such, I decided to shift the methodological grounds of the project away from AR and toward a new approach that could better conceptualise and interpret perspectives without being shackled to an agenda of action that, as yet, had no basis. This process led me to a Grounded Theory approach. In the following sections, the Grounded Theory approach that shaped my research methodology is articulated.

3.2.2. Grounded Theory

Within research on the educational use of virtual worlds there have been several applications of GT principles and practices in recent years. Oliver and Carr (2009), Peachey (2010), and Rogers (2011), for instance, acknowledge the influence of GT in their research approach. Despite its exclusion from texts concerned with researching virtual worlds (e.g. Savin-Baden, Gourlay, & Tombs, 2010), GT remains an overt presence in the field. Like Peachey (2010) and Oliver and Carr (2009), I draw elements from GT in order to most effectively frame my research. I do not employ a faithful reproduction of GT in either the 'original' format (i.e. Glaser & Strauss, 1967), nor in strict adherence to its contemporary descendants (e.g. Corbin & Strauss, 2008). Instead I have developed a methodology *based* on GT, rather than one that *is* GT. I have, in the spirit of the bricoleur (Denzin & Lincoln, 1998), taken from GT that which fits with my epistemology and research aims, and remodelled or replaced that which does not. It may also become obvious momentarily that offering a 'faithful' reproduction of GT would be impossible: a brief foray into the origins and evolution of the methodology is required to explain this.

Grounded Theory has a rich and diverse history as a research method. Since its recognition as a research approach in the 1960's (Glaser & Strauss, 1967), the epistemological and methodological foundations of GT have undergone a process of continual transformation. There is no unified concept of GT (Dey, 2008; Morse, 2009), nor is there agreement over the validity of the transformations that have taken place[6]. Numerous authors have reflected upon the definitions, merits, and demerits of the various GT approaches currently theorised (e.g. Annells, 1996; Heath & Cowley, 2004; Morse, 2009). Others have explicitly carved out new spaces in which GT can exist, drawing upon understandings of social inquiry made prominent in the half-century since Glaser and Strauss' (1967) seminal publication. Several of the most energising and intriguing of these developments include the epistemic 'turn' toward

[6] The somewhat ill-tempered exchange between Glaser (2002) and Bryant (2003) regarding Charmaz's constructivist GT (e.g. 2000, 2006, 2009) is a testament to this protracted methodological debate.

constructed knowledge (e.g. Charmaz, 2006; Corbin & Strauss, 2008; Corbin, 2009), the emphasis upon discourse, the nonhuman, and situated knowledge (e.g. Clarke, 2005; Friese, 2009), and the potential for GT to coalesce with other forms of knowing, such as feminist inquiry (Clarke, 2005; Plummer & Young, 2010) and indigenous wisdom (Denzin, 2007). In spite of attempts to affirm the existence of only a single 'authentic' GT approach (Glaser & Holton, 2004), the methodology continues to evolve. Similarly, I do not accept attempts to hive off new approaches to GT from the 'corpus' of GT methodology (Thomas & James, 2006). It is because GT vocabularies are highly portable[7] that they draw in researchers from numerous ontological, epistemological, methodological, and political persuasions. Consequently, substantive critical development within the approach has occurred under the direction of those who *consider themselves* to be doing GT (Clarke, 2005; Charmaz, 2006; Bryant & Charmaz, 2007; Corbin & Strauss, 2008), whether or not others (e.g. Thomas & James, 2006) concur with this categorisation.

The current research project has been most influenced by Constructivist Grounded Theory (Charmaz, 2006, 2009). Whilst Strauss and Corbin's GT (e.g. 1998) has been positioned as post-positivist (Denzin, 2007), Constructivist Grounded Theory (CGT) pushes the methodology towards a socially constructed worldview. As Charmaz puts it:

> 'The constructivist turn in grounded theory takes what is "real" as problematic....We go back to look at the multiple definitions of a given reality and how people enact that reality – in tacit as well as overt ways. We also see our views of their views and actions as problematic...' (2009, p. 142)

The focus of inquiry in CGT is on exploring the socially constructed worlds of participants. Following this, notions such as the basic social process (Glaser,

[7] Glaser (2009) contests that this portability of 'jargon' is one of the primary precipitating factors in the remodelling of GT into non-GT. Whilst this may be true, I do not share Glaser's disregard for any refiguring of this vocabulary and, by extension, his conclusion that it is necessarily a deleterious process.

1978) and finding root explanatory causes of experience cannot be achieved unless they are interpreted as a facet of socially constructed knowledge structures. CGT is, amongst current GT approaches, most congruent with my philosophical stance and, indeed, constructionism has been argued to be the most coherent epistemological framing for GT generally (Madill, Jordan, & Shirley, 2000). Andrews (2012) has argued that 'constructivist' is deployed within GT as a general term that has subsumed psychological constructivist and social constructionist approaches. In this research I offer a more 'constructionist' than 'constructivist' version of CGT, although, given Andrews' comments, the distinction does not have immediate impact on the methodological outline of CGT offered below.

The aim of CGT is to collect and analyse data in order to make conceptual links between socially constructed accounts of experience. Such links may represent convergences and divergences in perspective or specific processes that appear influential in shaping experience. They will never represent a common, structuring world underpinning participants' experiences since the ontology of CGT is non-realist (Charmaz, 2009). CGT is non-prescriptive regarding data collection, as indeed is GT more generally. Glaser has suggested that 'all is data' (e.g. Glaser & Holton, 2004), arguing that GT is transcendent of data type (qualitative/quantitative) and certainly should not be considered singularly a qualitative data analysis strategy. Nonetheless, the majority of GT theorists engage in qualitative data collection (e.g. Baszanger, 1997; Charmaz, 1997) and I too have employed GT in this fashion; seeking rich, qualitative data that might inform my research question. I take from CGT general precepts about the purpose of enquiry (to generate theory), the type of data to focus on collecting (rich, detailed data), and a toolkit of analytical techniques (discussed in section 3.5). This loose framework for the research gives some cohesion whilst still allowing adequate flexibility to respond to local contexts at research sites.

CGT, like other forms of GT, suggests the application of an inductive-deductive loop in order to both collect and analyse data (Charmaz, 2006; Dey, 2008).

Crucial to this iterative process is the rejection of a priori theoretical frameworks for structuring the data collection and analysis (Glaser & Strauss, 1967; Charmaz, 2006; Corbin & Strauss, 2008). The application of extant theoretical models is deemed inappropriate because such understandings do not arise from the situations under study, but rather are imposed upon them as a method of stratifying the data into already recognisable categories. Various extant theoretical approaches have purchase within educational research on virtual world use. In chapter 2, I discussed the deleterious effect of Digital Native theory (Prensky, 2001a, 2001b) on understanding students' identities and motivations within virtual world learning situations. The TAM has been another common approach to understanding research data within this field (e.g. Shen & Eder, 2009; Chow et al., 2012). So too have other extant theoretical models been applied, such as the 5-stage e-moderating model (Salmon, 2003) used by Edirisingha et al. (2009) or the Communities of Inquiry framework (Garrison, Anderson, & Archer, 1999) by Burgess et al. (2010). In addition to these model-oriented approaches, there are several broader theoretical movements that have influenced virtual world research, including communities of practice (Oliver and Carr, 2009), Freudian psychoanalytic theory (Bayne, 2008b), Deleuzian poststructuralist philosophy (Hickey-Moody and Wood, 2008), and new literacy studies (Merchant, 2009).

Whilst GT makes no claim that such models or lenses are incorrect or cannot provide useful insights, it insists that a sophisticated analysis must begin in an understanding of the research data and not in extant theoretical approaches (e.g. Glaser & Strauss, 1967; Charmaz, 2006). Ashwin (2012) has argued a similar case of HE research specifically. Through analysis of papers published in prominent HE research journals Ashwin demonstrates that the dominant mode of theory building is to conceptualise the 'research object' and 'meaning of outcome[s]' (2012, p. 951) using the same theoretical lens, giving rise to a potential problem of circular-theorising. Ashwin does not argue, as Glaser and Strauss (1967) have, for an a-theoretical approach to the data, but rather the conceptualisation of the research object(s) to guide the inquiry and an analytic

approach that gives rise to the possibility for a gap to emerge between the outcomes of the data analysis and the initial conceptualisation of the research object. Put differently - and using an example from those theories listed above - we should not conceptualise students' perspectives of virtual worlds in terms of communities of practice, analyse the data through communities of practice concepts, and then reflect on whether or not the data adheres to communities of practice. I have not begun with an outlined conceptual framework, but rather have made connections with extant theoretical perspectives predominately through my discussion of the GT analysis in chapters 6 and 7. I remain convinced that sensitizing concepts (Blumer, 1954) are valuable conceptual tools in much the same vein as Ashwin (2012) has argued (if in slightly different terminology), and have thus outlined these concepts in 3.1.1. My argument for this approach is best explained as part of a wider discussion of departures from GT methodology made within my research.

3.2.3 Key departures

I have discussed my worldview and the epistemological contentions of CGT in the preceding sections. Further discussion on the epistemological controversies in GT can be found in Clarke (2005), Bryant and Charmaz (2007), Corbin (2009), and Mills, Bonner, and Frances (2007). Three additional issues require discussion in the context of the current thesis: the position of the literature review, the role of researcher reflexivity, and the meaning of 'grounded' in Grounded Theory.

3.2.3.1. Literature review practices

Since its inception, GT has exhibited a stiff resistance to the practice of literature review. In *The Discovery of Grounded Theory*, Glaser and Strauss urge researchers '….literally to ignore the literature of theory and fact on the area under study' (1967, p. 37) until the analysis of data is well underway. Whilst a great many aspects of GT have evolved, attitudes to the literature

review have remained generally averse. Corbin and Strauss (2008) advise students of GT to forego any attempt at an exhaustive literature review before the research project. Charmaz (2006) similarly advises that a literature review may be delayed until the analysis has begun. The premises for postponing the literature review are well documented in GT texts (e.g. Glaser & Strauss, 1967; Strauss & Corbin, 1998), and the logic of this practice is effectively summed up by Charmaz:

> 'The intended purpose of delaying the literature review is to avoid importing preconceived ideas and imposing them on your work. Delaying the review encourages you to articulate your ideas' (2006, p. 165)

Although delaying the literature review is congruent with GT's resistance to a priori theoretical models, practical and reflexive problems quickly emerge when considering the underpinning assumptions of this practice. Several contradictions in the relationship between GT and literature have been noted and critiqued by those involved with the approach (e.g. Clarke, 2005; Lempert, 2007; Dey, 2008), yet proponents of 'classic' Grounded Theory maintain the ambivalence towards the literature (Glaser & Holton, 2004) that has come to characterise the approach more broadly. I believe this position to be largely untenable and concur with Clarke (2005) that it is indicative of a lack of reflexivity within elements of the GT tradition. I will briefly set out the arguments against the classic GT position.

Although there appears to be a potential theoretical basis for delaying engagement with the literature, it is rarely possible to follow this approach in practice. All project proposals require the proposer to demonstrate knowledge of the field that can be gleaned only from scholarly and professional literature (Barbour, 2001; Charmaz, 2006). Without a concession to literature reviewing for the purpose of satisfying funders, it is unlikely that any project will be supported. Moreover, I agree with Lempert (2007) that in order to undertake research it is essential to understand the conversation into which one is

entering. It is rarely appropriate to collect and analyse data without some knowledge of the key debates and practical concerns currently being considered within a topic. I find Charmaz's (2006) suggestion that, for the sake of acquiring funding, an initial literature review should be conducted and then discontinued to be more worrying still. Partial reviews based on the logic of performativity, rather than scholarly reviews seeking to inform a research approach, seem to carry the hazard of assimilating uncritical perspectives. We have seen in educational technology how uncritical reference to theories such as Digital Natives can negatively influence research (e.g. Duffy & Penfold, 2010).

It is also ambiguous from where theoretical sensitivity (Glaser, 1978) can originate when literature is perceived as an invalid scholarly resource in the formulation of research. Perspectives espoused by leading practitioners of GT are inconsistent on this issue. Charmaz (2006) argues against substantive engagement with the literature throughout the project, yet positions researcher background as a valid source of theoretical sensitivity:

> 'My guiding interests led to bringing concepts such as self-concept, identity, and duration into the study. But that was only the start. I used those concepts as points of departure to form interview questions, to look at data, to listen to interviewees, and to think analytically about the data' (2006, p. 17)

The notion of 'guiding interests' allows the researcher to circumvent accounting for where, and from what, such interests are developed. In reality, such understandings inevitably come from extant texts and experiences; professional background, published scholarly work, theoretical positions in academic texts, personal experiences, and so forth. The dilemma that arises is one of valid and invalid sources of theoretical sensitivity in which distinctions can become increasingly troublesome. Publications read several years ago count as part of 'guiding interests', but contemporary publications are a literature review. Theoretical frameworks are not be to applied a priori; however, 'bringing

concepts' of identity or duration is evidently not to be considered a type of theoretical framework. In sum, the divisions are ambiguous at best; arbitrary at worst.

For these reasons, I have found it neither practicable nor desirable to neglect the published literature. Instead I have followed Clarke's (2005) advice to make full use of the literature as a source of information in framing my research. This has involved examining contemporaneous empirical and conceptual discussion of virtual world use (see 2. Context of virtual world use), in addition to exploring interdisciplinary theoretical perspectives in order to expand my conceptual tools for understanding the data. I have thus been mindful of using literature toward developing sensitizing, rather than definitive, concepts, but I am yet to find a compelling argument for recalcitrance toward the literature review that cannot be refuted by Dey's (2008) oft cited maxim that an open mind is not the same as an empty head.

3.2.3.2. Role of researcher reflexivity

Lack of researcher reflexivity is another criticism levelled at GT; particularly 'classic' GT (e.g. Glaser, 1992). Elements of GT research have refused to acknowledge the researcher as a co-constructor of data and, following this, insisted that a researcher may enter the scene as a neutral instrument (Glaser, 2002; Glaser & Holton, 2004). As Thomas and James (2006) observe, the seminal work on GT used the term 'discovery'; implying a researcher unearthed pre-existent meaning. Interestingly, the recent accounts that adhere most closely to this ethos seem to arise from research methods anthologies (e.g. Sarantakos, 2005), rather than GT texts published in the last 10-15 years. Even some classic GT practitioners have recently distanced themselves from the notion of the objective researcher (Stern, 2009). This leads to the possibility that it is primarily representations of GT, and not GT itself, which remain allied to the objective researcher. Following this, it is similarly interesting that Thomas and

James (2006), in their otherwise excellent and thorough critique of GT, do not use any examples of GT projects; only methodological texts.

Nonetheless, recognition that the researcher is an involved participant is paramount to any qualitative research. Not only am I author of the data analysis, but also a co-constructor of the data in situ through my participation in interviews, observation and so forth. This participation is never apolitical; it is framed by the researcher's socially constructed worldview. As Charmaz puts it: 'By claiming a value-free stance, objectivists eliminate problematic messiness inherent in inquiry rather than eradicating their preconceptions' (2009, p. 142). I have articulated my worldview generally in section 3.1 and I discuss the practical elements of positionality within section 3.3.

The procedure of GT analysis has been criticised for being the embodiment of the objective researcher myth; both Charmaz (2006, 2009) and Clarke (2005) have noted that rigid procedure can offer the illusion of 'coding out' researcher subjectivity. Yet the analysis is always conditional upon researcher subjectivity; no amount of rules mongering will allow objective generalisation (Charmaz, 2009). Whilst preventing the 'forcing' of data (discussed in section 3.2.3.1) into preconceived categories is important, it is ill-served by eliding researcher positionality. Corbin and Strauss have identified this faulty logic in classic GT:

> 'Forcing (Glaser, 1992) the researcher's ideas on data is more likely to happen when the researcher ignores the relevance of self in the interpretation process…..the more we are aware of the subjectivity involved in data analysis, the more likely we are to see how we are influencing interpretations' (2008, p. 33)

I have taken several steps to address this concern. During the fieldwork I kept a reflective diary for the dual purpose of continually acknowledging my role within the research and keeping track of important analytic, methodological, or practical issues. I have also attempted to be forthright about the influence of

theory and ideas from places other than the collected data; see ‘3.1.2. sensitizing concepts’. Additionally, I have been in continuous engagement with my doctoral supervisors (and other researchers within the university and beyond) who, as part of a research community, have critiqued my thinking and reasoning.

3.2.3.3. The ‘grounding’ of theory

Finally, a brief clarification on the philosophical issue of ‘grounding’ is needed. Thomas and James (2006) have presented a compelling case for researchers to be suspicious of claims to ‘ground’ analysis. In their deconstruction of GT, Thomas and James (2006) asserted that the concept of ground is a familiar nonsense and that moving beyond researcher subjectivity to an unspecified elsewhere would result in little more than reportage. Whilst Thomas and James’ criticism captures a broader discussion on the foundations of knowledge in social research (Crotty, 1998; Madill et al., 2000; Schwandt, 2003), I do not agree with their conclusion that GT is fatally flawed.

Thomas and James (2006) have argued that the ‘grounding’ of GT requires a commitment to ontological realism (or at least critical realism), but I do not believe this is the only, nor the most useful, interpretation of the term ‘grounded’. As Madill et al. (2000) have observed, different approaches to GT resolve the epistemological basis of ‘grounding’ in different ways. Constructivist approaches (of various types) to GT have tended to argue that the ‘grounding’ being discussed is of the interpretation in the data, not of pre-existing meaning in an ontologically realist world (e.g. Charmaz, 2009). I also follow this line of argument, interpreting the core tenet of GT to be ‘stick close to the data’ and, consequently, suggesting that my research is grounded in the participants’ socially constructed, linguistically represented realities. This notion of grounding does not write my interpretation out of the research, indeed it is this very interpretation that is being considered. There is significant practical and theoretical difference between approaching a research project with the intention

to perform an activity-theory analysis of students' perspectives (for instance), as opposed to a loose guiding question and equating data to theory as it becomes evident that there is resonance. It is to this distinction that I take the 'grounded' in 'Grounded Theory' to be alluding.

3.3. Research sites and participants

In this section I will set out data access considerations and the data corpus for the research. These issues are subdivided into four elements: gatekeepers and access, research sites, participants, and researcher role. The specific data collection methods used in the project (interviews, focus groups, and observation) are detailed in the following section; 3.4 Data collection.

3.3.2. Gatekeepers and access

Potential research sites were initially identified through current literature (e.g. Kirriemuir 2009) and word of mouth. The primary criteria of this search were that the site must currently be using a virtual world in teaching and learning and must be UK based. This process occurred with input across the project team and it is thus clearer if I describe the entire CURLIEW team effort, with the reader's understanding that my doctoral research has been part of these data access arrangements.

Staff members at possible research sites were approached officially by the project research fellow on behalf of the CURLIEW project. Those who responded affirmatively to participation were offered an initial meeting and/or a lengthier email exchange to determine the nature of research involvement. Initially, research sites were considered for all three PhD projects situated within CURLIEW. Research sites selected for each PhD project were determined partly on basis of a spread of disciplines and geographic locations, and partly on data available and fit with project methodology. Some research site attrition also necessitated additional recruitment or renegotiation with sites that originally

were not planned to be part of the main corpus of data collection. Once a decision had been reached as to which project a particular site would be part of, the process of 'managing' the site (i.e. setting up research meetings) was handed over to the PhD student for the remainder of the engagement.

The macro-level approach by the project research fellow served the fundamental purpose of identifying gatekeepers at research sites. As I assumed control of engaging with sites, I coordinated my research methods primarily with these gatekeepers; adapting and redesigning methods for the local contexts. Staff gatekeepers were involved at all sites, although the extent to which they mediated student participation and contributed to the design of the data collection differed. In one instance students were contacted and interviews arranged entirely by site staff ('Kirkhampton', see 3.3.3. below). At a different research site ('Chelby', see 3.3.3. below) I sought the module tutor's permission to set up interviews, but this was the extent of their involvement in that facet of data collection[8]. Despite the inter-site differences, all staff members acted as institutional gatekeepers for student participants in some way.

At participant level no intra-group sampling strategy was applied; all students involved at the research sites were approached about participation. The process of approaching students differed between sites, but most commonly I enquired either in person or by email as to whether a student would be willing to participate in the research. An overview of the research project was offered to better inform potential participants (see Appendix 1). Although securing participation in observation was somewhat less straightforward (see section 3.4), the premise of engagement remained constant: I offered participation to any student at the research site. No students refused to be observed and no one has chosen to withdraw their research data from the project.

3.3.3. Research sites

[8] The tutor at this site (Chelby) was more extensively involved in my participant observation arrangements and I worked in close contact with them during the module to manage issues around participation and consent in the observational process.

Four UK universities were involved in the research from autumn 2009 until winter 2010. Each research site was a specific module, or, in one case, two modules with overlapping staff, involving a group of student and staff actors. As a consequence, there are four research sites, four disciplinary areas, and *five* modules involved in the research. Each site was assigned a pseudonym, shown in Table 2:

Research site	Institution type	Disciplinary area
Lymford (LY)	Pre-1992	Geographical information science (GIS)
Kirkhampton (K)	Pre-1992	Multimedia Production
Chelby (C)	Post-1992	Information science
Leebridge (LE)	Pre-1992	Theatre

Table 2: Research sites and disciplinary areas

The sites are based in four distinct regions of the UK. I have not offered more detailed institutional information because virtual worlds research in UK HE is a relatively tight-knit area and researchers tend to be aware of colleagues at other universities, facilitated by research publications such as the Virtual World Watch Snapshot (e.g. Kirriemuir, 2009). It would therefore be detrimental to site anonymity to give regional locations to specific sites. The other demographic divisions I have offered, discipline and institution type, are to offer general details about the sites. This thesis is not primarily concerned with organisational factors and, as such, I did not seek to collect data about the organisational culture of the universities involved. As will become evident later in the thesis (particularly in chapter 6 and 7), organisational factors at sites, such as the disciplinary framing of a degree programme, may be influential and salient to students' perspectives. Greater focus on understanding and charting these factors would therefore be advisable for future research.

The concept of the field site has been problematised both within virtual world research (Boellstorff, 2010) and within ethnographic study more generally

(Marcus, 1995). I have not found the bounding of research sites to be particularly troublesome within this research project, but it is nonetheless useful to briefly articulate my stance. In this research I follow the 'virtual/actual' (Boellstorff, 2010) mode of engagement and take my research sites to be the physical institutions and courses into which the use of VWs has been embedded. Like previous educational researchers (e.g. Edirisingha et al., 2009; Thomassen & Rive, 2010), I am interested in the interplay of the physical and the virtual bounded within a specific context and it is at the point where virtual and 'actual' (physical) meet that I am particularly focusing my attention. It is also worth briefly disentangling 'situation' and 'site'. The term 'research sites' is used purely as methodological shorthand to describe a particular group of participants, on a particular degree programme, at a particular place and time, unlike the term 'learning situation' discussion in section 3.1.2.1.

3.3.4. Sites overview

Lymford (LY) is a pre-1992 institution. The two modules 'Geography 1' and 'Geography 2' both used Second Life for demonstrating the potential relevance of virtual world technology to geographic disciplines: particularly Geographical Information Systems (GIS). The discussion of virtual worlds was embedded within a larger programme of contemporary techniques and research in geographical disciplines and was not assessed directly, but as part of this broader context. Geography 1 was an optional module for level three undergraduate students and an optional module for taught postgraduate students. Geography 2 was mandatory for the taught postgraduate students and an optional module for level three undergraduate students. Within each module I co-taught a practical session introducing virtual worlds with the module tutor. This practical session included a brief introduction to virtual world technology, instructions for the workshop, and a freeform and exploratory lab session in which students entered Second Life. All participating students were part of the geography school and enrolled on taught geography programmes (undergraduate or postgraduate).

Kirkhampton (K) is a pre-1992 institution. In the module 'Multimedia 1', students used Second Life in a group project about multimedia authoring tools. The project involved constructing a Second Life replica of a physical campus building and subsequently using screen capture and DVD authoring tools to create a brief video tour of the virtualised building. The project lasted seven weeks; including a lab tutorial facilitated by the module tutors and self-directed study. The project was a module summative assessment and included a peer marking element. Four members of one project group and two members of other project groups (i.e. members of 3 different groups in total) participated in the research. One student was studying an undergraduate business degree; the remaining five were studying multimedia (computing) degrees.

Chelby (C) is a post-1992 institution. The module 'virtual worlds introduction' used numerous virtual world platforms, most extensively Second Life, to explore the history, culture, and applications of virtual worlds. Classes were delivered by distance learning through synchronous weekly sessions in virtual worlds, supplemented by self-directed study. The module was interdisciplinary; however, it was situated within the computing school. Discussion with the module tutor mapped the module onto 'information science' as a broadly representative subject area. The module cohort was varied, consisting of part-time computing students, staff members at Chelby, and one student who was studying only the virtual worlds introduction module. I joined the module as a participant-observer in week three and participated until its conclusion seven weeks later. There were no physical world class meetings and thus students did not meet in person, with the exception of those who participated in interviews meeting me.

Leebridge (LE) is a pre-1992 institution. The module 'Theatre 2' explored theoretical perspectives and practical uses of new media in activist theatre. Second Life was used for creating and implementing a group performance linked to a specific social agenda, e.g. awareness of domestic violence. The

module was campus based and a guest tutor travelled from another institution to teach Second Life skills such as building content and animating avatars. Theatre 2 was offered as an optional module for students studying undergraduate theatre degrees and followed from another module, Theatre 1, which did not use virtual worlds. I interviewed one student from the 2009/2010 cohort, subsequently joined the module as an observer for two workshop sessions in the 2010/2011 iteration, and finally interviewed two more students from the 2010/2011 cohort. The first class session was a scheduled workshop/lab session on use of gestures and creation of animations in Second Life. The second class was an optional session in which students divided into groups and developed a short performance, drawing on various Second Life skills from previous tutorials. These tutorials were the final expert-led seminars on the module; the assessed performance was due approximately one month later (January, 2011). Students who participated in the research were thus approximately midway through their involvement in the module.

3.3.5. Participants

Forty students contributed data to the research. Of those forty students:

- 8 were uniquely interviewees
- 7 were uniquely focus group participants
- 13 were uniquely observation participants
- 6 took part in both interviews and focus groups
- 6 took part in both interviews and observation

All participants were students currently studying or recently having finished a university module that employed virtual worlds as part of the pedagogy. Participants were recruited on a voluntary basis and thus the numbers of students participating differed between sites. Table 3 delineates participants by research site:

Research site	Module	Method (no. participants)
Lymford	Geography 1 and 2	Focus groups (13), interviews (7)
Chelby	Virtual Worlds introduction	Observation (7), interviews (4)
Kirkhampton	Multimedia	Interviews (6)
Leebridge	Theatre 2	Observation (12), interviews (2)

Table 3: Research participants by site and data collection method

A total of 24 male and 16 female students participated in the research, of which 5 female and 15 male volunteered to be interviewed. The majority of participants were home (UK) students (28), with two recorded international students (from Nigeria and Germany). Both full-time (13) and part-time (14) students were present in the research, in addition to both campus-based (33) and distance (7) learners. Only two students indicated they had used a virtual world previously for an extended period of time; a mature, non-degree programme student at Chelby and a mature, part-time student at Kirkhampton. Several other students had used virtual worlds such as Second Life or PlayStation Home briefly (e.g. for an hour), and/or had heard of virtual worlds through media publicity. No participants indicated they had ever used virtual worlds as a learning technology prior to the research engagement. All of the participants interviewed were regular internet users. Most participants also indicated they were involved in social networking sites (e.g. Facebook), although the frequency and function of internet use varied widely where data was available. Participants were not asked their age prior to engaging with the research; however, the age of those interviewed ranged from early-twenties to early sixties.

It may be evident from the demographics above that not all of the participants are included (e.g. 13 +14 ≠ 40). Whilst basic demographics were relatively simple to collect for interview participants, observations of classes did not offer space to ascertain who (if anyone) was home or internationally based, full time or part time, and so forth. I did not want to make assumptions based upon crude generalisations (e.g. all mature students are part-time, all students with non-

English accents are international students) and thus have left these elements of data missing.

Early in the field work I did not feel that life history or practices data, such as educational background or technology use, would provide substantive benefit in understanding perspectives over simply listening closely to the students' accounts. I was mindful of a guiding comment from Glaser (1978) that demographic and sociological factors such as gender, age, education and so forth, should not be assumed to automatically influence the data. Although I am sceptical about concepts 'earning' their way into theory[9], I do accept that it is alluringly easy to make *prima facie* theory of superficial fit that relies on demographics: the 'Digital Native' theory (Prensky, 2001a) appears to be one example. As I subsequently began to analyse the research data I realised that this initial posture had been too severe and without certain basic information about participants I was struggling to put their comments into context. In summer/autumn 2010 I attempted to remedy this by sending out a short survey (see

[9] The dialogue between Clarke and other grounded theorists in Morse et al. (2009) is particularly useful in critiquing 'earning' entry into theory. Paraphrased, Clarke argues that researchers abdicate responsibility if they refuse to acknowledge that some issues – such as gender politics, sexuality, race, and oppressive practices – may be either too culturally ingrained or sensitive to find their way into open discourse (Morse et al. 2009). Either researchers find a manner of explicating these silences (see Clarke, 2005) or they will never 'earn' their way into analytical work.

Appendix 2) with all interview transcripts returned for approval, and also to participants to whom a transcript had already been sent. The response rate for the survey was not high (13 out of 40), underscoring the need to collect demographic data immediately when not planning a longer-term engagement with participants. To aid in offsetting this lack of biographical data, I have attempted to make no assumptions about participants' practices when I do not have any discussion of these practices on which to base a statement. It is clear from the Geography 2 focus group, for instance, that many Lymford participants played computer games, but I have not assumed this is universally the case, nor what kinds of computer games (and played in what ways) without further data discussing these topics (e.g. statements in a focus group or interview). Additionally, demographic information is predominantly missing from observation sessions and so I have sought to make analytical statements about participants' actions within observed sessions, rather than attempting to infer their previous practices or perspectives from these actions.

In addition to student participants, eleven research site staff also participated in the planning and implementation of the project. There are several significant ways in which staff members contributed data to the project, including as focus group members, tutors in classes being observed, and as collaborators in designing method to fit local contexts of the sites. Like the researcher, staff are actors in the research situations and exert influence on perspectives that is varyingly highly visible or mostly unmentioned. The role of the researcher is discussed below.

3.3.6. Researcher role(s)

The position of the researcher is one that is problematised in almost all forms of qualitative inquiry and non-positivist epistemology (e.g. Haraway, 1988). Whilst it would be impractical to revisit this rich history of the researcher, there are several issues within the current research that require comment in order to establish my own researcher role. I use the terms role and position as

synonyms here. Despite this, I recognise that positional frameworks do not simply include the practices adopted at the field site (role), but the personal history, philosophy, and (often) demographics of the researcher also (Cousin, 2010).

To understand the issue of researcher role more effectively I have delineated between research sites based on my relationship with the participants. Table 4 illustrates these relationships:

Research site	Researcher role
Lymford	Researcher / Co-tutor
Chelby	Researcher / Participant
Kirkhampton	Researcher
Leebridge	Researcher

Table 4: Research role by research site

The role of 'researcher' here is that of an outsider entering the research site and collecting data to address a specific research question. My intention in delineating the researcher role in this way is not to contend that I assumed a value-free stance, nor to claim any specific external authority with which to reinforce my claims about the data, but rather to distinguish between this role and the more participatory roles at other sites. As such, my role as a 'researcher' can be viewed in two ways.

Firstly, I may be conceived as an interested body external to a situation attempting to construct patchwork knowledge with the assistance of various insiders. This knowledge is a social construction in its own right, subject to the usual restraints of language (see Gergen, 1999) and capacity to 'see'. The latter issue I attempted to treat with both sensitizing concepts (see above, or Blumer, 1954) and reflexivity. The former issue, the constraints of language, is a philosophical problem and an inevitable constraint. In this matter I tend toward the constructionist notion that narratives of research are one possible interpretation or description (e.g. Gergen, 1999; Law, 2004), and as such my

role as researcher might be interpreted more as conceptual storyteller than objective 'truthsayer'.

My role has not been as an external observer in all cases. A second way in which my researcher role has developed is as a co-constructor of the learning situation. At Chelby, for instance, I participated in the module as a student in addition to observing the sessions as a researcher. The co-constructor role requires the caveat that research is always a site of construction (see Kvale, 1996) and it therefore follows that I have been involved in co-construction at Kirkhampton and Leebridge, despite my role being confined to an outside researcher. My researcher role at Chelby and Lymford has, however, been more akin to a situational actor. I feel adoption of a hybrid role has been productive in several ways. Firstly, participating in the Chelby module gave me opportunity for autoethnographic reflection to inform elements of data. This is one way in which my research story and the participants' are enmeshed. Secondly, the synergy between a lengthier engagement and student role at Chelby was particularly effective at helping me build a rapport with participants. Whilst power relations are inescapable, I perceived that I had a greater level of collegiality with participants at Chelby than at any other research site.

Acting as a hybrid that was neither truly an insider nor outsider did produce tensions. Establishing balance between participation and 'interference' within the learning situation was one such tension. My field notes reveal examples of this dilemma, from establishing what constitutes acceptable conduct:

> Sparked off a bit of a discussion about teaching and types of students in class – don't want to appear too inquisitorial in my questions though!
>
> [Chelby, 03.05.2010: 18:30]

To episodes in which I was acutely conscious of how my actions would impact upon the class:

> I got stuck in the cloud and I ended up holding up the class! Rezzed a prim to sit on but couldn't get rid of it again! All of the rest of the class had managed to descend back to ground level again but the weather sim wouldn't shut down until I had left the cloud also! Took a little while and [Tutor] had to shout up to say "down here": I assume he thought we could not find the group, though I thought at first that he was slightly cross about the fact we were holding things up. This was probably just type chat though since these kind of technical hitches happen every lesson.
>
> [Chelby, 24.03.2010, 20:47]

In the latter case it is evident that I viewed the field sites as having a naturalistic progression that researcher action had the potential to disrupt. Through becoming entrapped in a weather simulation within the virtual world I felt that my actions had (accidentally) transcended the barrier between acceptable and unacceptable interference in that naturalistic progression.

The researcher role also produced tensions, most notably at Lymford where I co-taught the virtual world workshops on Geography 1 and 2. Unlike Chelby, where my participation was as a peer, at Lymford I was a guest tutor on the module. I have been mindful my identity as tutor might influence participants' comments in ways that would not occur at the other research sites. This identity dilemma is captured in the following exchange with a participant at Lymford:

LY4 …I was going to ask you a question. You didn't create the Second Life?

Matt I didn't create anything that you've seen today, no.

LY4 Okay, then what are you getting at: what is your mission with Second Life?

Matt Mine personally? (**LY4**; yeah) Well I'm studying it as a doctorate, so I'm looking at how other people are using it really rather than using it

> myself. My interest is in how universities are using it to teach in their courses…
>
> [Geography 1 Focus group, Lymford]

I attempted to mitigate any unfounded influence during my interaction with participants with several strategies. Firstly, I delimited my interests from the interests of the virtual world developers when responding to questions such as the one asked by LY4 above. My approach was not to claim to be a neutral observer, but to impress that my interest was not to hear specific responses and that participants should speak as freely as they felt able. After having responded to the question above from LY4 I realised that I would need to clarify the purpose of my research beyond the description on my participant information sheet. I consequently began all interviews with a short discussion of my research purpose. There is little evidence of an influence to suppress negative opinion in the data, which is the foremost manifestation I would expect of researcher influence in this situation. Most participants at Lymford (and elsewhere) seemed forthright in their discussions and appeared quite willing to express negative experiences and criticisms of Second Life.

These considerations of reflexivity also reflect a more deep-rooted epistemological tension between my positivist/post-positivist background in psychology and subsequent epistemological position. Most specifically it can be seen in the struggle for voice. During the Chelby field research I had already learned valuable lessons from AR; the centrality of researcher subjectivity, the catalytic capacity of outsiders, and the generative potency of collaborative research (see Kemmis & McTaggart, 2005; Torre & Ayala, 2009). Nonetheless, I was cautious of over-emphasising my own voice in the research and interfering with the learning situation excessively. Particularly I have wanted to ensure that participants' voices dominated the data because the thesis itself is an artefact of my voice. The delicate balance has been to pursue my own interpretation of the data without misrepresenting those who inspire and inform

it. I believe this has been achieved to a satisfactory degree in thesis; however, it is ultimately the reader's judgement.

3.4. Data collection

A total of 20 semi-structured interviews, two focus groups, approximately 20 hours of participant observation, and six hours of non-participant observation data were collected. A breakdown of this data across the research sites is shown in Table 5:

	Lymford	Chelby	Kirkhampton	Leebridge	Total
Interviews	7	4	6	2	20
Focus groups	2	-	-	-	2
Participant observation	-	20 hours	-	-	20 hours
Non-participant observation	-	-	-	6 hours	6 hours

Table 5: Data collected by research site

These methods were chosen as appropriate approaches to yield rich, qualitative data. The remainder of this section will detail in what way these methods were employed, their contribution to addressing the research question, and several ethical considerations pertinent to data collection.

3.4.1. Interviews

Twenty semi-structured interviews were conducted with students at the four research sites, distributed as indicated in Table 5. Interviews were conducted both on campus with students and by travelling to other locations when campus meetings were impractical. I interviewed in a total of seven locations: one academic's office, four meeting rooms, one campus café, and a pub beer garden. With the exception of the pub beer garden, there was no notable

difference in relative privacy or noise at any location (e.g. the café was almost empty). In the case of the beer garden, this setting was the participant's selection as it allowed an interview in an accessible location during a workday lunch break. All interview participants were provided with an information sheet about the research (see Appendix 3) and asked to sign a form consenting to take part (see Appendix 4). At the conclusion of interviews participants were reminded of their data control rights, including the right to withdraw data and to amend their interview transcript. Interviews were recorded using a digital audio-recorder and subsequently transcribed into word processed text files. These transcripts were returned via email to participants to confirm they were happy with the record. Several participants responded affirming their transcripts were satisfactory and several did not respond at all. No-one has withdrawn or amended any aspect of their transcript to date.

I initially devised interview questions by operationalising the core research topic of the project, drawing upon texts that detailed the process of developing 'guiding questions' (e.g. Punch, 2005; Cresswell, 2007; O'Donoghue, 2007). The resultant list of interview questions can be seen in Appendix 5. After using these questions several times I found they were too numerous, lacked in broader scope, and invited short, specific answers instead of a narrative. In sum, the questions were too structured. I redrafted the list employing alternate question techniques, such as the 'grand tour' (Cousin, 2009). This revised list of questions can be found in Appendix 6. Similarly, I became more flexible in how the list of questions was utilised within the interview. At Chelby, for instance, I already had several analytical issues to pursue with participants due to the prior observational engagement and I therefore included additional prompts for these specific elements. Similarly, I made no attempt to ask *only* my predetermined questions, but instead pursued topics that arose in addition to those that I had planned. As with all semi-structured interviews, the questions were designed to be catalysts, rather than categories into which data would later be divided.

I conducted interviews face-to-face, rather than using Second Life or other computer-meditated-communication (CMC). Although several researchers have conducted interviews in Second Life (e.g. Merchant, 2009; Oliver & Carr, 2009; Carr, 2010; Girvan & Savage, 2010), there were two considerations that made face-to-face interviewing more prudent. Firstly, most participants were not regular users of Second Life outside of the university and therefore it was likely that interviews would be spread over many different technologies (e.g. instant messenger, Voice over internet protocol [VoIP], email, Second Life) if not conducted face-to-face. Secondly, there is some uncertainty over the quality of data arising from interviews conducted in virtual worlds. Savin-Baden et al. (2010), for instance, outline several problematic elements of in-world interviewing, including the lack of physical cues, the linearity and disjointed nature of type-chat, and the potential for novice users to be uncomfortable in their virtual surroundings. Whilst they argue that there are merits to interviewing in-world, the authors implied that the quality of data from in-world interviews is often lower than face-to-face settings (Savin-Baden et al. 2010). These issues are, however, contested. Carr (2010) argues that the introduction of VoIP chat clients to Second Life was disempowering for the deaf community, reminding us that certain participants may find expression through text more effective than through verbalisation. Nonetheless, because of both the practical (logistical) arrangements involved and theoretical ambivalence toward in-world interviewing, I elected to conduct interviews face-to-face.

3.4.2. Focus groups

I conducted two focus groups, both face-to-face, at the Lymford research site. The first focus group was immediately after the Geography 1 workshop with five students who had been involved. The second was conducted during class time with all those who attended the Geography 2 module that day; a total of 10 students and one tutor. Because of the Geography 2 module's timetabling, the focus group was held three weeks after the Second Life workshop. I facilitated the Geography 1 focus group alone and co-facilitated the Geography 2 focus

group with the module tutor. The primary purpose of the focus groups was to generate discussion amongst class members that linked to both the research topics and the module outcomes. In the Geography 1 focus group I extrapolated a series of topics from the interview questions I had created and used these as discussion prompts (see Appendix 7). For the Geography 2 focus group I devised a new series of topics that linked the disciplinary areas of interest for the module and my areas of research interest (see Appendix 8).

Focus group research was not practical at all research sites. At Kirkhampton the research visit was after the conclusion of the multimedia module and thus students were not as easily recruited as at Lymford. There were sufficient participants who agreed to individual interviews that that a focus group may have been possible instead; however, the majority of participants originated from the same project group and thus a group discussion may have simply produced a collectively agreed account, rather than particularly detailed discussion. At Chelby a face-to-face focus group was impractical due to the geographical spread of distance learners. In-world discussion groups were a regularly feature of the Chelby module and, in light of this, I wanted to maintain clarity over what was required within the module and what was voluntary research participation. Finally, at Leebridge the use of focus groups was impractical because few participants volunteered to be part of the non-observational data collection, primarily, it seemed, due to impending study commitments.

3.4.3. Observation

Twenty-six hours of observational data were collected, sub-divided into participant and non-participant observation. ‘Non-participant’ observation meant that I did not actively take part in the teaching and learning activities as a student or tutor. At Chelby I joined the research site as both a participant and observer and attended weekly, two-hour class sessions for the duration of the module (February – May, 2010). At Leebridge I observed two workshops on

consecutive days in December 2010. At both research sites data collection followed the same basic approach; I attended the classes, made field notes in a physical notebook, and later digitised these notes whilst adding a summary sheet. At Leebridge this was conducted in the lab, whereas at Chelby I was virtually co-located with the module cohort in Second Life. I also gathered photographic 'snapshots' in Second Life during the Chelby course. These visual data were time-stamped and stored with the observational notes. The summary sheet added to the notes was a descriptive, analytical, and reflective account of the observational experience. In the summary I recorded notable events, analytical hunches, methodological or ethical challenges, and any elements that seemed to 'fall between the cracks' and proved difficult to record in the field notes.

Field notes were split into two elements: observations and reflections (see Appendix 9). In 'observations' I recorded action taking place within the class. In 'reflections' I recorded a conceptual commentary on action and related the observations to the guiding questions of my research. Table 6 summaries my observational foci:

Observations	Reflections
Spatial movements and arrangements	Links to theoretical ideas
Pedagogic characteristics of the lesson	Ideas to follow up with students
Technical aspects (logging in and out, lag, etc.)	Prevalent 'themes' in actions
Significant behaviour of avatars	Comments or intuitions on observed action or spatial movement
Other technologies used	Explanations or follow-ups to earlier incidents
Locations visited and in-world activity	Notable actor comments (type chat was recorded verbatim so was rarely noted)

Table 6: Observation foci

In the summary sheet I also commented on key themes, the development of theoretical understandings, and structural facets of the class (such as attendance and location). As the research was not theory-led there were no a priori themes or coding schedules for my observation. I attempted to label field notes at Chelby when I perceived an event related strongly to an aspect of the research topic, but this coding did not prove to offer any analytical utility, serving only to emphasise specific elements of the observations when on reflection numerous other elements were equally important. As such I ceased the attempt to tag observations and proceeded with only the dual structure of 'observations' and 'reflections'.

3.4.4. Managing consent

Although I utilised informed consent sheets with participants during data collection, the concept of 'informed consent' is problematic and merits further discussion.

Collecting and mediating informed consent can be troublesome in practice. Consent was initially negotiated through gatekeepers rather than directly with students; each site (through a gatekeeper) signed a letter of engagement outlining their participation in the research. As such a level of consent had already been agreed beyond the students' control; most evidently manifested at Lymford where I taught the two Second Life workshops prior to engaging students with interview consent procedures. Punch's observation that 'Researchers may always suffer by being continually seen as extensions of their political sponsors…' (2005, p. 163) is an interesting consideration here. I have noted in 3.3.6 that my perceived affiliation with Second Life and the creators of Second Life was a concern to address in data collection. Another manner in which a researcher may 'suffer' (or indeed benefit) from affiliation is when this lends credibility and creates new power relations in consent. At Lymford I was a guest with an interest in the experiences of the participants, invited by a powerful situational actor (the tutor). As discussed in section 3.3.6, I took steps

to minimise the coercive power relations associated with being an academic researcher entering the research site by attempting to represent myself as an non-evaluative 'other' with a genuine interest in my participants' experiences.

A more practical consent problem occurred during observation. Obtaining signed consent forms at Chelby was impractical because I did not meet participants prior to observation and no opportunity was afforded to hold an individual dialogue with each participant about their participation in the research. Instead, consent to observe, take notes, and capture snapshots was broached on the module's Moodle forums via a posting. Subsequently I also queried consent in Second Life during the first class session. No objections were raised; however, one participant expressed an interest to see the final thesis (to which I agreed). This situation was further complicated by the presence of outsiders to the Chelby institution who entered the research 'scene'. Such actors included guest tutors, residents of Second Life who sporadically attended class locations and an entire class from another institution with whom the Chelby participants (including myself) engaged in a collaborative 'cultural exchange' project. Managing consent with these additional actors was in some cases straightforward and in other cases impossible. I had several conversations with guest tutors seeking permission to research within their taught sessions:

> [12:05] **Matt:** What I really wanted to ask you was whether you minded me taking some notes on this session? Since you have participated in it!
> [12:06] **[Guest tutor]:** Oh, of course. You have my informed consent.
> [12:07] **[Matt]:** Thanks :0 I didn't realise there would be so many people involved from outside of the class, I've kind of been chasing them around asking for permission to carry on
> [12:07] **[Matt]:** *Thanks :)
>
> *[Chelby, 31.3.2010: 12:05]*

However, obtaining consent from actors who were not associated with the class, such as visitors to observed spaces or the 'griefers' in the Chelby module (see section 4.2.2.2), was not practical. One important ethical issue here is the divide between public and private in virtual worlds (see Rosenberg, 2010). In lieu of a practical method of obtaining consent from all those encountered in the virtual world, I adopted the stance that action performed within public spaces[10] or to a public audience could be observed without significant intrusion into the rights of actors involved. I have also been careful to remove the names of non-participants that appear on snapshots taken at Chelby. Finally, after consultation with the Chelby module tutor it was decided that notes would not be taken during class projects conducted in collaboration with students involved in the cultural exchange. The complexities of dealing with an additional institution, at which research ethics board consent had not been already sought and granted, would not be resolved in time to continue the research; particularly given that the institution was not UK-based.

Mitigating against 'consent creep' at Chelby was also important, particularly given the variety of data sources available (and that became available) within the module. I observed in-world sessions and wrote field notes, recorded type-chat and took photographic snapshots during class sessions. The module also included voice-chat sessions that could be recorded, an internet forum for class discussions, formative assessments that were available online to the entire cohort, and open access summative essays at the conclusion of the module. The multiplicity of data sources precipitated several questions about ethical practice: how many of these spaces and media were sources of data that students had consented for use in my research? Should any of these sources be regarded as authored content and cited rather than included as data? If so, would this be possible without breaching participant anonymity? In one case I queried students as to whether I might include a forum post in my research

[10] Although I recognise that 'public space' is not an unproblematic term and elides, as Massey (2005) has argued, the ways in which particular groups become dominant in ostensibly public times/space. For this thesis, however, the public/private divide is conceptualised along terms of 'privacy', rather than 'access' or 'equity', and thus such power relations are not of immediate concern to the methodological framing of the project.

notes. Whilst this was a satisfactory solution, it was not possible to constantly interrupt and potentially disrupt the class with new requests for consent. Furthermore, participation on the module forum was sporadic and did not include all students (i.e. some chose not to post). As such there were few channels open to engage participants in a protracted dialogue regarding consent. I chose to stay as close to the original tacit consent agreement as possible by using only fieldnotes, chatlogs, and snapshots from Chelby as research data.

3.5. Data Analysis

In this final section I describe the analytical processes that have lead me from collected data to the interpretation presented in this thesis. This discussion begins with a brief overview of the data management procedures employed and then moves on to discuss the analytical foci and techniques.

3.5.1. Data management

Auditory data from interviews and focus groups was transcribed into textual files for analysis. Twelve interviews and both focus groups were transcribed personally; the remaining eight interviews were transcribed professionally. I kept a notebook during transcription in which I made analytical notes on major themes that seemed to be emerging from the data. Observational field notes were also transcribed into digital files. Visual snapshots, already digital files, were stored on a USB memory drive. All physical data (e.g. printed transcripts) were stored within a locked cabinet. Digital copies of interview and focus group transcripts were inputted into the qualitative data analysis software Atlas.ti[11] to allow easy access and straightforward cross-referencing between data sources.

Participant names, avatar names, institution names and locations, and other identifying details were removed from transcripts in order to maintain anonymity.

[11] Atlas.ti: Qualitative Data Analysis, Version 6.2.27 (Atlas.ti Gmbh, Berlin, 2012)

In some cases this process required replacement of direct references to published projects with phrases such as '*research project at site'*. Given the relative scarcity of large-scale funded projects and close-knit nature of the virtual world research community, it is plausible that a reference to content within a project conducted at the institution would have compromised site anonymity. It has also been necessary to remove avatar names from visual snapshots in order to protect anonymity. Additionally, it has been important to consider the visual aesthetics of avatars as part of their identity. Several tutors, researchers, and (potentially) students, have highly recognisable Second Life avatars. As such, there is an ethical tension between representing visual data with avatars visible, but names redacted, versus obscuring detail of the avatars to maintain anonymity. I have concluded that the latter approach would greatly diminish the value of visual data and offer relatively little additional protection for anonymity. I nonetheless remain mindful of managing the anonymity of avatars when considering the use of these data, particularly in publication where the material is more likely to be viewed by colleagues.

3.5.2. Analytic process

I have explored data as a social construction, scrutinising it for representation of experiences and discursive construction of situational elements. Data has not been used as a proxy measure for experience per se, but rather as a representation of perspectives on the issues discussed. Given that perspectives are informed by experiences (O'Donoghue, 2007), the data are closely linked to both students' experiences in the learning situation and their perspectives more generally.

My approach to data analysis has been framed by the techniques and logic of GT (Glaser, 1978; Charmaz, 2006; Corbin & Strauss, 2008). Certain techniques which have been used in GT, such as the conditional matrix (Strauss & Corbin, 1998), were omitted because they offered little additional insight to the analysis. Others, such as coding and memoing (e.g. Charmaz, 2006; Lempert, 2007),

were included in the analytic process and are described later in this section. More generally, the logic of constant comparison (e.g. Glaser, 1978; Dey, 2008) – broadly conceived as comparison between data and data, interpretation and the original data, and interpretation and other interpretation – has been at the core of my analytic strategy. I disagree robustly with the GT authors who have suggested that accurate description of the data is unimportant (Glaser & Holton, 2004; Stern, 2009). I am yet to find a convincing argument advanced as to how building a conceptual understanding of the data can *precede* a descriptive understanding of the data. An accurate transcript of the audio data also aids the semantics of interpretation by keeping analysis close to the 'original' text. It seems to me that recalcitrance toward 'worrisome accuracy' (Glaser, 2002; Glaser & Holton, 2004) fails to establish any meaningful grounds for foregoing description of the data; as long as one remains mindful that this is only the beginning of the analysis. Put differently, I would rather be vigilant against being trapped in description than lack a satisfactory representation of the data to facilitate the process of interpretation and conceptualisation. As such, I began by exploring the data at a descriptive level, before attempting to conceptualise.

3.5.2.1. Analytic focus

The focus of the analysis has been informed by the work of Charmaz (2006) and Glaser (1978) on interpreting meaning in data. The counsel of Glaser (1978) to consider the conceptual qualities of data, rather than remain concerned with description or representation, has been particularly useful in formulating the analysis; notwithstanding the objection I have noted above. The approach I have taken to the data can be summarised as a series of questions:

- What is happening in this data?
- What is this data indicative of?
- How does this data converge or contrast with other data?
- What does the language used in this data reveal?

And, following Clarke (2005);

- Who and what are in this situation?
- Who and what matters in this situation?
- To whom do they matter? And why?

It is difficult to entirely characterise the terms of reference within data analysis; the list above is not exhaustive, but rather indicative. A significant number of analytical groupings are offered by Glaser (1978) as a type of sensitizing concept for emergent insight. I have found the equivalent (more constrained) list from Ryan and Bernard (2000) to be more useful: broadly, the data has been examined for processes, actions, assumptions, and consequences.

3.5.2.2. Data coding

A line-by-line coding strategy has been employed where possible, following Glaser (1978) and Charmaz (2006). A line-by-line approach provides an arbitrary unit[12] that encourages the analyst to consider data closely, between the usual themes or 'incidents' (Charmaz, 2006). In some cases delineating by line is not desirable, such as when a comment is spread across several lines of text and analytically it is more useful to refer to these lines as a unit. Corbin explains that her method of coding in GT is to work with 'natural breaks in the flow of conversation' (2009, p. 43). If 'conversation' is taken to mean both the dialogue between analyst and data and the participant's narrative, then Corbin's approach equates well with my own. I have coded using gerunds wherever possible, following the logic that this will help maintain a strong sense of action rather than a list of topics (Glaser, 1978; Charmaz, 2006). Whilst I agree that these 'dynamic codes' are beneficial, consistently using gerunds without generating lists of codes replete with terms that often have little meaning – 'being', 'seeing', and 'doing' particularly – is difficult. In some cases it is possible

[12] I refer to line by line coding as arbitrary because it has no semantic link to the data. If I were to change the font size of an interview transcript then this would impact upon line by line coding, whereas it would not do so under a thematic or incident approach.

that a topic-based approach is preferable; such as the style of in-line microanalysis advocated by Corbin and Strauss (2008). Distinguishing between the occasions in which a specific approach has greater value, however, appears to be a practiced intuition, rather than a learned technique.

An example of my coding within Atlas.ti is provided in Figure 4. Interview text is framed on the left of the page, codes and memos on the right.

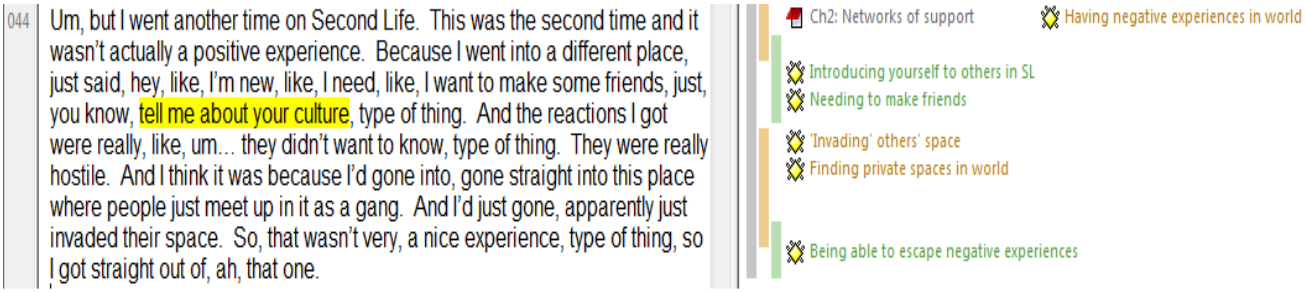


Figure 4: Example of line-by-line coding

As is evident from this example, I often highlighted elements of the text that I wished to return to later in the analytical process; frequently single words or short phrases that seemed to capture more than I was currently able to interpret. Codes attached to the transcript would often have short text files accompanying them in which I would described the premise for that particular code and any links to other elements of the data interpretation. Some, but not all, memos were linked to sections of text; in Figure 4, for example, 'Ch2: Networks of support' is a memo that refers to an earlier version of the analysis presented in this thesis.

Coding has primarily been applied as a catalyst for interpretative writing. It has been the systematic approach of coding close to some of the data that has inspired ideas in the analysis. As Clarke and Friese comment regarding relational analysis: '...being very systematic in consideration of the data can flip over into the exciting and creative moments of intellectual work' (2007, p. 376). In these 'creative moments' I wrote about specific elements of data that had been coded, and about concepts that drew upon multiple data elements and

multiple codes. Strauss and Corbin (1990) have called these techniques code notes and theory notes respectively. I have not concerned myself with using the same codes repeatedly or establishing a coding 'scheme', although some codes that were semantically identical (but may have a difference in spelling or terminology) have been combined. Codes are not 'tags' for retrieval, ordering, and ranking within my analytic strategy; nor are they to be considered mere labels devoid of interpretation (Dey, 2008). They are instead a systematising of my interpretation of data at specific points, with the primary purpose of catalysing understanding. I rarely interpreted codes directly; however, I used the *process of coding* to sharpen my understanding and to keep my thoughts as close to the data as possible.

3.5.2.3. Memoing

Memoing (Glaser, 1978; Strauss & Corbin, 1998; Charmaz, 2006) emerging links and concepts has provided the space for interpreting across data. In text documents, sometimes linked to specific areas of transcripts, I elucidated convergences and divergences, potential 'indicators' of conceptual issues, and explanations of terms. The process of creating, updating, and refining memos has been simultaneous to coding, but also pre- and post-dates it. The reflective diary kept whilst collecting data, transcription notes, memos during coding, and writing up analysis are all forms of memo that have served to structure and define the interpretation of data. St.Pierre (2010) has criticised qualitative researchers broadly for attempting to define structured procedure from what is, in Corbin's words, a 'thinking process' (2009, p. 41). There is a delicate balance to strike between a rigorous analysis (i.e. one that has integrity and does not skim over details) based on sound analytical methodology, and the flexibility in that methodology to allow creative insight. In that vein, I regard discussion of data analysis procedure as an 'official' account. One cannot feasibly find space to document the sites that St.Pierre (2010) asserts are facets of the analysis; walking around the block, weeding a garden, or watching a movie. Nor is omitting the procedure of analysis, or relying on implicit understandings of

qualitative analysis, an appropriate resolution. I have found data analysis insight in the procedure, the interstices between procedure, and the fertile ground of an (initially) empty page.

An example memo is presented in Figure 5. Ordinarily these memos are text files within Atlas.ti and would be connected through hyperlinks to various other memos and codes, rather than a standalone document. When a conceptual link was evident I often noted this in the text itself, for example at the beginning of Figure 5 I have noted a link to another memo.

Constructions of distance learning – 14/03/2011

(This links to constructions of learning, chapter 4)

Juxtaposition of distance learning online as a dialogue, and classroom 'feel' - this is interesting in how learning online is constructed in terms of sociality, emotionality (especially isolation and co-presence) and how SL might be used to simulate the classroom and get the best of both worlds

In P1, ln66, LY4 is discussing the concept of distance learning in SL as essentially overcoming a drawback of the lack of the feel of school - I take this to mean the feeling of co-presence, of shared space, and the ability to interact synchronously: he seems to indicate this by the physicality of raising a hand and the immediacy of questions and answers. LY4 is also discussing the idea of replicating the classroom quite overtly, both practices and space (and spatial practices!). Does this suggest an idea of equivalence? That the virtual world may exactly replace a physical version of the classroom? Are there nuances of this position in the data? Could be worth making a positional map here: VW as able to replace a physical version of the space, VW as not able to replicate a physical version of space - and why.

Second life as a distance/non-FTF application - from code "replacing physical co-location with virtual co-location"
LY1 suggesting here that being virtually collocated is a substitute for being physically co-located, which certainly follows the general logic of using SL across pretty much all the sites. An interesting silence then is around the issue of using SL whilst physically co-located, which is something that 3/4 sites do but no one seems to endorse! LY1 mentions that naturalistic communication of the variety seen in the labs FTF is the ideal in SL, but he doesn't really endorse working in SL whilst physically co-located. This silence would seem to suggest that almost everyone sees SL as primarily for use in non-FTF situations, such as distance learning or varieties thereof.

Figure 5: Example of a memo

Memos were fragments of the analytical process, with the data interpretation taking place across and through multiple memos simultaneously. Some memos,

such as Figure 5, were reactions to specific trends in an interview or series of interviews; I have commented on particular codes and lines of text in Figure 5. Other memos synthesised multiple smaller analyses to build an interpretation of an emerging trend or concept. As is likely evident from Figure 5, the memos I wrote were frequently a mix of prose and shorthand/abbreviations. The integrity of grammar and syntax within memoing was not important to me; only sufficient clarity such that I could continue the analysis.

Memoing, and interpretative writing more generally, is the process by which I have built 'theory'. Theory, in this case, refers to a conceptual understanding of the data that goes beyond describing patterns to make assertions about their basis. Although I have not sought to produce a theoretical model as such, I have nonetheless attempted to make an interpretation of the data at a theoretical level. Through iterative cycles of interpretative writing, articulating ideas and checking their 'fit' with the data, I have built a conceptual understanding of the data that I believe occupies the same space as what GT authors (e.g. Charmaz, 2006) have referred to as theory. I have built this theory from emerging understanding on numerous fronts, writing and rewriting data chapters with an increasingly strong sense of connectedness between the analyses I have offered and the arguments I have presented. The final collation of conceptual ideas into a theoretical system has been divided into three constituent sections to which I have assigned a title that I believe best captures what is going on within those analytical elements. These titles – experiences of action, reflections on learning, and wider networks of meaning – are additive and constitute my theoretical interpretation of research data collected. This interpretation and conceptual system, which I believe can help us to understand students' perspectives on the use of virtual worlds in HE, is presented across the next four chapters.

3.6. Chapter summary

This chapter has outlined the methodological approach of the project, including:

1. The worldview informing my research, broadly conceived as a social constructionist project and informed by sensitizing concepts that provide conceptual tools for analysis
2. The methodological orientation of the project, based in Grounded Theory, but with attention paid to key research concerns, such as reflexivity and literature reviewing, that are not well dealt with in many Grounded Theory approaches.
3. The data collected for the project, which consisted of 20 semi-structured interviews, approximately 26 hours of observation, and two focus groups, collected across four UK university research sites in a 15 month period.
4. The analytic strategy employed, based on the Grounded Theory approaches of coding and memoing, and aiming to produce theoretical interpretation by constantly comparing between both data and interpretation to building a coherent conceptual system.

The remainder of the thesis is concerned with the analysed data and the conceptual argument I offer in response to the research question: what are students' perspectives on the use of virtual worlds as learning technologies in UK HE? As noted in the previous section, this analysis is constituted of three component chapters. The first analysis chapter (4. Experiences of Action) is concerned with students' experiences of action within the learning situation, taking spatial and communicative action as examples. The second analysis chapter (5. Reflections on learning) is concerned with students' reflections on learning with the virtual world; it examines both the skills involved in the learning situation and students stances towards learning. The third analysis chapter (6. Wider networks of meaning) is concerned with the ways in which both experiences of action and reflections on learning are situated within wider networks of meaning that shape participants' lives. The final thesis chapter (7. Discussion) synthesises the analyses and discusses the significance for the field of key conceptual issues emerging. Initially, we turn to chapter 4 and experiences of action in the learning situation.

1

4. Experiences of action

In this first chapter of the analysis, I explore students' experiences of two categories of action in Second Life. These categories, spatial action and communicative action, are important for two reasons. Firstly, accounts of spatial and communicative action are common in the data. Accounts emerged from both responses to my questions and spontaneously in stories told during interviews. Discussion of spatial and communicative action can be considered ubiquitous and thus these forms of action become interesting objects of analysis when analysing experiences of engagement with Second Life. We might presuppose, additionally, that the learning situations studied in this thesis must include some form of spatial or communicative action given the nature of the pedagogic tasks required (see 3.3.4 Sites overview) and that it is this that gives rise to the ubiquity of accounts of this action. This is not to presuppose that pedagogic tasks determine forms of spatial and communicative action, but rather they are grounded in situational processes. The second reason for supposing the importance of spatial and communicative action is heterogeneity in practices and influences on practices. Heterogeneity, particularly within research sites and classes, tends to imply complex and interesting processes at work.

Two sections constitute this chapter. The first section, spatial action, explores students' accounts of learning to navigate the virtual world, including navigating local areas, moving between local areas in the virtual world, and spatial arrangement and practice. I conclude from this section that fundamental functions of spatial action are represented by students as relatively straightforward and become easily routinised, but conceptual elements of navigation could be more problematic. Also emerging from accounts on spatial action are assumptions about spatial norms in Second Life; systems to organise action. These norms influence assumptions about what spatial arrangements will occur and how both students and strangers should act within situations.

Moreover, spatial norms were often contested, including contestation over the applicability of norms drawn from other virtual and physical situations.

The second section, communicative action, explores students' accounts of interaction with other students and with strangers in the learning situation, including communication modalities, circumstances and purposes of interaction, interaction norms, and the construction of strangers' identities. I conclude from this section that communicative action differed according to the perceived identity of interlocutors and the spatial configuration of the situation. Some communicative action was informed by norms transferred from other, familiar situations, whilst in other cases new norms were derived based on broad ranging influences. Additionally, students' perspectives on the purpose and defining characteristics of the learning situation shaped their judgements about interaction and possible interlocutors.

4.1. Spatial action

Because Second Life is a 3D environment, students must learn to navigate the virtual world through avatar movement and camera use. Failure to do so would result in the student being unable to take action beyond static chat communication within the virtual world. The section first examines the concept of 'navigation' and learning to navigate Second Life before addressing other key issues in spatial practice. We begin by exploring spatial action for local navigation.

4.1.1. Local navigation

Managing the movement of avatars and the camera in the immediate vicinity is termed 'local' navigation. Local navigation involves any movement of an avatar's current location using control inputs, such as the keyboard (and mouse) or navigation control panels. Teleporting between spaces using the Second Life map is better considered as 'world navigation' and is addressed in

section 4.1.2. For novice users, understanding the keyboard and mouse inputs required to navigate locally can be challenging. C5 comments that it took several weeks for him to understand the keyboard inputs required to increase elevation whilst in flight:

> '…for the first few weeks, I could fly but then I would see other people starting to kind of fly further and further up and I couldn't work out how to do that, um, and I couldn't… I couldn't in any of the help files find out how to do that either. And I can't remember, I just stumbled across something one day that explained the kind of page up, page down thing. And that was kind of a eureka moment' (C5, Chelby)

C5's struggle with flight is a fundamental navigation difficulty; lacking knowledge of the controls to align intention and action. Whilst C5 quickly discovered how to engage flying mode, he had not simultaneously discovered the keyboard controls for certain movement actions whilst flying. It took several weeks and a chance encounter before C5 discovered the keyboard input needed to gain elevation. At Lymford, LY15 also found she could not gain elevation whilst flying. A technical restriction within the virtual world imposed a maximum altitude upon her avatar, although this restriction was not immediately evident to LY15. The maximum altitude restriction was eventually overcome with the intervention of the class tutor. For navigation difficulties, such as C5 or LY15's flight problem, the causes of failed actions are frequently unclear to novice users. Failure to achieve a desired action may result from the student lacking knowledge about the controls, as in C5's case, or about the technical capabilities of the virtual world, as in LY15's case. Moreover, when the cause of a problem is identified, its solution may not be evident or even within the student's capacity to enact. For instance, the solution to LY15's altitude restriction would generally be unavailable to a novice user. Without support, finding a solution to her problem would have taken LY15 considerable time and effort (if she ever resolved the problem).

In addition to moving avatars, local navigation includes camera manipulation. In Second Life, the camera is a metaphor for the user's visual field. As the visual field has a default position and alternative positions, it resembles the way a film camera can move around a scene to capture action. Unlike a physical camera, however, the Second Life camera is conceptual and may be manipulated without physical restrictions. It can be panned, zoomed, and rotated to suit the needs of the user. For K3, frustration about navigation related to camera manipulation, rather than avatar movement:

> 'I found it somewhat difficult that the 3D aspect of it, and the movement, features, checking that it is actually on the floor and moving around and, the checking it, and the mouse movements at times…so the control aspect took some, I wouldn't say a lot of time, to master, but the views and stuff like that, and making sure you were looking at, it wasn't just a one, sort of, dimensional perception that the wall that was there, you had to check all three, above, below, making sure the wall was level' (K3, Kirkhampton)

As it was based in a single local area, the building project at Kirkhampton seldom required extensive avatar movement. Using camera controls effectively was, however, central to K3's building activities, and thus local navigation remained a key issue in his experience of Second Life. Aligning elements of the building required sophisticated camera control, to observe from multiple angles. Without manipulating the camera, K3 would effectively be viewing the building from only one dimension. The consequence of failure to observe from multiple angles, highlighted by K3, is a misaligned building and perhaps an incomplete assessed project. K3 emphasises that learning to control the camera did not take extensive time, but nonetheless required some sustained effort.

Other students found novel solutions to camera difficulties. K4 explained that he and his project group used several avatars to resolve the problem of observing multiple angles:

> ‘…if somebody was doing the front of the building nobody else bothered with that, unless they needed assistance, you know, they'd say 'I’m fixing this, would you fly back and tell me if it looks straight according to our video or drawings or whatever?'‘ (K4, Kirkhampton)

Unlike K3’s approach of using the camera to observe multiple angles, K4 and his colleagues would ask another group member to move their avatar into a position where an observation could be made. Rather than developing sophisticated camera control skills, the group made use of their avatar movement skills and simultaneous access to several avatars to achieve a similar result. Arguably, K4’s approach is a less efficient way of building, relying on collaborative working between several avatars, when a single avatar with camera control skills would suffice. This notion of efficiency does not, however, take into account the time and effort ‘saved’ through avoiding the development camera control skills.

More important, K4’s approach presents an intriguing parallel between construction practices in the virtual world and the physical world. Much as a construction team erecting a physical building might work collaboratively to manoeuvre materials into position, K4’s group worked collaboratively to observe and correct errors in the placement of materials. Physical construction concerns, such as managing mass, weight, and size, were of little relevance to the group, but other similarities to construction processes were evident in their approach. Potentially, this indicates that the group never fully grasped or endorsed ‘virtual’ construction, but instead found an innovative way of applying physical construction practices to a virtual setting. Rather than developing a new framework for spatial action based upon the capacities for action afforded by the virtual world, K4’s group transferred an existing framework perceived as relevant to activity.

Collaborative action is thus performed spatially in a manner similar to other, physical construction projects, but not, intriguingly, in a manner similar to virtual

construction projects. K4's group attempted the task of building in a manner quite alien to the normative process of virtual construction projects; i.e. 3D modelling. A 3D modeller would be unlikely to use multiple fixed viewpoints (avatars), occasionally moving them to achieve a better view. The modeller, like K3, would use their capacity to manipulate a visual field irrespective of where the 'body' (avatar) associated with that field lay. Evident from K4 and his group's approach is the replication of a physical navigation practice, which involves moving to look at something, when a virtual navigation practice is available and perhaps more expedient. Whether K4 and his group chose – in the fashion of conscious volition – between alternative spatial strategies is unclear. The difference between these strategies highlights the way in which differing frameworks of spatial practice, grounded in different practices (e.g. 3D modelling, physical construction) can be adopted in the virtual world.

The analytical picture emerging suggests that Second Life navigation is a difficulty encountered by students early in their engagement and can provide some concern; particularly as solutions are often not obvious. There is, however, no evidence to suggest that an impasse results from this difficulty. Accounts of navigation tend to revolve around problems and their subsequent resolution, rather than obdurate failings. Moreover, little mention is made of local navigation beyond the context of learning *how* to navigate. This suggests that once skills are sufficiently developed, local navigation tends to become a routine aspect of action within the virtual world; perhaps demanding little attention in the learning situation and not considered of further interest in discussion.

4.1.2. World navigation

Whilst local navigation proved initially troublesome, the more persistent and resilient difficulty was navigation of the wider virtual world. Second Life is constituted of numerous spaces, called mainland and islands, which are both continuous and distinct. Spaces are continuous in the sense that all locations

inhabit the same virtual world and can be reached by movement within this world. Spaces are distinct in the sense that the most common form of movement between spaces is to teleport; literally to leave one place and instantaneously arrive at another, regardless of distance. Teleportation relies on delineation and classification of spaces in order to identify a starting point and teleport location (e.g. start at Chelby Island, teleport to Kirkhampton Island). Each research site had a private island space, typically used for class activities and research. The broader world of Second Life, composed of thousands of other islands and the mainland continents, was visited on several occasions by students. Local and world navigation can thus be divided. The former, local navigation, relates to navigating one's immediate vicinity in Second Life where all space is continuous. The latter, world navigation, relates to navigating *between* local vicinities in Second Life, where spaces are distinct.

These facets of navigation are distinct in some students' accounts and overlap in others. K5, reflecting on the building project at Kirkhampton, makes a clear distinction between local and world navigation:

> 'Local navigation was fantastic because you could, you know, you could walk, run, fly and whatever and it was quite good, I mean in terms of the local world we were based in it was very good, but it was just if you did want to go and get something you had to teleport and it was just…having to physically go away and look for something and when you get there having to go 'right, right, right, how do you navigate around this shop?' because it wasn't always a standard thing you did in everywhere you went, it wasn't always the same and you were walking about looking for things, running about looking for things and then teleporting somewhere…' (K5, Kirkhampton)

It is evident from this quotation that K5's experiences of navigation at local and world levels are starkly contrasting. Local navigation is praised as 'fantastic', both easily understood and enacted. World navigation, in contrast, is related as confusing and awkward. K5 comments that teleporting to other locations and

becoming lost was a significant problem, particularly because the design of shops and buildings in Second Life is not standardised. It is important to note that world navigation is used with slightly different meaning by K5 here, referring to navigation outside of Kirkhampton Island generally, rather than only navigation between spaces. Nonetheless, K5 explains that the necessity for teleportation between locations to find materials for the building project was frustrating. Some materials for the building project, such as textures, had to be sourced from beyond Kirkhampton Island, necessitating K5 and his group to teleport between commercial spaces in Second Life. K5's use of the phrase 'physically go away' provides a sense of the separation between local and world navigation that emerges from shopping for materials; analogous to going out to the shops in the physical world. For K5 there seemed to be a sense of irony and frustration in shopping for materials in an overtly physical fashion, whilst in a virtual space. World navigation was therefore both confusing on a mechanical level and incoherent on a conceptual level for K5.

At Lymford, LY15 and LY16 echo the dislocation felt when teleporting between spaces. The world map, a navigation tool accessible from within Second Life, was implicated as being unable to effectively overlay meaning or coherence across locations. Although the map offers a visualisation of Second Life as a coherent and continuous world, LY15 did not experience the world as such:

> '…there wasn't much of a map, but not that a map, you know, a map wouldn't help because you'd still click somewhere and end up somewhere random because it's not, it's not replicating the world, so if you have a world map and you clicked on London, in Second Life, it could be anything, so it wouldn't necessarily help to have a map because you still don't know what's where. But yeah, there was, yeah the map wasn't very useful' (LY15, Lymford)

LY15's concern over the use of physical place names, such as London, without any reference to their physical world location or attributes is typical of the

Lymford group[13]. Teleporting between locations was confusing for LY15 because locations lacked coherence to their physical world namesakes and to each other. The world map provided an image of the virtual world to navigate, but no sense of how locations related to one another. LY16 similarly comments on the difficulty navigating the virtual world because of the lack of coherence between spaces. Teleporting between spaces produced a sense of being lost between locations that existed in the same virtual world, but did not share other common features that the students expected. In both instances, the students' capacity to navigate the world was diminished by the perceived spatial disorderliness of Second Life.

In addition to the world map, Second Life includes a local area map called the 'mini-map' through which avatars in the vicinity can be located. For LE11, mini-map navigation produced confusing and unpredictable results. Although LE11 did not find teleporting between locations challenging, interpreting the map interface to inform where she should go was problematic:

> '…the mini-map, because I can use the world map, um, just about. You zoom out and then you can see lots of green people, and then you zoom in and finally find, you know, oh look there's a community. But you go in there and there's no one there. Or if there are people there, they tend to be models' (LE11, Leebridge)

The 'models' LE11 referred to are chatbots, computer controlled avatars frequently employed to greet visitors in Second Life shops or reception desks. Icons on the Second Life maps do not distinguish between chatbots and user-controlled avatars, both are represent by green dots ('green people'). Although LE11 could identify spaces in which other users appeared to be congregating, she had no way of knowing whether this appearance was illusory due to the presence of chatbots. World navigation thus did not reliably achieve LE11's goal of finding other (human) users with whom to interact. Identifying chatbots

[13] As all Lymford students are from Geography disciplines, a disciplinary link is evident here also. This will be discussed later in chapter 6 and is thus omitted in 4.1.1.

required an understanding of computer programming limitations, such as limited conversational responses or repetitive activity. Much like the Turing test of artificial intelligence (Turing, 1950), the most efficient way to discern a chatbot is to ask it questions and observe its responses. Mechanistic behaviour is often quickly evident, but only once co-located with the chatbot; it could not be discerned from the Second Life maps. For LE11, the models were an impediment to her immediate goals of navigating Second Life to find other users; identifying chatbots was a distracting aside. Misleading or misunderstood elements of the interface for world navigation were not unique to LE11's experiences searching for other users. LY15 explained that several times whilst exploring Second Life she moved location by clicking on the Second Life map and unexpectedly teleporting. Aids to navigation, such as map icons representing users or one-click teleporting, can prove problematic for students unused to their function.

Misunderstanding Second Life maps, feeling dislocated or confused whilst moving between spaces, and failing to discern between human and non-human interlocutors are more conceptually oriented dilemmas than those discussed on local navigation in section 4.1.1. Whilst gaining elevation in flight, for instance, is a problem of instrumental knowledge (knowing which inputs to achieve the desired outputs/mastery), the problems discussed in world navigation relate more closely to understanding the systems of practice that underpin spatial action in Second Life. Questions such as 'how does a user find 'real' people instead of chatbots?', 'how do spaces relate to one another and to familiar geographic concepts or assumptions?', and 'what is the representative relationship between map and experienced space?'[14] are concerned with establishing the principles or norms on which the virtual would operates. We

[14] And of course there are much wider debates on-going about such questions, not least in terms of globalisation and modernist geographical ordering of space and time (e.g. Massey, 2005). In this section I focus on the material practices in space – actions and norms – rather than the political context of such actions within broader debates in geography, sociology and elsewhere. It is worth bearing in mind, however, that systems of practice underpinning spatial action are enacted and/or interrogated within the wider context of prevailing notions of space; a point that will become particularly relevant (in principle, at least) in the discussion of discourse in chapter 6.

have seen also, in section 4.1.1, how pedagogic tasks within the learning situation may require norms of spatial action to be established; such as collaboratively creating a virtual representation of a campus building. There is thus good reason to believe that spatial norms are important in engagements with Second Life, as section 4.2.3 now explores.

4.1.3. Spatial practice

The spatial structures of Second Life differ markedly from its prefigured technical structures such as codes, servers, and client programmes. Whilst technical and spatial configurations sometimes overlap (in chat ranges[15], for instance), it is evident that expectations of spatial arrangements play a larger role in directing action; rather than merely pre-set technical structures. This section examines the function spatial norms perform in shaping spatial action and from whence these norms are derived. Three elements constitute the section. Initially, the way in which systems of spatial action can be identified is discussed. Following this, divisions between spatial norms grounded in assumptions from physical settings and assumptions from virtual settings are probed. This analysis highlights the importance that expectations about action can have in shaping experiences within the learning situation, even – or perhaps, especially – when these do not cohere to others' expectations.

Prior to any discussion of 'spatial norms' it is necessary to offer a definition, as 'space' conceived broadly has been used to do a vast array of work within educational theory and beyond (e.g. Savin-Baden, 2007) and, as Massey (2005) has noted, tends to be used loosely and based on unrecognised assumptions. In this text I treat space specifically as a patchwork system of relations (Murdoch, 1997, 1998) usually linked to a rendered terrain. Space is thus a way of describing relations between networks and materials that exist

[15] Text chat has a maximum range in Second Life of 20 metres. Beyond this distance, other avatars cannot receive the chat unless they are in a private conversation with the broadcaster (private chat has unlimited range) or the broadcaster has 'shouted'; which has a 100 metre range. VoIP chat has a maximum range of 60 metres, although this can be extended by modulating options in world to give a maximum distance of 110 metres.

bounded time and location. I have sympathy with Massey's (2005) positioning of 'space' in terms of converging trajectories (through time and space) of those (human and non-human) actors present: however, it is primarily in the capacity of relations, and not trajectories, that I treat space here. Spatial norms, following these definitions, are socially established systems of relations linked to particular spaces. For instance, in an office we usually sit on chairs, maintain 'personal' space, and face each other when interacting. These relations are not universal. At a chair factory, the chairs are built and stored, rather than sat upon. 'Personal' distance is usually a cultural construct and thus varies across time and location. And we typically do not face each other whilst interacting if one interlocutor is driving a vehicle. Spatial norms are thus situated within a particular social context and may or may not be perceived as coherent with other social contexts. Massey refers to this as the production of space through 'practices of material engagement' (2005; p. 61) and it is in the vein of material practices that I examine issues of space here.

4.1.3.1. Disjuncture and spatial norms

Incidences of breakdown in spatial practice reveal the existence of normative systems. Taken-for-granted elements of social practice are suddenly challenged, assumptions become visible, and the existence of competing alternatives becomes apparent. The presence of strangers is frequently implicated in challenging perceived spatial norms. At the final Chelby class session, a stranger was present in the session whose conduct trespassed against assumed spatial norms:

> '…that week when [Tutor] was giving his presentation and the girl came in and wouldn't stop lap dancing I was really uncomfortable when she came over kind of too close to me, you know. It's odd, at the back of your mind you are aware that this isn't real but, you know, you do have a reaction to it. There is quite a strong kind of back off reaction. So I think physical space is important in the world.' (C5, Chelby)

For C5, the actions of another avatar rendered his expectations of spatial practice visible. The proximity of the other avatar and use of actions deemed to be inappropriate for the setting (i.e. lap dancing) made C5 ‘uncomfortable’; violating expectations of personal space. He reflected on how assumptions regarding personal space cohere with the virtual world, considering that his own response may be incongruent with his recognition of the space as not ‘real’ or non-physical. Nonetheless, he concluded that ‘physical space’ is important and should be attended to in spatial relations within the virtual world. In this way, C5’s previously unvoiced expectations about personal space in Second Life are rendered visible and become relevant to understanding action in the virtual world.

Discussion of assumptions about personal space also featured in LY11’s reflections on the Geography 2 workshop at Lymford. Several students, including LY11, explored the densely populated area of ‘London Hyde Park’ Second Life, navigating between other groups of avatars already congregated in the space. After he encountered resistance from other Second Life users, LY11 reflected on the assumptions that underpinned spatial action:

> ‘…what happened was actually like a gathering of different users within the space and I found myself just walking through and, being used to the sort of video game aspect whereby you can just run into people and nothing really happens because it's the computer, you know computer simulated so they wouldn't do or say anything, so I was like walking through these people I was sort of like nudging them aside, and as you would in real life, people basically commented on that and said 'hey' whatever my name is [laughter] 'stop pushing people around that's not polite' or something like that, and I was like 'whoa' I didn't realise that they were bothered by just being pushed aside a bit.’ (LY11, Lymford)

LY11's experience illustrates that expectations regarding spatial action are not necessarily shared by all actors within a space. As he bumped and interfered with other avatars, LY11 assumed this would cause no concern; that the concept of personal space would not be relevant because this was not a physical space. The other avatars at Hyde Park did not concur, evidently assuming that LY11 would respect their personal space and not collide with them whilst navigating the area. This disjuncture between norms reveals that alternative systems of spatial practice are inferred or transposed into Second Life; neither LY11 nor the residents' assumptions are universal. LY11 assumed that Second Life operated on spatial norms drawn from his computer gaming experience, where collisions or merging through models is often commonplace and acceptable[16]. Other users, such as the residents at Hyde Park or C5, have taken action based on a different system of norms (often associated with physical settings), such as maintenance of personal space. These expectations regarding spatial action become clearer when transgressions are made against them. Spatial action is evaluated when assumptions break down, suggesting that an initial (implicit) understanding of spatial norms shapes action until reason is offered to re-evaluate these practices (e.g. scrutiny in class, incidents in world).

Spatial norms also appear situational, relating to perceptions of appropriate conduct in certain times and places. As noted by C5, lap dancing in a lesson violated the spatial norms of that situation. Similarly, during theatre performance there are spatial norms to which the dramatists and non-dramatists are expected to adhere; although these may not be universal across all times and

[16] Although in his comments LY11 is referring to online shooter games rather than virtual world games, the latter are an interesting study here. In World of Warcraft, merging through other users' avatars is commonplace, allowing many avatars to simultaneously inhabit small spaces (e.g. an auction house) and opponents to run 'through' each other in player versus player combat. Conversely, in EVE Online the spaceship avatars do have physical presence and can collide with each other. 'Bumping' is usually considered inconsiderate practice because it interferes with normal functioning of ships (i.e. flying in the correct direction). For exactly this reason however, bumping is a common player versus player tactic because it allows ships to disrupt opponents' flight paths. Spatial norms drawn from virtual world games are therefore likely to be disparate, rather than uniform, and will be sensitive to the social contexts within particular games.

places. For LE1, the spatial norms that underpin performance were challenged by the actions of another avatar in world:

> '…this other random person came in and they actually flew onto the stage and um, we were like 'oh, no, what should we do, what should we do?' And, um, I think it was [Group member 1] who used his avatar to actually push them off the stage and eventually they went. But it, it was just quite funny and it was unexpected.' (LE1, Leebridge)

The breakdown of spatial norms, as LE1 comments, can be unsettling, unexpected and even amusing. The actions of the stranger who flew onto the stage during a performance rehearsal clearly violated the expectations LE1 and her group had of spatial action within this situation. In physical theatre, strangers climbing onto the stage during performance or rehearsal would usually violate expectations of spatial practice. It appears that LE1 had assumed, perhaps implicitly, that similar spatial norms would operate in Second Life; non-performers would not enter the stage. Whether the stranger who flew onto the stage was unaware of the performance in progress, did not share the same spatial norms of performance, or was purposefully transgressing norms is unclear. The intentions of the stranger are also tangential. The crucial analytical issue is not that walking on the stage is normal in Second Life (which may or may not be the case) but that LE1's expectations of spatial action had been challenged and remedial action was necessary. In this case, the remedial action was to reassert the spatial norms to which LE1 ascribed by removing the stranger from the stage. As with LY11 and C5, the point is not whose understanding of spatial norms is 'correct'; but how these understandings influence both action and perspective.

It is evident from these examples that action within Second Life often builds upon existing frameworks: norms for structuring action in particular spaces. These norms can be challenged by interactions with other users, emphasising that such frameworks are not universal amongst all users of Second Life or

even amongst the research participants. As illustrated by the disparity between C5 and LY11's experiences, assumptions around spatial norms can be diametrically opposed. A significant and influential division here appears to emerge between appropriations of spatial norms associated with either physical or virtual settings. We have seen in the earlier discussion of K4's construction practices (section 4.1.1) that systems for spatial action can be drawn from physical settings and transposed into the virtual world, even when virtual settings have alternative frameworks for the same actions (although students may not be aware of these frameworks). C5's concept of personal space is also closely related to norms for physical settings. The discomfort of proximity, the paradox of 'realising it's not real'; these appear to follow the assumption (again, likely implicit) that spatial norms will cohere to physical settings. Conversely, LY11 outlines an alternative: the derivation of spatial norms from virtual settings such as computer games. This division is not intended to establish a false dichotomy of virtual and physical spaces; there are, after all, many different varieties of both virtual and physical spaces. Rather I intend to highlight a division between differing assumptions by participants about spatial norms and the subsequent influence this has on experiences within the learning situation. The following section (4.1.3.2.) explores spatial norms transposed from physical setting to Second Life; the subsequent section (4.1.3.3.) examines transposition from virtual settings.

4.1.3.2. Spatial norms from physical settings

Certainly spatial practices which serve functional purposes within physical settings appear less purposive, or even redundant, within Second Life. These practices are thus of analytical interest when they were enacted within class sessions or discussed in interviews; they represent assumptions drawn about spatial action based on spatial action in other, physical spaces. This overlap of norms was most evident at Chelby, where observation data was available and offered an insight into the everyday practice of participants. The organisation of

conversing actors into familiar spatial formations, particularly the circles shown in Figure 6, was commonplace:

Figure 6: Chelby, visual field notes, 14.4.2010

In this image recorded from a class session in Second Life at Chelby, students (including myself: bottom row, right avatar) have arranged themselves into an inward-facing circle to converse. Such formations emerged spontaneously within the class sessions, without any instruction from the tutor or other students. It is notable here that all avatars are facing inwards (i.e. towards interlocutors) and maintaining a 'conversational distance'. Jarmon (2010) has noted that circles are the most efficient formation for Second Life interaction because of the need to mediate chat range, but this does not explain why students stood 2-3 metres apart (instead of, for instance, 15 metres apart) nor why avatars were positioned to face interlocutors. Even amongst novice users who are unaware of chat range management, such as the Chelby students in their initial Second Life classes, there is evidence of circle formation. It seems likely that these practices are more continuations of other spatial arrangements than a framework based upon students' reflections on the technical

requirements of interaction in Second Life. The desire to 'look' at interlocutors whilst conversing, for instance, was evident in C2's comments:

> I suppose it's just human nature when you hear or when someone's giving you information and you tend to be looking in the same kind of direction as them. Because you still find it even in some of the virtual worlds where you find spaceships, if two folk are talking to each other they'll sometimes just stop and turn their ships, it's like you're flying a [space]ship you can use a radio and you can still find folk that prefer to see who they're talking to. I just think it's an aspect of human nature. (C2, Chelby)

C2's characterisation of action as an 'aspect of human nature' resonates with the analysis of avatars standing in circles as a continuation of norms from physical settings, rather than as a strategic assessment of Second Life's technical capabilities. C2 recognised that even when such action is redundant (such as in the case of spaceships) participants in virtual world games tend towards replication of physical spatial norms. Extant spatial norms thus provide a framework for spatial action in Second Life; they allow participants to take action based on assumptions about spatial relations even when, under subsequent examination, such assumptions lead to redundant practices.

In some cases, norms are established through the use of artefacts, such as the Chelby discussion table shown in Figure 7:

Figure 7: Chelby, visual field notes, 24.2.2010

The discussion table was used by the tutor in the components of classes where topics were being examined through dialogue, rather than movement around the virtual world. Through the use of the table, the mediation of chat range was automatic (as distances were standardised) and movement was effectively disabled whilst sat down. Although students could stand up and move if they wished, this rarely occurred in practice. The table is an example of how an artefact closely tied to the spatial organisation of action, in this case discussion, can recreate the same norms in Second Life. Tables are frequently used as the setting for discussions in physical contexts, they might even be said to embody the spatial practices of discussion situations. When transferred into the virtual world the table can effectively impose a framework of spatial action by engendering the same spatial norms. In Figure 7 no avatar is sat on the table, under on the table, or has chosen to stay away from the table; each has joined the discussion in the spatial arrangement encouraged by the table. This does not mean resistance is impossible, a student could easily have walked away from the table and positioned their avatar elsewhere, but to do so would have transgressed the spatial norms implied by the discussion table. As this did not occur it is difficult to speculate on possible consequences, although the

comments of other students in section 4.1.3.1 give some indication that transgression would not be viewed positively.

Without incidences of breakdown or scrutiny, the relationship between physical and virtual world spatial conduct often remains unnoticed. During the research interview with C5, for instance, I enquired about the pervasive circle formation in the class. C5 concurred with my observation, but noted that he had not considered why this happened, nor what significance it held in the class. The practice of circle formation had remained invisible – or, at least, not reflected upon – until the presence of spatial norms was noted. This is not always the case. For C1, the transposition of spatial norms onto Second Life was inevitable:

> 'You're socially programmed, I think, to behave in certain ways, you know. We've never met before. You came in and we shook hands. I didn't sit next to you on the sofa. I sat opposite you. You know? Like there's, there's things that people do. And I think if we were in Second Life we would have probably done it the exact same way because it wouldn't have felt right to do it any other way.' (C1, Chelby)

C1's analysis of spatial norms appealed to the concept of 'social programming'; the normative and socially constructed spatial practices of physical settings. Examples drawn by C1, such as seating arrangements and greetings, demonstrate the breadth of spatial and social conventions that govern situations. C1's phrase 'it wouldn't have felt right to do it any other way' succinctly summarises the argumentative thrust of this section; the transposition of spatial norms derived from physical settings is experienced as natural, rarely liminal, but nonetheless powerful for situating spatial action.

4.1.3.3. Spatial norms from virtual settings

Not all of the students drew on the spatial norms of the physical settings. As we have seen in section 4.1.3.1, at least one student made an assumption that normative spatial practice would cohere more closely to other virtual settings. The spatial norms consequent from this association can be very different from those based on continuity between Second Life and physical settings. As LY11's discussion of the incident in London Hyde Park highlights, practices of personal space and path-finding in many computer games are disparate to the everyday practice of physical settings. Other students challenged the replication of physical spatial norms in Second Life based on similar assumptions to LY11. C2 observed that concerns over personal space and the graphical integrity of avatars seemed out of place in the virtual world:

> '…it was strange though watching as folk were quite protective about their personal space. When you're an avatar and you're stumbling about you'll see folk who'll move out of the way because they don't want you clipping through their avatar which I found a wee bit strange…they're just graphical representations *[and the]* programme's been made so that you can clip through things and people. I didn't really see what the big deal was' (C2)

C2 made a distinction between systems of spatial norms. Some users were observed to take spatial action based on a desire to maintain personal space and avoid clipping, in this case the latter term meaning avoiding collisions that result in either graphical distortion (e.g. models merging) or movement of other avatars. C2 was unconcerned by these phenomena and appealed to the design of the virtual world to portray observance of these spatial norms as redundant and strange practices. Much as LY11 assumed that colliding into or through avatars would be acceptable, C2 asserted that because 'clipping' is possible it is intended for spatial practice in Second Life to incorporate it. Competing frameworks of spatial norms can therefore include aspects of technical infrastructure in support of truth claims.

Nonetheless, even spatial norms perceived to be redundant are powerful. LE11 observed how practices encountered in Second Life can be both disquieting and coercive:

> ‘The dancing makes no sense to me whatsoever, it has no purpose unless you’re going like… but like I said, I was in one of the nightclub things and there were all like, la, la, la, having a chat. And I was like this is really weird, you know, I felt I had to dance just to fit in. It was a bit weird, you know.’ (LE11)

Like the discussion table from Chelby, the nightclub space LE11 encountered seemed to instil specific spatial norms against which she felt uncomfortable to transgress. Although she commented that dancing seemed to fulfil no purpose and was ‘weird’, LE11 nevertheless danced in order to meet the conventions of the nightclub space. Similar to C1’s comment that not enacting physical spatial norms would have felt unnatural, LE11 found that discomfort can also arise when spatial action is disjointed from systems of action perceived to be appropriate. Tensions generated from incidents such as LE11’s nightclub encounter demonstrate that perceptions of normative conduct are important not only for informing spatial action but for shaping perspectives about the learning situation more generally. The perceived purposiveness of action also shapes the identity of actors – the lap dancer in C5’s account, the other dancers at the night club in LE11’s account – and in this way contributes to both spatial action and communicative interaction; the latter being the subject of section 4.2. Moreover, it is clear that engagements with spatial action are founded upon complex sets of spatial norms. LE11 saw no purpose to dancing, but presumably the dancers themselves did. Similarly, the competing norms around personal space and collision suggest differing understandings of both spatial action and, consequently, social etiquette. Contestations over appropriate conduct within the learning situation can thus revolve around differing assumptions brought to the virtual world by both students and strangers. Such contestations do not merely shape specific incidents, but rather have reaching

effects on how the virtual world is positioned by students within ideas on appropriate spaces for HE or disciplines (as will be discussed later in chapter 6).

4.1.4. Summary

In sum, almost all students initially struggled with local navigation, but this struggle was usually short lived. Students surmounted, or considered surmountable, local navigation difficulties within a relatively short time. World navigation was an enduring and significant difficulty for some, but not all, students. Moreover, the tools available in Second Life to assist navigation were either misleading or unhelpful to several students. Second Life's technical boundaries, particularly discerning between human and non-human users, became evident to at least one student through her difficulties with map functionality. On a conceptual level, spatial action within Second Life is underpinned by spatial norms; frameworks that give structure to arrangements of action and expectations of other actors. These norms are not consistent across all actors or even across all students. Contestation over the appropriate spatial norms for situations generated clashes between students and strangers. There was no common position between students on which spatial norms, grounded in which extant practices, should be used within the learning situation. Nonetheless, the importance of extant frameworks for action more generally is clear; frameworks transposed from other settings, and which may subsequently change, are influential in shaping students' actions and judgements of other actors.

The next section, 4.2, will explore the second category of action; communication action. Whilst spatial action involves both locating oneself in the world and interacting with other users, the following section examines more closely the ways in which interactions with other users took place.

4.2. Communicative action

In addition to being a visual-spatial environment, Second Life is also a communicative environment. The second category of action concerns interaction between human actors within the learning situation. For clarity, I define interaction here as any reciprocal action – i.e. action that exerts some influence on both actors - between two or more actors. I delimit interaction in this discussion to only direct interaction and not indirect, consequential effects. For instance, a student and stranger talking or being present in the same space may be considered interaction, whereas a student purchasing a texture from a Second Life shop from which the shop owner subsequently received money (but was never present) would not be interaction (within the present definition). This is not an attempt at an inclusive definition of interaction, but rather is a delineation of the meaning in which I use the term within this section. Additionally, I focus here on interaction through communication, and communication through exchange (or non-exchange) of language. I am aware that both stances are contestable. We might, for instance, examine which forms of non-linguistic cues can be interpreted in Second Life or discuss interactions through spatial practice such as LY11's encounter in Hyde Park (section 4.1.3).

This section charts three different interaction modes which are evident in the data: 1) interaction between students in the virtual world[17], 2) interaction between students and strangers in the virtual world, and 3) interaction between students and other class members in the physical world. Interaction between students and strangers in the virtual world (2) is then further delineated into the context of the interaction - 'interjecting' or 'found' strangers – which appears to influence students' perspectives on these interactions. For all interaction modes, I first discuss the students' use and perspectives on communication modalities (e.g. text and VoIP chat). Following this, I explore key aspects of the

[17] I refer to inter-student communication and interaction, both within and outside the virtual world, and include within this both student-student and student-tutor exchanges. Although 'class member' could have been used instead, I felt this would add an unwieldy term that would become confusing given the remainder of the thesis uses 'student' extensively. It should be born in mind that whilst 'inter-student' does predominantly refer to between students, in some cases tutors were involved.

three modes of interaction, including the circumstances and purposes of each kind of interaction.

The analytical picture emerging in this section shows that interaction is heterogeneous, multiply constituted, and can span both physical and virtual; often simultaneously. Distinct patterns emerge in the use of specific communication modalities; however, inconsistencies are also evident. These inconsistencies reveal that whilst pedagogy is influential, other factors are also important. Interactions also serve different purposes. Inter-student interaction in Second Life was almost exclusively a facet of collaborative action (i.e. project work), whereas student-stranger interaction was either a facet of exploratory action (i.e. finding out about the virtual world) or an imposition of action (i.e. resistance to 'griefing'). Interaction between students (either in the virtual or physical world) was, unsurprisingly, a pervasive element of experiences. Notably, interaction between students and strangers was also pervasive, demarcating these learning situations from 'traditional' classroom experiences.

4.2.1. Communication modalities

In much of the data, the use of specific communication modalities is a common element. This is unsurprising; I included questions specifically about communication in the interview schedule (see Appendix 5 and Appendix 6), undoubtedly increasing the volume of data. Nonetheless, the experiences emerging from this scrutiny of communication modalities demonstrates that experiences of (and perspectives on) communication modalities are varied. For clarity, I define communication here as symbolic exchange (e.g. written words, pictures, spoken words, gestures) between two or more actors; usually, though not necessarily, human actors. Following the divisions I have outlined in 4.2, I treat communication in three stages (reordered slightly for ease of discussion): 1) student-stranger communication in the virtual world, 2) student-student communication in the physical world, and 3) student-student communication in

the virtual world. I define ‘strangers’ simply as human actors (i.e. not chatbots) who are neither class member nor expected guest (e.g. a guest lecturer).

The communication modality between students and strangers is most easily addressed. In all cases discussed within the data, communication with strangers took place through text chat within the virtual world. There were no reported incidences of successful VoIP chat with strangers, nor any discussion of unsuccessful attempts to use VoIP chat with a stranger. In some cases student-student or student-tutor VoIP chat was on-going whilst a stranger was present, yet this VoIP chat was never directed towards the stranger specifically. Interactions with strangers in the virtual world did not always involve textual or oral communication of any kind. In certain circumstances, students encountered strangers with whom there was no overt communication and yet interaction took place; the case of griefers discussed below in section 4.2.2.2 is one such example. Whilst strangers themselves were prevalent in students’ interactions, communication with strangers was more limited. Finally, there were no cases of student-stranger interactions in the physical world. This is unsurprising, as non-class members would likely be removed from university premises unless invited as guests. As such, incidences of communication with strangers described in the data took place only in the virtual world and only through text chat.

Communication between students was more complex. Patterns in communication modality between students appear strongly, but not solely, influenced by spatial relations in the learning situation. At Lymford and Leebridge, where students attended tutorials co-located physically in a computer lab, there was limited communication between students in the virtual world. Instead, students would regularly communicate orally with those in close proximity to them and, in several cases at Leebridge, would talk ‘over’ obstacles (such as rows of computer terminals) or move their chair between locations in order to facilitate oral communication. On a limited number of occasions students sent text chat messages within the virtual world whilst physically co-located, for instance to offer a teleport, because one member of the group was

sitting a significant distance from her colleagues, or during a theatre performance. These incidences were uncommon and specific; in-world communication channels were not regularly used for student-student interaction in co-located sessions. Additionally, there were no instances of students using VoIP chat to communicate with each other whilst co-located in labs, presumably because this practice would be redundant when oral face-to-face communication was available.

Some resistance to oral communication whilst co-located was exhibited by LE11:

> 'I try and avoid talking to people as much as possible in the real world when I'm on Second Life. The whole purpose of this module is to get us communicating in a different way…And when [Tutor A] turned around yesterday and said, you know, you can communicate with each other, I was, I just thought 'but I wouldn't be able to if I was sat in bloody China would I?'' (LE11, Leebridge)

Unlike her colleagues, who seemed to readily engage with oral communication in the lab whilst using Second Life, LE11 raised concerns about doing so. By communicating orally in the physical world, LE11 argued that students were failing to recognise that normal use of Second Life would involve greater geographic distance and would make their communicative approach impractical. As such, she resisted talking in 'the real world', opting instead to communicate through Second Life and to maintain similar conditions to those she perceived would be present in use outside university. In my observations at Leebridge, LE11 frequently wore headphones to maintain her isolation from vocalisations in the physical lab. Despite the probable ease of oral communication in the physical setting, LE11's adherence to a perceived principle, purpose, or proper use of Second Life influences her to communicate in a radically different manner to her colleagues. There is also an implication in her comments that those students who failed to act as she did were not merely

‘missing the point’ of Second Life, but of the learning situation itself. LE11’s resistance thus acts to position the virtual world through assertions of purpose and normative use.

The practical case for other communication modalities was also recognised by LY7:

> ‘…we [classmates] were going around in a little gang of 3, we were able to talk to each other obviously because we were sitting next to each other, but we would have been, had we been in different places, you could have just very typed 'let's go and do this, go and sit down there'‘ (LY7, Lymford)

Whilst co-located in the computer lab, LY7 and his colleagues were able to communicate orally without the need of CMC. Like LE11, however, LY7 noted that were his colleagues geographically dislocated they would need to use another communication mode. Rather than expressing concern to use communication modalities that cohere to a perceived purpose or normative use of Second Life, LY7 implied that modalities can be chosen based on situational requirements. It is immediately tempting to reconcile this disparity by appealing to the different pedagogies of the modules, where Lymford was an exploration of the geographic relevance of Second Life, whilst Leebridge focused on how the virtual could be used as a performance space. As LE11 indicated, there was an implication in the Leebridge pedagogy that one probable use of Second Life is to engage with audiences and collaborators who are not physically co-located and with whom (non-CMC) oral communication would be impossible. Yet LE11’s colleagues do not appear to share her resistance to oral communication in the computer lab, indicating that ‘official’ interpretations of pedagogy and module aims are not the sole determinant of stances adopted. Whilst the situational approach to communication modalities, illustrated by LY7, appeared to be the more common, LE11’s stance demonstrates how perceptions of the aim and purpose of both technology and learning situation can influence choices regarding communicative action. Put differently, the competing

assessments of communication modalities demonstrate how different norms of communication can be drawn upon depending on judgements about purpose and pertinent situational factors.

When students were not physically co-located there was a greater propensity for inter-student communication in the virtual world. Use of text chat and VoIP chat thus appeared to be more prevalent when other modalities (e.g. oral communication/vocalisation) were less readily available. This observation applies most directly to Chelby, where students were geographically dispersed and never attended co-located lab sessions, and to Kirkhampton, where the data contains extensive reference to project work conducted outside of co-located lab sessions. Unlike interactions with strangers, inter-student interaction discussed in the data included both text chat and VoIP chat, though not necessarily within the same space and time.

Within those contexts in which students communicated extensively within the virtual world, divisions appear around the use of text and voice modalities. For K4, K5, K6, and K7, the use of VoIP chat (through Skype) whilst working within Second Life was ubiquitous:

> '…if we hadn't got on to Skype yet we'd use the typing thing to say "I'll be on Skype in a minute", but after a while, we just stopped typing and spoke across it you know, through the Skype' (K6, Kirkhampton)

For K6 and his colleagues, text chat had little role in the communicative processes of the group, except to signpost actions such as logging into VoIP chat. When VoIP chat was established it became the channel for communication between the students; type chat was rarely used beyond this point. Skype use was situated within previous and current use of Skype as a communicative technology by K4, K5, K6, and K7. Using VoIP chat as the primary communication medium was thus continuous with the students' communication practices outside of Second Life.

At Chelby, conversely, text chat was the predominant mode of communication between students. During my observations of the Chelby classes, VoIP chat was used almost exclusively by the tutor to communicate with the class, with students frequently replying and discussing topics in text whilst the tutor communicated orally. On several occasions, VoIP chat was transcribed into text chat by the tutor or by a student volunteer for the benefit of students who were having technical problems with receiving VoIP chat (e.g. could not log in, audio equipment unavailable). Whilst the tutor invited students several times to speak on VoIP chat, students rarely did so; preferring instead to communicate through text chat. One instance in which this pattern was disrupted was during students' presentations of their collaborative 'cultural exchange' projects. For each group project, at least one presented their work to the class on VoIP chat. Subsequent to the presentation, however, students immediately returned to using type chat. C1 remarked on this:

> 'Someone would maybe show me around their art gallery and chat, chat, chat and then they'd come over to look at what I'd done and, and then they were typing. I thought, 'you were quite happy to speak a minute ago, you can still speak. We're still... We're only 50 yards, 50 virtual yards, away from where we were'. So, um, I don't know what their reason was for it but it did seem to be a, a divide. You know, there was like, right, I'm finished in my exhibit but... and now I'm going to type' (C1, Chelby)

C1 identified a division between contexts in which use of VoIP chat is perceived as acceptable and contexts in which text chat is perceived as preferable. C1 linked the class presentation to VoIP chat use, suggesting that students assumed responsibility for presenting their project via VoIP chat, but were unwilling to continue VoIP chat use when they no longer had this responsibility. C1 later reinforced the importance of expectation in VoIP chat use:

> ‘I think people were a bit more comfortable with it [VoIP chat] that evening, but maybe because it was expected of them rather than [Tutor] just sort of leaving it open and waiting to see if anything came back’ (C1, Chelby)

It is evident that class structure influences choice of communication modality. Whereas in ‘regular’ classes VoIP chat was perceived as optional, C1 asserted that during the presentation VoIP chat use was expected of students. C5 offered a similar perspective on VoIP chat use during the Chelby class presentations:

> ‘…that feeling that you’re leading it [the class] and you’re leading people through a space that you’ve made maybe does give you the confidence to do that. Um, also, I suppose the fact that for a lot of them… for a few people it was about kind of almost doing a formal presentation. Um, so that was almost a reason to be using voice chat’ (C5, Chelby)

Like C1, C5 indicated that the presentation evening was an event in which students’ use of VoIP chat was perceived as acceptable. C5 suggested that confidence is central in choosing to use VoIP chat, derived from students presenting their own work. Using the term ‘confidence’ implies that VoIP chat is in some way riskier or more threatening than type chat within the learning situation, requiring confidence to undertake rather than being the norm. An underlying system of power relations is also evident in this comment, with C5 indicating that presenting your own work gives the confidence, or the authority, to ‘lead’ the class, whereas in other circumstances the students would assume a ‘follower’ role. VoIP chat is associated with authority and the ‘leader’ role, usually assumed by the Chelby tutor, but assumed by students during the presentation session. Whereas previous attempts by the tutor to cede the leader role had been largely unsuccessful, normative expectations about presentations, such as who should communicate, in what way, and through what medium, worked to transfer authority temporarily to the students. This is illustrated by C5’s positioning of the project demonstration as a ‘formal

presentation', which appeared to entail VoIP chat use by definition. This ceding of authority was, however, only temporary. As C1 observed, the students quickly relinquished use of VoIP chat to other presenters and the tutor, preferring to converse in type chat. At Chelby then, as in any classroom, power relations existed that moulded the use of communicative modes in class interactions; particularly the use of VoIP chat. These power relations were played out in students' choices to use text or VoIP chat, but less commonly in their choice of when to speak as text chat and VoIP chat can coexist simultaneously without disruption.

The analysis of communication practices at Chelby presented above is limited by its focus on pedagogic structuring of power relations. Not all interpretations of students' choice of communication modality were predicated on the perception of tutor as 'leader' or authority figure. C7 offered several reasons for the primacy of type chat:

> '[the module] was the first time I had ever used voice, and got myself all kitted out to use voice and then ended up not using it very much at all, ah, partly because some of the people couldn't use it, didn't have it, um, but also, because I wasn't terribly comfortable, being an American in a [UK] environment, and it was just easier all round for me to type' (C7, Chelby)

C7 initially explained that the reason for predominant type chat use was technical constraint. Whilst C7 noted that she was 'kitted out' (i.e. equipped) for the use of VoIP chat, other students did not always have microphones or audio speakers available, or the availability of sound was limited by circumstances (e.g. noise in the family home). Similarly, technical failures of the VoIP chat software for specific students meant that access to VoIP chat was uneven, periodically excluding one or more students. In C7's comments it is evident that type chat is seen as the universal communication medium, able to reach all students regardless of problems accessing VoIP chat. Like C5, C7 indicated that confidence was important in the choice to use VoIP chat. In this case it is

nationality, and presumably accent, which is central to a diminished sense of confidence; C7 appears to be suggesting that her American nationality and accent would mark her out as an 'other' within a UK class context. It seems likely that C7's discomfort arises from the perception of potential negative consequences of assuming this 'other' role, rather than merely assuming the role itself. For C7 then, the choice to use type chat was grounded partly in a delicate relationship between identity, inclusion (and othering), and the practicalities of the learning situation.

Interaction between notions of identity and communication modality was not unique to Chelby. At Leebridge, LE11 resisted the perceived effect on identity of using VoIP chat:

> '…that speech element, I won't use it, I will never ever ever use that, I don't think, because it makes me human again, it makes me who I am again. And that's… that's the whole point of RPG [role-playing games], you don't want to be who… you put your voice to it, you're that person, that is you again' (LE11, Leebridge)

Whereas C7's resistance to VoIP chat appeared to be mainly anxiety and functionality driven, LE11 expressed an ideological perspective. VoIP chat use was viewed as against the principle or purpose of Second Life - defined here by LE11 as a role-play setting – because it grounds the actor in markers of offline identity; it makes an actor 'human again'. For LE11, type chat maintained the authenticity of a separate identity, whereas VoIP chat will compromise this identity by hybridising physical and virtual actor (i.e. student and avatar). There are complex identity dynamics that could be explored in these comments; however, for the purposes of this discussion (and this thesis) it is sufficient to note that the choice to use or not use VoIP chat can be shaped by relationships between identity, the learning situation, and Second Life. Moreover, whilst both C7 and LE11 are concerned by the possible link between aspects of their physical world identity and their Second Life identity, this concern is

engendered for different reasons. Resistance to VoIP chat may therefore not be based on the same concerns, even if the outcome is similar.

However concerns about the VoIP chat use arose, text chat use became normal practice in several instances. The primacy of text chat appeared to contradict the initial expectations of several students at Chelby. C7 noted that she had purchased equipment and readied herself for the use of VoIP chat software, but then did not use VoIP chat within the module. C1 observed that there was no pre-module recognition that tutors would be the sole users of VoIP chat, but rather that VoIP chat would be the standard communication mode:

> 'I found myself actually not speaking as much as I normally would because it seemed that no one wanted to, that everyone was just happy to sit and listen to [Tutor] and type responses…I did find that a bit strange…I thought considering people have been using things like Ventrilo and TeamSpeak for probably ten years or more, that there were so many people that seemed quite reticent to speak and I did end up falling into that a bit myself…' (C1, Chelby)

Like C7, C1 had been prepared for the primary communication mode between students (and tutors) to be VoIP chat. VoIP chat use by the Chelby tutor, and type chat use by Chelby students, appears to have evolved in situ as a communicative norm. Once established and having gathered inertia, the normative use of type chat influenced C1's willingness to use VoIP chat; despite his initial expectation and previous experience in doing so. Implied in C1's comment is his unwillingness to act alone in being the sole student user of VoIP chat; the class majority influenced his actual practice, even though his perception of appropriate practice was unaltered. The decisions of other students, whether conscious or tacit, can thus propagate a particular communicative structure within the class. One salient difference between C1 and C7 is their previous experience with VoIP chat. C1 had not only used VoIP chat previously, but had been a regular user in situations where VoIP chat use

is normative. Like K6, VoIP chat use in Second Life was merely an extension of existing practice in other contexts. In his comments there is a sense that C1 assumed a shared history of VoIP chat use; that 'people' have been using Ventrilo and Teamspeak, implying a majority practice. It is clear from C7's comments that this assumed history is not accurate of the Chelby class. For some students, such as C7, VoIP chat was a novel communication mode; not a communicative norm either in Second Life or online generally. Whilst previous experience may not overtly determine the communication mode employed, normative understandings of communication are nonetheless brought into the learning situation from historical practices.

Finally, whilst VoIP chat use was a contentious issue, there was less resistance to text chat use. Several students regarded text chat as primary communication system in Second Life; perceiving VoIP chat to be riskier or unusual. However, those who considered VoIP chat to be normative practice did not necessarily perceive text to riskier, although they may have noted its use as unusual (e.g. C1). Similarly, those who routinely used VoIP chat (e.g. K6) also used text chat for specific (limited) purposes. This is not to say that text chat is universally regarded as functional or effective, LY5 offered a criticism frequently expressed within the context of text-based CMC:

> 'I don't think that text, and by typing in a text portrays what emotions and the meaning of what you want. I mean how many times have we sent an instant messages to people and they've misunderstood what you're trying to say? I mean it's about the emotions that go with the questions or what you're trying to say as well' (LY5, Lymford)

LY5 argued that because it lacked non-textual cues, text chat in Second did not have the communicative richness to carry emotion and meaning in the same manner as oral, face-to-face communication. To return to C1's comments also, text chat is noted to be a slow mode of communication; too slow for many situations (such as online gaming). These criticisms, whilst notable, are of a

different order to those levelled against VoIP chat. Text chat was criticised on the basis of its limitations as a medium (e.g. by LY5), but not on the basis of requiring greater self-confidence (e.g. by C7) or ideological mismatch with the virtual world more generally (e.g. by LE11). Whilst the criticism of text chat appears to centre on the technical limitations of the medium, the criticism of VoIP chat appears more closely rooted in the students' perspectives; linked to ideology, confidence, identity, and power relations.

In sum, communication between students, students and tutors, and students and strangers is discussed in the data. Communication between students and strangers was always through text chat, although in some cases no dialogue took place at all. Communication between students who were physically co-located was most usually through oral discussion in the physical lab, not through the virtual world. Whilst some communication (related to specific tasks or events) took place through Second Life, this was uncommon. One student notably resisted the use of oral communication on ideological grounds, preferring instead to communicate through the virtual world where possible. Communication between students who did not have physically co-located lab sessions, or for whom the majority of project work was conducted outside of the lab (i.e. Kirkhampton students), was more complex. Students collaborating whilst at distance had much greater propensity for use of text and VoIP chat, although the decision to use either text or VoIP chat is also complex. In some cases, practices extended upon normative systems of communication derived from other situations. In other cases, communication norms were established within the learning situation, such through the structuring of text chat and VoIP chat at Chelby. Once in-situ norms had gathered inertia – from continued use/support, for example – they proved sufficiently coercive and powerful to overrule expectations. Finally, it appears that text chat and VoIP chat are evaluated by students on different terms. Whilst text chat is criticised by some students for its technical limitations, VoIP chat is criticised and resisted by others along ideological, psycho-emotive, and technical grounds. What emerges overall is a sophisticated patchwork of communicative practices,

employing multiple modalities (frequently simultaneously), through which students interact with each other and with strangers.

4.2.2. Interaction context

A second pertinent issue in considering communicative action is the situation in which interactions took place. In each learning situation, students interacted with each other within Second Life to some degree. The structure, purpose, and length of this interaction varied, influenced strongly by factors such as the pedagogy of the particular learning situation. At Lymford, for instance, the engagement with Second Life was relatively short (a few hours) and the pedagogy did not mandate collaborative action, whereas at Chelby the engagement was much longer (10 weeks) and required collaborative efforts from students in order to complete the assigned work. Momentarily setting aside differences in module pedagogy, three key forms of interaction can be identified from the data: 1) collaborative interaction between students in the virtual world, 2) interjections into the learning space by strangers, and 3) encounters with strangers 'found' by students in the broader virtual world. Each form of interaction carries a different intention and tone and thus shapes experiences in different ways.

4.2.2.1. Inter-student interaction

Interactions between students in the virtual world were almost always related to collaborative work, such as tutorials, performances, and assessed projects. Students at Chelby, Leebridge, and Kirkhampton conducted collaborative projects in world that involved interaction between team members. At Lymford, students did not complete a collaborative project, but instead had two class sessions in which they explored Second Life, with students working together at some points during these classes. As such, the interactions between students in the virtual world took place within the context of collaborative activity that was a facet of the learning situation's pedagogy. This is notable in its contrast to the

interaction between students and strangers, which I shall discuss in the next section.

Collaborative interaction between students in Second Life was part of collegiate work that went on both inside and outside of the virtual world, characterised by processes such as division of labour, (dis)organisation of group roles, and so forth. These processes are generic organisational issues and thus are outside the scope of this thesis to analyse (except to note their presence). Of more direct relevance to the analysis is the interface between group processes and Second Life in students' perspectives. Put differently, the processes themselves are not a facet of this analysis, but how the processes involved in inter-student interaction played out in Second Life *is* a facet of the analysis.

Managing relations between colleagues was a process which had particular resonance with the experiences of several students. K2 described a conflict with another student that had repercussions for his Second Life project:

> '…it was a case of this particular guy from first year I had particularly got on okay with him, you know, helped him out when I could with work and he basically had asked me for help doing other things, but I was busy, couldn't help him, I told him that, told him that I wouldn't have time to help him and next thing I know his avatar deleted the front of the building' (K2, Kirkhampton)

The previously collaborative interaction between K2 and his colleague became disruptive as a consequence of an argument. The 3D model of a campus building on which K2 and his group were assessed was partly deleted in what is perceived by K2 as retaliation for his refusal to help his colleague. Thus whilst collaborative activity may be the underpinning premise of most inter-student interaction, there is capacity for this activity to be subverted and inter-student interaction to become disruptive. In K2's case, this transition to disruptive interaction involved not merely the halting of progress on the project, but the

destruction of existing work. It is important to add that K2 did not suggest that the disruption of collaborative work is unique to Second Life, but that it is a potential pitfall of all group activity within a university setting. From this perspective, the group processes acting within a learning situation that includes Second Life are akin to those in collaborative learning situations more generally. For C7, however, expectations of interaction in the virtual world were not analogous to other group work:

> 'I suppose, in a virtual world you just tend to think that everything is peachy clean and it's going to be wonderful, and you don't tend to think that this virtual world has all the same potential for difficulties that your real life has. Um, I don't know, it just never crossed my mind. I thought it would just be teamwork and we'd all get on with it, and we'd tick our little boxes of what we were going to do, and that it would be pretty easy, but it wasn't. [Laughing] It was very, very difficult, but, ah, I mean we, we ended up where we were not, um, she [group member] was not speaking directly to me, and she would only speak through [another group member]. It was just like things that could happen in real life, but just unexpected' (C7, Chelby)

Perceived disjuncture between the virtual world and 'real life' is highlighted by C7 in the final sentence of the quotation above. In C7's comments the unexpected tension between students contrasts with her idyllic description of the virtual world ('peachy clean') as including only congenial aspects of interaction and remaining aloof from interpersonal or organisational difficulties. Although data is scarce upon which to found an interpretation, I suspect this initial perception is largely derived from C7's previous engagements with Second Life, in which she irregularly spent time in the virtual world making money (through property development) and engaging in leisure activities with other users. C7's comment that amongst some users of Second Life there is a 'mindset' regarding the virtual world as a space for realising material fantasies of the real world (e.g. an expensive car, good food) seems to support the interpretation that she viewed the virtual world as an idealised abstraction of the

physical world. C7's realisation that Second Life has '…all the same potential for difficulties that your real life has' was a significant shift in how she defined and perceived the virtual world as a space for interaction. This perspective shift for C7 concurs with K2's comments, recognising that collaborative activity in Second Life entails many of the same merits and demerits of collaborative learning situations generally.

Not all inter-student relations were acrimonious. Much collaborative activity was noteworthy in its normalcy. K4 describes how the multimedia project in Second Life merely continued normative group relations outside of the learning situation:

> '…myself and 3 comrades suggested, we're older people within the university, we're all around the forty mark, so we suggested that we would work together because we know each other outside of university and we knew each other outside of university before we came here, so it wasn't really a big problem for us' (K4, Kirkhampton)

The use of Second Life in the learning situation did not refigure extant group relations for K4 and his colleagues. Instead, K4 worked with familiar actors, using a familiar communication medium (see section 4.2.1), and merely transposed this framework of practice onto a new learning situation. K4's experience thus differed considerably from C7, for whom collaborative action involved new patterns of interaction with fellow students. More generally, it seems from both the analysis of communication patterns and inter-student interaction that interaction practices are most readily disrupted in the distance-learning mode at Chelby. This seems plausible given that none of the Chelby students had previously engaged in a synchronous module by distance, whereas those co-located in labs were likely to have done so many times previously. As both K2 and K4 demonstrated, normative frameworks of practice can be applied to working with Second Life whilst co-located or at least geographically proximate, even if project work itself is not conducted whilst co-

located. Conducting collaborative work *through* the virtual world, in the manner experienced by C7, appeared to engender very different practices and challenges for interaction, such as negotiating the sophisticated relationship between students and communication media. Even for the students who have previously participated in asynchronous distance learning (such as C1), the Chelby module aroused novel challenges to communicative practice.

In sum, inter-student interaction was ubiquitous, but the structure, purpose, and length of interactions varied. The context for inter-student interaction was almost always collaborative activity and as such the structure, purpose and length of interaction were closely related to the pedagogy of the learning situation. Much of the collaborative activity described by students invoked generic organisational processes that are not unique to using Second Life. Interaction norms were applied to structure collaborative activity within the virtual world, although the success of this application was variable. For many students working whilst co-located, interaction norms proved to be appropriate ways of structuring activity; communication modalities could be continued and previous patterns of working applied. However, the merits and demerits of such approaches were also carried over. Engaging with Second Life at distance was more complex because it involved communicative and spatial arrangements not previously rehearsed. Previous experiences, expectations, and pedagogy all played a role – although not necessarily an equal role - in shaping the context and content of interaction.

4.2.2.2. Student-stranger interaction

Interactions between students and non-students were also pervasive. Second Life is not solely populated by tutors, students, and administrators. In addition to those who entered the learning situation because of their involvement in the module, numerous non-student actors also entered the learning situation and became involved in students' experiences. These non-students were strangers

to the course, found when students explored Second Life or when they were perceived as interjecting into the learning situation.

Numerous encounters with strangers described in the data relate to non-students found whilst exploring Second Life. Exploration of the virtual world was a class activity for several courses (notably Chelby and Lymford) and a facet of independent learning for several students. For LE8, interactions with strangers offered an opportunity to enrich knowledge:

> ‘I met somebody who was from, um, I think it was Jordan in, like, near Israel and absolutely lovely and was just telling me all about his culture and, you know, just basically just, yes, just telling me things that I’d probably never even know about, just by going on Second Life’ (LE8, Leebridge)

LE8’s encounter demonstrated how interactions with strangers could offer opportunities for learning beyond module aims. LE8 described this knowledge gained as ‘things that I’d probably never even know about’ had she not accessed them through Second Life. Although learning about Jordanian culture was not part of the pedagogic goals of the Leebridge learning situation, LE8 identified this knowledge as valuable; perhaps unusually valuable insofar as its acquisition would normally lie beyond the scope of her education experiences. LE8’s independent learning took her ‘beyond’ the classroom and into interactions with knowledgeable others. Interactions with strangers were a gateway to knowledge for LE8. Yet Independent learning in this manner is not always successful. K3 contrasted the availability of supportive strangers in Second Life with another virtual world with which he was familiar:

> ‘Whenever you actually arrive with RLC [another virtual world] you're dropped into what they would call a welcome centre, and there they would be sort of staff, or guides, or volunteers there to sort of say ‘look, here's how you do it, here's how you get started, here's how you search for people’ so there is that there. I'm aware there is help islands and stuff like that in Second Life, but

getting there was an issue, there was no easy way to search for people that could maybe give, devote you those 5 or 10 minutes to say ‘here's how you do things’’ (K3, Kirkhampton)

Whilst LE8’s encounter with the Jordanian stranger appeared to be chance, K3 actively wanted to interact with strangers in order to support his learning. K3 identified strangers as potential sources of support for learning fundamental Second Life skills, such as the navigation skills discussed in section 4.1. Unlike LE8, it is the lack of interaction with strangers that shaped K3’s experience. This absence appeared particularly acute in light of K3’s previous experience with the virtual world RLC, where supportive strangers were available to provide guidance. These previous experiences informed K3’s expectations of Second Life, but they are found to be at odds with his experiences within the learning situation.

Other encounters with strangers found whilst exploring Second Life were not readily perceived as learning experiences. For some students, these encounters were surreal or bizarre:

‘…I was flying, our gang, the [Geography] gang that were flying around, we were just somewhere and this person with an ant came up on their shoulder and then all these ants started crawling across the screen and across the floor and we were like 'what's going on here? Why are all these ants on our screen?' and she was like 'could be something to do with this ant on my shoulder?' and we were like 'We don't like your ant!' so she took the ant off her shoulder [laughter]’ (LY7, Lymford)

The encounter LY7 described is articulated as bizarre and unrelated to the pedagogic aims of the learning situation, despite taking place within a taught class session. Unlike in LE8’s experience, there was no perception of knowledge gained from the interaction; the encounter with the stranger was an entirely incidental aside that punctuated normal activity. There is no indication

that LY7 considered this encounter to be disruptive or hostile, merely present in the learning situation and a facet of his experience of using Second Life. LE11 described a similarly surreal encounter in which, during the course of her independent exploration of Second Life, she became inducted into a sect of Francophone vampire roleplayers. Like LY7, this encounter was not articulated as related to the specific pedagogic aims of the learning situation, although LE11 noted that the induction was certainly theatrical. These encounters with strangers formed either an aside in normative activity or contributed to a broader process of learning *about* Second Life. Whether interactions were perceived as contributing to the learning situation was a matter of individual students' assessments of the encounter. This assessment was framed within broader processes of understanding the relationship between Second Life and learning situation, discussed in the forthcoming chapters 5 and 6.

Strangers were also discussed when they were perceived to have interjected themselves into the learning situation. Interactions with those perceived to be disrupting the learning situation were usually acrimonious, although frustration with a stranger may build towards acrimony from initial neutrality. I observed one such interaction in the final class of the Chelby course, in which a lecture given by the tutor was visited by stranger. Prior to leaving the class space the stranger danced in a provocative manner in front of a student's avatar and disrupted the tutor's presentation by advancing slides out of turn. After several warnings, two students in the class interjected with derogatory comments towards the stranger:

20:23	[stranger] clicking through the slides and advancing them out of turn – she receives another warning from [Tutor] not to do so	Several of the students actually make some insulting comments towards [stranger] for doing this, she is called an 'idiot' by [C7] and [C4] says she 'has no friends'

[Chelby, 5/5/2010, 20:23]

This form of antagonistic incident is often referred to as 'griefing' (Bakioglu, 2009); deliberately disruptive activity. Interactions with those perceived to be griefers were viewed by students as unwelcome intrusions detrimental to the learning situation. C5 highlighted the negative effects on student presentations of another stranger's intervention at Chelby:

> '…one of the groups had set up this kind of art gallery and what the griefer had actually done was put something in the way so we couldn't physically enter it and there were all sorts of horrible noises coming through the system and things and well. Um, it was quite baffling at first. You just didn't know what was going on and it was only later it was explained that that had been a griefing attack, um, so it was… it was quite odd. It was quite disruptive and I felt kind of, really felt for the students who were presenting that next because it had obviously been hours and hours if not days of work put into this and just because somebody had nothing better to do, it was almost ruined' (C5, Chelby)

The stranger – described as a 'griefer' - encountered by C5 and the Chelby students was viewed as an entirely disruptive influence. C5 characterised the stranger as malicious, a bored person entertaining themselves by disrupting the work of the Chelby students. As with the stranger disrupting the tutor's lecture, the stranger at the student's presentation attracted negative personality characterisation because of their actions within the learning situation. The assertion that strangers intent on disrupting activities are idle, bored, or foolish was prevalent, but not universal. C2, for instance, commented that whilst the disruption of student presentations was irritating, the stranger should be accorded some respect for their command of the software and resultant capacity to interfere with its normative function[18]. Unlike the other encounters with strangers, there was no dialogue between the students and the stranger during the disruption of the Chelby presentations. The encounter was defined

[18] It seems likely that C2's acknowledgement of the stranger's skills was professional respect; C2 was involved in computer programming and worked within the computing industry.

solely by the actions of the stranger and the effect upon C5's experience of the learning situation.

Disruptive action can also be precipitated by lack of dialogue, such as in LE1's encounter with a Spanish-speaking avatar:

> '...we asked them [stranger] to sit down but I think they were Spanish. That's the problem. You might get people who don't even speak English. They were Mexican or Spanish. So, you know, we asked them to leave or sit down but they didn't so [colleague] just kind of pushed them off and they eventually went' (LE1, Leebridge)

In LE1's case, dialogue was difficult because of a language barrier. Unlike the encounter with a griefer at Chelby, there was an opportunity for communication between LE1 and the stranger; the students attempted to type-chat to the stranger and resolve the disruption. The attempt proved unsuccessful and the group were forced to take further action; pushing the avatar off the stage. As LE1 identified, language (English in this case) is an important underpinning aspect of interaction within the learning situation. Disruptive action, such as in LE1's encounter, may not always be purposive interference, but could be a misunderstanding precipitated by the lack of a common symbolic exchange system.

There was not always consensus among students as to which interjecting strangers were 'griefers'. LE8 described an incident at Leebridge in which a stranger interjected into the learning situation and was met with hostility from students:

> '…a new person came over in [Leebridge Island], was just looking for friends and just was wondering what was going on, they [other students] were really hostile, saying, get out of our lesson, you're ruining our lesson and… he was just… he just wanted to learn, like us. I mean, it was building and he thought

it was quite interesting: maybe, I can see what they're doing and apply it myself and, you know, have a go. And what's, what's wrong with people wanting to learn?' (LE8, Leebridge)

LE8 argued that her classmates considered the stranger to be intruding and disrupting the learning situation, but her perception of the stranger's motivation is quite different. Rather than a 'griefer', she portrayed the stranger as a fellow learner whose presence would not detract from LE8's learning experience. Other students in the class are portrayed as holding the view that the stranger's presence might jeopardise their own learning experience; although there is no interview data for these students to corroborate LE8's interpretation. Nonetheless, this example illustrates the centrality of perception in 'griefing' activity. Whilst in some cases the disruptive conduct of a stranger might be self-evidently malicious, such as at the Chelby student presentations, in many instances actions potentially construed as griefing are less clear cut (for example, the Spanish-speaking stranger in LE1's account). Perceptions of appropriate behaviour and disposition towards strangers within the learning situation are defining factors in recognising 'griefing'. Put differently, the labelling of an interaction with a stranger as acrimonious appears largely a function of student's perspectives and their interpretation of actions; rather than the actions themselves.

Following the importance of perspective, the potential for negative interaction with strangers can shape experiences; even when this potential is not realised. K2 commented on the risk of stranger interference in the learning situation:

'We're safe enough because we have our own island and that's restricted access, you know what I mean, to a degree. But maybe security could be stepped up on the island to prevent other people from accessing it who are not on the course, because we had a few people appear that were not on the course, you know that way, and they managed to get access...It's the same as campus security here [Kirkhampton], if you turn up with an Uzi at the front

door they're gonna be there to prevent them from getting any further, you know, it's the same thing here; there needs to be some sort of security put in place to prevent that' (K2, Kirkhampton)

K2 compared physical campus security and Second Life security in light of non-student visitors to Kirkhampton Island during the module. These strangers were not implicated in 'griefing' activities; they were merely present within the learning situation. Interactions with strangers are not a facet of K2's experience, but they are nonetheless conceptually important. Underpinning K2's comments is the recognition of risk that strangers might interfere with the learning situation and that this risk must be guarded against. In light of his problems with a fellow student (see section 4.2.2.1), it is all the more compelling that K2 portrays strangers as a significant source of risk. It is the perception of what strangers might do within the learning situation, even when strangers have been present and have not acted in a disruptive manner, that leads K2 to implicitly label all strangers as potential 'griefers'.

Interactions (both actual and potential) with strangers were a pervasive element of many students' experiences. Strangers were encountered in multiple situations and are ascribed multiple identities by students. Interactions with strangers were alternately seen as surreal asides that punctuate normative activity, sources of information or support, encounters with fellow learners, or encounters with disruptive nuisances. Stranger identities may be contested in situations where multiple interpretations appear possible, exemplified by LE8's resistance to her colleagues labelling a visitor to Leebridge Island as a 'griefer'. Therefore whilst interactions with strangers may be pervasive, the subjective constructions of these interactions are not necessarily consistent amongst students.

4.2.3. Summary

This section has focused on the modality and context of interactions between students and others within the learning situation. Three main topics have been discussed: communication modalities, inter-student interactions, and student-stranger interactions.

Normative approaches to communication modalities differed across contexts. Students acted – and viewed communicative action – differently when engaging with different actors and in different spatial configurations. Certain norms were transferred to the learning situation, such as in the case of students together in a lab communicating orally. Other norms were set in situ, influenced by factors ranging across ideological, psycho-emotive, technical, pedagogic, and power relation domains. The emerging patchwork of practices and perspectives is highly sophisticated, shaped by discourses originating within and without the learning situation.

Inter-student interaction was ubiquitous. Collaborative activity, such as group-work assignments, was almost always the context for inter-student interaction. Where exemplars were available, normative frameworks of interaction were drawn upon to structure Second Life activity (with varying success). This meant that those in campus-based courses tended to pursue similar strategies of interaction and collaboration to other learning situations they had encountered. For the distance learners at Chelby no exemplar was readily available, because even the distance learning students had never experienced a synchronous, virtual world learning situation previously. New spatial and communicative arrangements were reached, shaped by previous experiences of virtual worlds and learning, expectations, and pedagogy.

Students' interactions with strangers were pervasive, but not homogeneous. Strangers were encountered in multiple situations and were ascribed multiple identities by students. Whilst common constructions of strangers' identity emerged (such as the maligned 'griefer') so too did contestation of appropriate constructions where multiple interpretations were available. The construction of

strangers' identities, and thus the context and nature of interactions with strangers, was shaped by the students' perspectives of the learning situation, its boundaries, and the consequences of boundary-crossing.

4.3. Chapter summary

This chapter has examined two categories of action discussed by the research participants. These categories were:

1. Spatial action, which focused on the navigation of space in the virtual world and the frameworks that underpinned spatial arrangements. Navigation was ubiquitous; particularly for those students who left their institution's island space. Difficulties with local navigation were prevalent, but were surmounted by students in a short time. Difficulties with world navigation, whilst less common, appeared more enduring; largely due to their conceptual, rather than instrumental, nature. Extant norms, drawn from experiences of other situations, influenced spatial arrangements and expectations of others' actions in Second Life. These spatial norms were not homogeneous, however, and competing spatial norms came into conflict both within classes and during interactions with strangers.
2. Communicative action, which focused on the interactions between students and between students and strangers. Multiple forms of communicative action, engaged in for different purposes and involving different modalities, were identified. Norms derived from past experience were influential in shaping communication and interaction practices, but this relationship was complex and, particularly in the case of communication modalities, was influenced by many other factors. Communicative action was thus based on a mix of transferring extant norms and establishing new systems of action based on judgements about the learning situation and the identities ascribed to interlocutors.

In the next chapter, 5. Reflections on learning, we turn to examine students' reflections on learning to use Second Life (i.e. to become capable of action) and explore the influential factors that shape this process.

5. Reflections on learning

In the previous chapter, two categories of action in students' experiences of Second Life were explored. It was concluded that both extant norms and novel approaches to the situation were important in understanding students' experiences. This chapter more closely examines the role of learning in students' perspectives. The analysis presented here does not concern the cognitive processes involved in learning per se, but rather the ways in which students describe, situate, and reflect upon the learning process. The chapter is divided into three elements: evaluations of learning, foundational skills, and stances toward learning.

The first element, evaluations of learning, is concerned with how students represented the length and arduousness of the learning process and what influences underpin these representations. I conclude that there is insufficient consistency across students' judgements to indicate that 'learning curves' are attributable to Second Life itself or even to specific practices (such as building) within Second Life. Instead, the skills, knowledge, and stance of the individual student appear to be crucial in determining the ardour of learning to use Second Life.

The second element, foundational skills, builds upon the proposition that there is no intrinsic 'learning curve' to Second Life by elaborating on specific skills (identified in the data) that are perceived to be foundational to action. I conclude that familiarity with foundational skills is likely to be highly influential in informing the difficulty of learning to use Second Life and subsequent reflections on this process.

The final element, stances toward learning, examines the way in which perspectives on learning appear to be context dependent. I conclude from this element that perspectives on the purpose of the virtual world within particular contexts influence stances on the purposiveness of learning specific skills.

Furthermore, whilst the pedagogy of the learning situation informed perceptions of the purpose for which the virtual world is (or may be) used, it was not the only influence. Other concepts, such as education and discipline, were evident in students' positioning of the virtual world in relation to learning.

5.1. Evaluations of learning

Students' commentaries on the ardour of learning to use Second Life fell between two extremes. Some students commented that the learning process was entirely unchallenging:

> '…within ten minutes we were building buildings, I thought the learning curve was so shallow, I mean that's the thing that was so good about it…I thought it was very simple to actually interact with, it literally only took fifteen minutes and you were doing things' (K5, Kirkhampton)

K5 asserted that the usability of Second Life is high. Little time was required to develop the skills needed to interact with the virtual world in the desired manner; learning to use Second Life was straightforward. This commentary closely follows K5's earlier contention that local navigation was 'fantastic' and easy to grasp. It is not only local navigation, however, that is noted as simple here, but also the use of Second Life's building tools. K5 explains that after a short time, only ten minutes, he and his colleagues were using the building tools to create content for their project work. These early prototypes of the project were subsequently deleted and replaced by more sophisticated variants in an on-going refinement of skills. Following this, it seems likely that ten to fifteen minutes is K5's estimate of the initial time required to learn basic controls, such as the interface buttons in building, rather than to develop sophisticated building skills.

Ten to fifteen minutes is at the pole of comments relating to a short, unchallenging learning experience; these comments are also lesser in number

than those relating to an arduous learning experience. A lengthier learning process was described by C5:

> '…as part of my research one of the… one of the facts that I uncovered was that it's estimated to take around four hours solid use before you… before you can kind of start to use it at any basic level, and I feel I've kind of got that four hours now…It seems a short time to me, to be honest… Roughly speaking, I'd say maybe eight to ten hours I think would be more accurate' (C5, Chelby)

C5 contrasted to his own experience an estimation (found in an extant text) of the time investment required to learn to use Second Life. Eight to ten hours, the estimate put forward by C5, differs greatly from both the source uncovered in C5's research and the estimation offered by K5. The phrase 'at any basic level' coheres with the skills that K5 discussed (basic building and navigation) and thus the two estimates seem to relate to the same process. One influential factor in this disparity may be the broader scope of the virtual world engagement at Chelby, where students explored Second Life, were encouraged to join social groups, learned elements of building and scripting, and took part in collaborative projects with non-Chelby students. As such, greater breadth of 'basic skills' may have been necessary. C5 commented that even with many hours of continuous use, he felt he had only accrued the 'four hours' of basic skill learning recently. Time is metaphorical here, where 'four hours' relates less to the actual measure of four hours, but is a metaphor for an achieved level of skill that has been deemed to take four hours to acquire. C5 suggested that what is considered (by the source discovered in his research) to take four hours had taken him eight to ten hours. C5 appeared to conclude from this disparity that the four hour estimate is incorrect, yet it is evident from the contrast between C5's and K5's comments on learning that conflicting estimates may potentially reflect different skills being learned.

The possibility of differing estimations reflecting different basic skills being learned is plausible. In chapter 4 the ubiquity of local navigation was discussed and it was clear that this form of basic navigation was surmounted (or was perceived to be surmountable) within a short time. More complex skills, such as creating animations for use in Second Life, often took longer to learn. LE1, for instance, found creating avatar animations for a performance in Second Life challenging:

> '[Avimator] was very, very technical if you wanted to do something with the whole body because you had to think about how it would move and you tried to make it look as realistic as possible. And yeah, it just took hours because it's about trial and error as well. We didn't know what we were doing really' (LE1, Leebridge)[19]

The complexity of animation skills is reflected in LE1's comment that hours were spent on the animation creation process. In addition to Second Life, creating animations required a supplementary programme – Avimator – designed to pose avatars and create animations. LE1 remarked that this supplementary programme was 'very technical', meaning not only that it involved many complex processes, but that there were complex conceptual elements involved; such as consideration of how an animation would appear when transferred from Avimator to Second Life. Following C5's estimation of eight to ten hours, it is possible that most, perhaps all, of this time would be occupied by animation alone in LE1's experiences.

An alternative approach to conceptualising learning experiences could be to categorise animation as an 'advanced' (i.e. non-basic) skill and conclude that it

[19] LE1's comment that 'we didn't know what we were doing' could be interpreted in at least two ways. Firstly, it could suggest that initially the group had no proficiency with Avimator and had to build this over time, through trial and error. This is the interpretation I believe to be most accurate to LE1's sentiment. An alternative interpretation would be that LE1 is suggesting the group never had (or developed) any knowledge of what they were doing and thus their experimentation did not lead to learning. I reject this interpretation on the grounds that the group completed their project and appeared to achieve some understanding of what was required to produce avatar animation in Second Life. Experimentation appeared to lead to some progression of knowledge and skills.

is not part of the same learning content being discussed by C5 and K5. Yet making divisions between basic and advanced skills in this way is likely to lead to analytically murky waters, such as arbitrary designation of only navigation and interaction (i.e. not content creation) skills as 'basic'. This approach does not do justice to LE1's experiences for instance, in which animation was central to completing her performance project, whereas world navigation was less important. Perhaps more compelling, building in Second Life was not only central to K5's experiences, but was noted as requiring only 10 minutes to learn; hardly commanding categorisation as an 'advanced skill'.

Ultimately, contentions over which skills are being discussed may not offer the entire analytic picture. Other students have observed that the time spent developing skills differs within classes, even when the skills themselves are similar or identical. After six to eight hours of tutorials on the use of Second Life, LE11 evaluated how far her colleagues had progressed towards the level of skill development that she believed she had attained:

> 'I changed my Avatar, I created a new Avatar, I built props and stuff. I used the Avimator. I used gesture. I used a tool from at least every single lecture that we'd done…. And I think that shows how integrated you are with things, how able you are to do everything, you know. And I did that in the space of two hours. For some people it took them two hours to change their person [avatar] and give them a gesture. Come on, you're kidding me.' (LE11, Leebridge)

LE11 contrasted her use of tools and skills from each of the classes in the Leebridge module with her colleagues' use of only a limited subset of those tools. Unlike C5, who evaluated his progress against an estimate derived from outside the Chelby module, LE11 used her own skills as a benchmark against which to evaluate her classmates. The tone of this commentary clearly implies that LE11 finds her classmates' progress to be lacking; the clause 'you're kidding me' in particular. LE11 appears to consider some of her classmates to

be uninvolved, inattentive, and potentially apathetic towards developing and applying Second Life skills. As LE11 goes on to say, and is revisited later in this section, there may be compelling reasons why some of her classmates struggled. Intra-class differences, however, are an important analytic factor. In contrasting C5's and K5's estimations of time involved in learning to use Second Life I have explained the influence of different skills being learned. It is evident from LE11's comments, however, that the Leebridge class was engaging with the same practices and technologies; the basic skills were not as markedly different as with C5 and K5.

One explanation for LE11's observed disparity between her own and her colleagues' skills is that she may have spent significantly more time engaging with Second Life outside of formal classes. Indeed, LE11 asserted that she had spent more time discovering Second Life and integrating into its cultures and communities than had her classmates. Without data on all of the Leebridge students' activities in Second Life, this possibility is difficult to assess. The other student interviewee from Leebridge, LE8, certainly reported having spent a great deal of time in Second Life outside of formal tutorials; whether this is true of the other Leebridge students is unclear. Time is not, however, an irreducible variable; the activities undertaken during time spent in Second Life is of greater analytical importance. From LE11's other comments, it is evident that much of the time she spent in Second Life outside of formal classes was devoted to interacting with other users and discovering new locations. This is accurate of LE8's account also. Neither student reported spending extensive time building or animating. This immediately raises the question of why navigating the virtual world and engaging with other communities would accelerate a student (such as LE11) ahead of her colleagues in the use of skills that are not involved in these activities. An argument could be made that becoming generally familiar with Second Life will help situate any skill development; however, this does not cohere with K5's experiences, in which skills were developed quickly but action was located almost exclusively on Kirkhampton Island. It seems that both the

skills being learned and the time spent engaging with Second Life offer only a partial explanation.

Another possible influence on the difficulty of learning to use Second Life is resistance or anxiety. Experiences of learning to use Second Life were, for several students, anxiety provoking. Feeling overawed by the virtual world, or the scale of tasks to be conducted, was a feature of several students' accounts. K6 remarked on his initial unease engaging with an environment with which he had no prior experience:

> 'I remember when we got it [Second Life] at the start…I was a wee bit afraid of it because obviously it's a completely new environment and I had no experience of it and stuff. Who was it that said there's nothing to fear but fear itself?! We got ourselves together and away we went, it wasn't as big an ask as we thought…' (K6, Kirkhampton)

K6's apprehension over using Second Life is evident. The phrase 'as big an ask' conveys how he had initially perceived the engagement with Second Life to be difficult (a big ask). K6's anxiety appears grounded in lack of previous experience (with Second Life) and the sense the virtual world being something new, unknown, and potentially challenging. This apprehension is echoed by other students, such as C2; who described his first entry into the virtual world as 'daunting'. A similar account was offered by LE8:

> '…it was really daunting because I'm not a technological person. Windows Messenger and Facebook is my limitation, you know. I, I used to play Sims but I was never good at it. I couldn't build. I couldn't do any, I couldn't do any of the things that you're, you're supposed to do in Sims. And so, when they were, like, 'oh, you're going to be able to build a set and you're going to', I was, like, 'oh, God, it's like Sims.' And it was, it was just daunting to think that, like, I was going in this place' (LE8, Leebridge)

K6 and LE8's apprehensions about learning to use Second Life are, however, subtly different. Whilst K6 attributed his anxiety to lacking knowledge about what learning to use Second Life would involve, LE8's concern appeared to stem exactly from this knowledge (or assumed knowledge). She associated building in Second Life with building in the computer game The Sims, for which she noted she had little aptitude, and inferred that she would find Second Life similarly challenging. Whilst LE8 draws on the example of building skills, her anxiety over learning to use Second Life skills appeared to be more far reaching; it was being 'in this place' (Second Life) that was daunting, not merely building. For other students, anxiety *did* centre on specific skills. C5, for instance, related that developing Second Life building skills was initially 'overwhelming'. He, like LE8, felt daunted by the magnitude and difficulty of the task. C5's apprehension regarding building contrasts starkly with K5's comments, earlier in this section, that building was simple to engage with.

Despite initial feelings of apprehension, these students all progressed to become proficient users of the virtual world. More important for this analysis, none of the students quoted above reacted to their anxieties by withdrawing or disengaging from the learning situation. The reverse is more accurate of LE8, who explained that she resolved to spend more time in Second Life and invest more effort into the module in order to overcome her perceived disadvantage. K6 paraphrased (above) the famous maxim of Franklin D Roosevelt, indicating that he and his colleagues also resolved to put aside their anxiety and invest effort into Second Life. In other comments, C5 noted that after overcoming his initial feelings of anxiety, building in Second Life unleashed a creative impulse that he had not previously engaged with. Whilst an emotional resistance to learning to use Second Life is theoretically plausible, there is little evidence to suggest that any of the students who experienced anxiety or apprehension went on to find skill development more difficult than their colleagues. As such, this explanation appears satisfactory neither for why LE11 perceived herself to be ahead of her classmates in skill development, nor why estimations of time and effort to learn specific skills differ radically.

K4 asserted that apprehension over learning to use Second Life is rooted more in the expectations of the individual than the complexity of the technology:

> ‘There's a steep learning curve on it [Second Life] as well, but I think that's really like a mindset, as opposed to actually being a difficult thing to do, because it's not a difficult thing to do. You know, it's just a wee bit long winded, I don't think it's hard to use, and it's a mindset where people have to realise that this is the future and things like this are the future, so get used to it’ (K4, Kirkhampton)

Whilst K4 initially suggested Second Life has a ‘steep learning curve’, he immediately qualified this by attributing difficulty to individuals’ expectations. The emphasis, therefore, is not on the difficulty of specific skills, or divisions between basic and advanced skills, but on the stances particular users adopt towards learning. By focusing on the ‘mindset’ of students, K4 has offered a useful analytical commentary; Second Life does not have a ‘learning curve’ per se, rather the process of learning is a product of specific learners’ interaction with Second Life. Yet the ‘mindset’ of individual learners is not irreducible, and we can begin to enrich and unpack K4’s analysis by considering several questions. Firstly, what constitutes ‘mindset’? Secondly, from where is ‘mindset’ derived or informed? And thirdly, how is ‘mindset’ transformed in engagement with Second Life? These questions are the central issues in students’ perspectives, concerned with articulating the ways in which students anticipate, experience, and evaluate engagements with Second Life. When considered in this way, ‘mindset’ is not an intrinsic property of particular students, but a discourse of engagement produced in the learning situation.

In sum, different estimations of the ardour and timescale of learning to use Second Life are evident. Variation in these estimations appeared both inter-class and intra-class, suggesting that disparities in the skills being cannot wholly account for disparities in perspectives. Furthermore, time spent by students in

Second Life outside of formal classes was not usually devoted to learning skills such as building or animating, but more often is spent engaging with other users and communities. It does not seem to follow that spending more time in Second Life necessarily implies greater proficiency with all Second Life skills. Another possible explanation for disparities in estimations is student anxiety or apprehension, yet in each case where feelings of anxiety or apprehension were reported the student in question progressed to become a competent (often highly engaged) user. A more fruitful avenue of analysis is to link the difficulty of learning directly to the individual learner. This approach suggests that Second Life itself has no inherent difficulty or learning curve, but the difficulty of any specific skill is closely related to the perspectives and proficiencies of the learner.

In section 5.2, the contention that learning to use Second Life is closely related to the individual learner is explored by examining how students' existing skills are leveraged in learning to use Second Life. I call these skills 'foundational' because of their role or, in some cases, perceived role in underpinning practices in Second Life.

5.2. Foundational skills

I have thus far focused temporally on the learning situation; that is to say that the biography of specific students has not been part of the analysis. By biography I mean quite specifically the previous experiences and extant perspectives of the individual. As may be evident from the conclusion drawn in section 5.1, the omission of biography from the analysis is unsatisfactory. If perceptions of the difficulty of learning to use Second Life are largely rooted in the perspective of the student then clearly the biography informing perspectives is relevant to any analysis. Much of the forthcoming analysis will be based on this premise and so it is prudent to ensure clarity at this point; the perspectives of students *inform* their experience of Second Life, and the perspectives of students are *informed by* their biography. This does not imply that perspectives

are static; they may indeed change as a result of the engagement with Second Life. Yet it does imply that close attention should be paid to be points of connection between the past and the present (situation).

Foundational skills were identified by students in reference to capacities developed outside (and before) the learning situation. In her reflections on learning to communicate in Second Life, LE8 related how her skills from using other CMC technologies proved invaluable:

> ‘If I didn’t do instant messaging, and Facebook I probably would really suffer with it, because obviously, you have all, like, these little things, like ‘R’ instead of ‘are’ and you have, like, little things like that to, ah, quicken the typing. So, I think if I didn’t do instant messaging on Facebook or web messenger, you’d really suffer, actually, communicating because, same with the performance, if you don’t type fast obviously it’s going to be, like, they’ll be like, “oh, what’ s going on here?”…it would take too long’ (LE8, Leebridge)

LE8 remarked that her communicative actions in Second Life were made easier by her previous experiences with social networking and CMC technologies. By drawing on skills developed through other practices, LE8 established a framework for action in Second Life; quickening typing with contractions. As she noted, without proficiency in ways of using type-chat, she may have struggled to express herself, with consequences particularly for her theatre performance within Second Life. If we invert this contention, it is plausible that students who do not possess these type-chat skills are likely to struggle to communicate in Second Life. In such a circumstance, a student would either have to develop the foundational skills that LE8 has drawn upon (or equivalent skills) or attempt to continue learning to use Second Life without these skills. The latter solution was deemed implausible by LE8; typing quickly is essential to communication in the virtual world by her account. It is also important to make clear the distinction between foundational skills and efficiency or efficient control. Navigation is an

example of a practice in which multiple systems of control exist[20] and it is possible for a student to continue engaging with the virtual world without developing skills in the most efficient or sophisticated system. This does not, however, undermine the importance of foundational skills, which in the case of navigation might include the use of a keyboard itself. LE8's assertion that certain skills are vital to successful communication in Second Life is therefore an identification of foundational skills that underpin practices in the virtual world. Those who have not yet learned to type quickly and use contractions (or found an appropriate analogue) will need to develop these skills forthwith in order to communicate effectively in Second Life.

Foundational skills may also be identified through their absence. LE1, for instance, commented that a particular challenge was her lack of prior knowledge of software:

> 'I don't know about [Group member 2] and [Group member 1], but I had never used Photoshop in my life so that, again, was another challenge, you know, trying to learn how to use a Mac even. I'd never even used a Mac. Um, and working out Photoshop and, because it's quite complicated. You have to use a template and all this sort of thing, and then you have to get rid of background layers and things to sort out the layers and then you have to upload it…' (LE1, Leebridge)

Unlike LE8, it is the lack of previously developed skills to draw upon that is a feature of LE1's experience. To create the content required for their theatre performance, LE1 and her group had to employ Adobe Photoshop. Because the group had no previous experience or skills in the use of the software, learning to use Photoshop, even to a rudimentary level, required time and effort. The processes used for creating content in Photoshop thus form a foundational skill

[20] The three usual systems of navigation control are through the movement and camera panels in the Second Life user interface, the arrow keys and mouse, or the WSAD keys and mouse. Arguably the user interface panels are the least efficient system, as they are least responsive to input and require the user to occupy their mouse in navigating the avatar (and thus not clicking on other objects, for example)

in LE1's situation[21]. LE1's struggle with Apple Macintosh computers ('Macs') is also instructive in reminding us that operating systems such as MacOS, Windows, and Linux are also complex technologies. Whilst not all engagements with Second Life will involve unfamiliar operating systems, LE1's experiences highlight that basic computing skills are foundational to any practice that is predicated upon computer use. More generally, LE1 and her group demonstrate that foundational skills can be developed alongside Second Life skills, but this will inevitably make learning substantially more difficult and lengthy. Although this contention is commonsensical, it is also revealing. If certain students draw upon foundational skills to inform action in Second Life, whilst others do not possess these skills, it is inevitable that experiences and perceptions of learning to use Second Life will be varied. Returning to the estimations of how long it takes to learn to use Second Life (see section 5.1), the lack of uniform experience with foundational skills may offer some insight into why estimations of the time taken to learn to use Second Life display such disparities.

As is evident in LE8's quotation regarding communication skills, students can offer insightful analysis on the consequence of foundational skills. LE8 discussed the disadvantageous position of a student attempting to communicate in Second Life who has no previous skills in fast typing and the use of contractions. One of LE8's classmates offered a more broad-ranging assessment of the implication of foundational skills:

> 'It needs to be a level playing field for everyone, and it's not. Not at all, it depends how… to some degree how technically minded you are. And I'm quite happy with computers, you know, I'm quite happy to play with them and try different things and what have you. But there are still people in this University that are technophobes, and people that are older than myself. I mean, one of the people…I know she's a complete technophobe; she's double my age, so she's like 40 odd. Um, and she just can't do it' (LE11, Leebridge)

[21] It is important to note that this relates specifically to LE1's situation: other situations will require different foundational skills. Use of Photoshop was not universal.

A metaphor of equality or egality, the ‘level-playing field’, is invoked by LE11 to indicate that students’ capacity to engage with Second Life is uneven. The concept of technical mindedness encompasses both skills and orientation towards practices. Put differently, LE11 commented that capacity to engage with Second Life is very heavily influenced by a student’s ‘mindset’ (as K4 puts it). There are several pertinent features of LE11’s remarks. Firstly, it is evident that she believes some students will struggle with Second Life, whilst others will not. This immediately raises the question of who will struggle, which LE11 begins to answer by evaluating the capability of a classmate, whom she describes as a technophobe. LE11 does not detail the characteristics of a technophobe, beyond the obvious phobia of technology, but she appears to relate technophobia to age. There are clearly shortcomings of this definition. Notwithstanding that ‘40 odd’ is not particularly old by even the Digital Native age bracket (discussed in section 2.4.1); the assertion that students of this age will struggle to learn to use Second Life does not resonate with the data. Those quotations from K4, K6, and C5 in section 5.1, are from students of approximately 40 years old, all indicating the capacity to learn to use Second Life (in some cases with notable ease). It is perhaps more plausible that of the 40 year olds that LE11 knows, including her classmate, she suspected that few would have the foundational skills to learn to use Second Life without great difficulty. It is lack of engagement with technology practices which led to the characterisation of LE11’s classmate as a technophobe, and thus it is these practices, not age per se, which are significant in underpinning engagement with Second Life. Several such practices were identified by LE1 and LE8 above; fast typing, use of contractions, and knowledge of software and operating systems.

Setting aside LE11’s appeal to age as an explanatory factor, we can reduce the issue to a simple statement; LE11 suggests that those students with well-developed foundational skills, particularly computing skills, will find learning to use Second Life much easier than those who do not possess those skills. It is

unclear whether LE11's perspective implies a 'ceiling' level of learning, in which certain students are unable to attain as highly as others due to their lack of foundational skills. I interpret LE11's comment that 'it *needs* to be a level playing field…', with the emphasis on the word 'need', as implying that there is an injustice in the requirement for foundational skills that certain students may not initially possess. Presumably there would be no injustice, no 'need', if students had infinite time in order to become equally competent with the uses of Second Life required for the situation. This is not the case, however, within a university module, where only finite time is available. As such, it seems that LE11's comments do imply a limit upon the progress that different students can make towards learning to use Second Life; the limit of time. Certain students, such as LE11's 'technophobe' colleague, will begin behind in terms of the skills and practices they can draw upon, and thus will have more to achieve within the same time in order to maintain parity with their colleagues. This does not necessarily mean that in practice those students will inevitably fail to advance as far as their colleagues. We have seen with LE8 that she rated her own foundational technical skills as limited (see section 5.1), but made significant progress in learning to use Second Life: arguably more progress than many of her colleagues. To explain actual progress we need a more broad ranging ethnography of influences acting upon a situation, because it is unlikely that foundational skills will be the sole determinant factor of experiences. Other factors are almost certain to come into effect, not least fundamental administrative issues such as attendance and time spent engaging with Second Life practices.

In sum, foundational skills are identified by several students as important in learning to use Second Life. Foundational skills underpin and support actions in Second Life; drawing upon that which is known in order to inform practices which are unknown. These skills were identified when a student became aware of their use or their absence. At least one student, LE11, evaluated more broadly the consequences of foundational skills for students' experiences of learning to use Second Life. In doing so, she identified that students, even

those on the same degree programme, will likely have different levels of competency in foundational skills. Furthermore, those students who have lesser competency in foundational skills will inevitably need to achieve more within the same timeframe (i.e. a module) in learning to use Second Life. This does not preclude success in achieving such learning, but it does emphasise the likely heterogeneity of students' engagements with the virtual world.

5.3. Stances toward learning

We have seen in sections 5.1 and 5.2 that estimations of the ardour or length of learning appear to be influenced by individual's familiarity with foundational skills. Whilst this analytical approach introduces individuals' biography as relevant, it remains abstracted from the specific situation in which students encounter Second Life. This final section of the chapter examines the way in which stances toward learning are influenced by perspectives on the purpose of specific learning situation.

At minimum, a fundamental level of proficiency with Second Life is necessary to use the virtual world. The substantive content of fundamental proficiency may differ, as section 5.1 and 5.2 have elaborated, but ultimately some level of learning is required unless the student is already sufficiently skilled with Second Life to successfully engage with the learning situation. When achieving this fundamental level of proficiency is not perceived to be directly advancing the aims of the situation, a sense of frustration, wasted effort and questioning of purposiveness can be engendered. The situation in question need not be educational. K6, for instance, related this resistance in discussing the potential to hear live Disc Jockeys (DJs) in Second Life:

> 'I've got a radio if I want to hear DJs, there's so many ways of listening or interacting or connecting with that type of sort of music now, why go to the bother of signing up, creating an avatar, going through that whole process just to listen to music? So you know if it was just an individual thing you

wanted to do, that would be an awful lot of signing up and creation just to do something that is at your fingertips anyway' (K4, Kirkhampton)

Whilst K6 acknowledged that it is possible to listen to DJs within Second Life, he questioned why this would be desirable when other methods of listening are available and, arguably, easier. Signing up to a Second Life account and creating an avatar are cited as actions required to achieve in Second Life what could be achieved more easily through, for example, a radio. We might plausibly add finding a location where a live DJ was playing and navigating an avatar to that location as necessary additional tasks that K6 did not mention. Listening to a live DJ is possible once sufficient proficiency with the virtual world is developed, but reaching this point does not advance aims as much as offer an alternate way to realise them (i.e. through Second Life rather than a radio). As such, K4 perceived this learning process as needless complexity; extra effort adding little or no value.

A negative disposition toward effort perceived to add little value is shared in specifically educational scenarios. LY3, for instance, observed that learning to use Second Life is an undesirable addition to an online learning situation:

'I think if I'd wanted to log into an online learning thing, whether it was a lecture or whatever, I'd just want to log on, I wouldn't want to be messing about with all the other interfaces' (LY3, Lymford)

Like K6's example of listening to a DJ, LY3 commented that features of Second Life do not necessarily offer any benefit in a learning situation and thus she would not want to use them. Whilst LY3 did not elaborate on what situation is being considered, she used the example of a lecture; a formal teaching session. The interfaces of Second Life – such as chat interfaces, navigational interfaces, Heads-Up Displays (HUDs) and so forth – are positioned as superfluous to the purpose of the online learning situation she envisages. Compared to the other online learning portals used at Lymford (such as WebCT) Second Life is

perceived to involve many additional elements that may be distracting, require effort to understand and use, and add little to an online lecture. Like K4, LY3 is negatively disposed to using the interfaces and processes of Second Life when this is perceived as unnecessary.

These forms of resistance can also be linked to competition over resources; particularly time. LY15 was aware of the limited resources available in university modules and expressed concern that time that must be spent learning to use Second Life:

> '…you have such a limited... time, almost, as an undergraduate on a module or whatever, you couldn't spend too much, I mean I don't know how the [Geography 1] module worked but I can't imagine you could devote too much time to it, you know, you've almost got to sort of lecture the facts or whatever and it might be almost wasting time to experience tech like that' (LY15, Lymford)

The sense that learning Second Life within the context of a university module might be surplus effort is captured by LY15 in the phrase 'wasting time'. LY15 does not claim that experiencing Second Life is always wasted time, rather that using the virtual world – and particularly learning to use the virtual world – would compete for the same time that is used to 'lecture the facts'. LY15 assumed that learning to use Second Life would not be an aim of the module (i.e. part of 'the facts') but would be an addition; perhaps a virtual 'field trip' as we have seen in the literature (Edirisingha et al., 2009). This assumption appears justified for instances in which the virtual world is used as a platform for facilitating other learning, such as LY3's online learning scenario. In other instances, such as the Chelby module, virtual worlds are the object of analysis and learning to use them *is* a module aim. The degree to which pressing concerns over available time emerge will thus depend on the particular application of Second Life within the learning situation.

There appeared to be little resistance to learning to use Second Life when it was a significant facet of the module aims, such as at Chelby or Leebridge. LE1, for instance, omitted her numerous struggles with learning animation (see section 5.1) when asked whether she had any difficulties with Second Life:

> '…not really difficulties. I think everything went as we thought it would. It was just things about Second Life that are a bit annoying, so you have to wait for things to res up, um, a lot and you have to learn everything well in advance, um, for things to work properly. I mean, the live stream from the internet as well, you know, and we had to make sure that was all loaded up very well for people who might be at home so that they could play it' (LE1, Leebridge)

The difficulties noted by LE1 are problems with the software or hardware configuration (e.g. server lag) and are mostly beyond students' control. The exertions in learning to use animation software that LE1 described are notably absent. Such difficulties are conceptually similar to the processes that K4 and LY3 have implied would be 'wasted time'; learning to use the Second Life interfaces and achieve a desired effect. Rather than considering this learning process wasted time, however, LE1 represented it as normal practice by omitting it from her account of difficulties with using Second Life. Learning to use the virtual world was not, in LE1's comments, an extra-curricular (or pre-curricular) effort; it was a significant and important aim of the learning situation.

A division can thus be drawn between two positions: those who conceive of learning to use Second Life as an extra-curricular effort, and those who conceive of learning to use Second Life as normal, curricular effort. Whether such effort (curricular or extra-curricular) is perceived to be justified likely depends on the circumstances of use, such as the ease of access to similar capabilities or content elsewhere. K4, for instance, noted that he would be unlikely to use Second Life to access live DJs when he can do so more easily elsewhere. Yet it is plausible to conceive a scenario in which Second Life might offer unique capabilities and thus a degree of extra effort to learn to use the

virtual world might be tolerated. Many of the role-play applications of Second Life noted in section 2.3.1 (e.g. Hudson & Degast-Kennedy, 2009) were promoted on the principle that the virtual world offered unique beneficial capabilities. As such, we cannot take judgements about learning to use Second Life in isolation from the social circumstances in which the virtual world is encountered. The perceived ardour and lengthiness of learning to use Second Life can only be understood in terms of the situation in which Second Life is being used and the benefits such use is perceived to entail. As a corollary, considering learning to use Second Life as normal, curricular effort is not the same as considering Second Life use for a specific practice as beneficial. LE1, as we shall see in chapter 6, is unenthusiastic about the potential of Second Life for forum theatre. Yet this did not mean that she perceived learning to use Second Life within the Theatre 2 module to be wasted effort, because this effort was towards the module's aims. Although, of course, she might perceive that the entire module was wasted effort (I have no data to comment on this), within the specific relationship between Second Life and the learning situation there is no such judgement.

An important consequential question is whether pedagogy can provide a sufficiently detailed explanation of the differences observed above. It is, after all, a feature of how Second Life is used pedagogically whether the virtual world is the object of analysis for a situation or a platform for facilitating other learning. In section 2.3.1 I drew a tripartite divide between modes of virtual world use based on the contention that the virtual world can be studied generally (mode 1), specific disciplinary practices enacted within it studied (mode 2), or used as a platform to facilitate other learning (mode 3). Clearly the case of an online learning platform, posited by LY3, would tend to fall into the third mode; a platform to facilitate other learning. Outside of educational technology courses it is uncommon to study online learning platforms (such as WebCT) but rather the platform would provide a site and technology by which to engage with other material. As such it appears plausible that when the Second Life is perceived as being used in 'mode 3', effort learning to use the virtual world could be

considered extra-curricular. This can be contrasted to a mode 1 use, such as the Chelby module, in which the virtual world itself is being studied. In the latter case, the module aim is to study the virtual world and, as we have seen above, there is little resistance evident in learning to use Second Life. The subsequent analytical question is whether differing pedagogic application of Second Life is the main factor that influences perspectives.

Whilst my initial analyses posited a pedagogic explanation, I do not believe it captures the entire analytical picture. Firstly, it is evident that the pedagogy being discussed is not necessarily an instantiation of pedagogy within the modules studied in this thesis, but envisaged applications of the virtual world. The Lymford modules both explored Second Life as a possible geographic space; no element of the module discussed using Second Life as an online learning platform, as LY3 suggested, or for attending lectures remotely, as LY1 suggested. These possibilities were hypothetical situations conceived by the students, not a directly experienced pedagogy of the learning situation. Put differently, it is through reference to educational discourse – not empirical experience - that students are framing perspectives on learning to use Second Life.

Secondly, the distinction that LY15 draws between Second Life and 'the facts' suggests an important conceptual issue that goes beyond the structure of specific learning situations. This distinction implies that Second Life is not topic core material and thus is an optional addendum to which time may be devoted if it is not required for the more important, core topics. A judgement of this kind, however, requires much broader ranging analyses than simply reflecting on how long is required for learning to use Second Life. Instead, such a judgement must draw upon perceived connections between Second Life and discipline to determine that Second Life is not core material to the topic and some rationale (however tacit) for why this is so. Similarly, a concept of education must be drawn upon to determine that time spent lecturing 'the facts' is more useful than that spent on studying Second Life. To make such a determination we must

reflect on, for instance, the structure and availability of resources in an educational setting, how we believe these resources should be apportioned for best educational effect, and the likely results of endeavours such as lecturing 'the facts' or using Second Life. Given that few students (or, indeed, anyone) could plausibly hold all potential alternative answers to these questions, it is likely that judgements will be normative and reflect common, rather than theorised or understood, practice.

The potential importance of normative practice gives rise to questions about how individual students engage with learning more broadly. Do perspectives shift, for instance, if time for personal engagement with the learning situation is limited by other commitments? This question requires us to examine the learning situation in light of other engagements within students' lives that might be salient to their encounter with the virtual world. Additionally, questions are raised about the role of mediated representation informing normative practice. Does the identity of the virtual world in popular, religious, corporate, or academic culture influence perspectives towards its use within a university module? And following this, what divergences exist within the apprehension and representation of these discourses that might help to explain why students hold differing perspectives? These questions lead us toward exploring the existing webs of meaning into which Second Life enters and within which perspectives are framed. Just as extant norms (discussed in chapter 4) inform action in Second Life, so are extant discourses influential in shaping understandings of Second Life within the context of the learning situation.

5.4. Chapter summary

This chapter has examined students' reflections on learning. Within the chapter three elements have been discussed:

1. Students' evaluations of the time taken to learn to use Second Life. Different reflections on the ardour and length of learning to use Second Life were

posited by students, both between research sites and within research sites. Differing pedagogic tasks and skills learned, varying time spent in Second Life, and resistance or anxiety were all considered as possible explanations. None of these factors provided sufficient explanatory power without further recourse to discussing the individual learner. As such, the most plausible explanation arising appears to be that the perspectives and proficiencies of the individual learner are the predominant influence in the difficulty of learning to use Second Life.

2. The importance of foundational skills. A foundational skill is defined as an underpinning skill for which there was no pedagogic aim in the module, but was nonetheless employed in the engagement with Second life. Several foundational skills were identified by students which aided, or would have aided, in learning to use Second Life; including fast typing and software knowledge. It seems likely that the total range of foundational skills will be broader than those identified by the participants, and the skills deemed to be foundational will vary according to the specific pedagogic tasks within the learning situation. Not all students have equal proficiency in foundational skills and as such engagements with learning are likely to be heterogeneous. Students with less developed capacity in specific foundational skills will inevitably need to learn more within the same timeframe. This does not mean, however, that those students inevitably find learning to use Second Life harder, or that those students cannot progress to be highly proficient users of Second Life; more factors were influential than extant proficiency alone.
3. Stances toward learning. Judgements about the purposiveness and appropriateness of learning to use Second Life were closely linked to the purpose for which use of the virtual world is envisaged. When learning to use the virtual world was conceived as an aim of the situation there was little resistance evident from students. Conversely, concern was raised by students over the purposiveness of learning when learning to use the virtual world was not seen as an aim of the situation. This dynamic illustrates the importance of situational arrangements in shaping how students position the

process of learning to use Second Life. Moreover, it is evident that judgements of purposiveness are rooted in broader networks of influences than only situational arrangements such as pedagogy. Discourses such as discipline and education are implicated in situating judgements about purposiveness.

In the next chapter (6. Wider networks of meaning) we turn to examine these discourse that are involved in decisions about purposiveness and, more generally, in positioning the virtual world.

6. Wider networks of meaning

This final data chapter examines the ways in which wider networks of meaning situate perspectives on the virtual world. Although the engagement with Second Life is frequently novel, this engagement is framed by existing ways of meaning-making. Discourses work as lenses through which students can make judgements about the virtual world's relation to extant meaning structures and processes. The act of adjudging the conceptual relationship between the virtual world and another discourse I have called 'positioning'. I have found it useful to consider these relationships in spatial terms; how 'far away' are these concepts perceived to be? If one discourse is perceived to 'contain' certain elements, is the virtual world perceived to contain similar elements? And if we were to visualise discourses in some form of map, where would Second Life 'sit' in relation to them? These spatial metaphors are not equivalent to situational analysis, but they influenced by the logic of Clarke's (2005) analytical approach.

In chapter 4 I argued that norms of action can influence experiences of the learning situation. This chapter widens the scope of analysis to look at the perceived relationships between Second Life and the discourses in which these norms are situated. The analysis presents a series of heterogeneous discourses applied in heterogeneous ways, leading to a complex relationship between virtual world and existing networks of meaning. These connections between the virtual world and extant discourses are important in understanding perspectives; they illustrate the ways in which the engagement with Second Life is contextualised within participants everyday lives and meaning structures. Five discourses are examined in the chapter: discipline, digital games, education, family, and work. I have identified these discourses as persistent reference points for participants' reflections on both the learning situation and virtual worlds generally. The former three – discipline, digital games, and education – are discourses prevalent in the data; meaning structures drawn upon by numerous students in various ways when discussing the virtual world. The latter two – family and work – are more esoteric; discourses most relevant to several

specific individuals. If we wish to understand perspectives on the use of virtual worlds, we must understand the way in which they are shaped by these extant discourses.

6.1. Discipline

Constructions of discipline and disciplinary practice were an analytical lens through which numerous students viewed the virtual world. This section explores the perceived relationship between discipline and the virtual world and, specifically, the way in which the virtual world was situated in relation to disciplines (both the students' own and other disciplines). I use the term discipline to refer to a classification system by which the material and conceptual components of academic subjects are delineated[22]. Although they become classification systems through common action (e.g. repeated use and segregation of objects along perceived disciplinary boundaries), classification systems are individual constructs. It is in the latter capacity that I analyse discipline here; as a product of individual interpretations of common materials such as textbooks, expert discourse, and so forth

The analysis of disciplinary discourse is divided into four elements. Firstly, the influence of perceived relations between disciplinary standards and Second Life is discussed. Secondly, the influence of perceived relations between Second Life and extant technologies used within disciplines is examined. Thirdly, the influence of perceived relations between Second Life and application domains (spaces deemed suitable for disciplinary practice) is explored. Finally, other disciplinary concerns, such as the multiple constructions of disciplinary discourse, are noted.

6.1.1. Disciplinary classification

[22] The definition I offer here is necessarily constrained by the focus of the thesis. For more detailed discussion of 'discipline' see, for instance, Becher and Trowler (2001).

Discipline appeared to be a lens through which students analysed the relationship between Second Life and material or conceptual components already considered to be disciplinary. These existing components are the standards against which the virtual world is assessed in making a judgement about its relation to the discipline. LY1, for instance, highlighted the discordance between the standards of 'being geographic' and the standards of the virtual world:

> '…it's [Second Life] not like a real geographical space in that, well first of all everything is computer generated and it's not, well some people import models from the real world or that sort of thing, but it's still not real. It's not a geographical space in that you can't go as small scale in the real world, so you'll never get the detail of the real world. And obviously you can teleport places which takes away the spatial aspect to stuff, because I suppose in Second Life everything is infinitely connected and it doesn't really have a spatial scale in that sense…' (LY1, Lymford)

LY1 articulated several conceptual components of geographic information, such as spatiality and scale. He suggested that the virtual world is fundamentally non-geographic because of its abstract rendering of spaces, lacking detail of attributes such as scale. Certain standards of the discipline are being advanced against which the virtual world is compared. LY1's comparison is intriguing insofar as he appeared to be comparing Second Life and the physical world, rather than, for instance, Second Life and other GIS technologies. One crucial divide appears to be the distinction between virtualising a model of physical space, and producing a virtualisation without any physical referent. The former is relatively common practice in GIS, whilst the latter LY1 considered 'not real'. Not only is spatiality important, but the type of spatiality (and its connection to scale and connectivity) is also important in order to be considered geographic. It is not enough, in LY1's perception, to be merely spatially modelled; there are more sophisticated concepts of spatiality against which the virtual world can be compared. Ultimately, LY1 was unconvinced that Second Life concords with the

disciplinary setting; the virtual world is positioned as an 'other' that should not be classified (in its current form at least) within the bounds of the discipline.

In other cases, there is perceived resonance between standards of Second Life and of the discipline. LE1 discussed the congruence between forum theatre and Second Life:

> 'Augusto Boal's, he's a Brazilian practitioner and he wanted to use theatre as a tool to bring communities together and solve problems. So that, that's basically what it [Forum theatre] is and it's using oppression, so it's like dealing with oppression, and we use the idea of bullying, and also identity. We looked at identity because that's kind of what Second Life is about with your avatar and how you look, and we wanted to sort of put this message across and ask people to respond to it…' LE1, Leebridge)

The role of identity in LE1's interpretation of forum theatre is aligned with the role of identity in Second Life; conceived as central to the purpose or ethos of the technology. Because identity (or issues of identity) was perceived to be a disciplinary concept, Second Life was seen to have an affinity with the discipline. For LE1, Second Life could be situated as conceptually close to the discipline; a kindred spirit to theatre. This concordance is, however, between conceptual components of Second Life and the discipline; aims, ethos, foci, and so forth. LE1, upon completing the theatre project, reflected on the discordant relationship between practical components of the discipline and Second Life:

> '…to be honest, I didn't think it worked very well. I mean, I think our performance was okay but, you know, we had 25 minutes for the performance and it wasn't really a long time to fully develop things the way we wanted to. And, your forum theatre is, is not straightforward. I mean, you know, you can take hours and weeks developing a play with that and, in terms of being spontaneous, yeah, it's not easy on Second Life because you have a character which is quite static, as I said. You can sort of stand and

unless you know how to make the gestures, get the gestures; you can't do very much physically. It's all about the typing and saying things that you want to say. And forum theatre is about getting up there on a stage, being physical, voicing your opinions, changing scenario which is, it's not easy.' (LE1, Leebridge)

Unlike the conceptual affinity perceived between Second Life and forum theatre, the practical components of the discipline were, according to LE1, not well aligned. She considered the performance too short to be effective, particularly in contrast to standard timeframes involved in forum theatre. Similarly, LE1 derided animated movement in Second Life as awkward, unspontaneous, and technically difficult to produce. LE1's objection is summed up in the contrast between the participatory and spontaneous nature of activity in forum theatre and the mechanical, pre-determined scripting of activity in Second Life. Whilst Second Life and forum theatre were perceived to share some conceptual components, enacting forum theatre in Second Life was seen as practically challenging. This situation is the inverse of LY1's observation that Second Life shared many practical components with GIS (e.g. the 3D rendering of terrain), but had little conceptual resonance with the discipline. In both cases, however, discipline was an interpretative lens through which the virtual world was assessed and positioned.

Perceived standards of other disciplines were also applied in situating the virtual world. C2, for instance, posited several cases in which he foresaw resonance between Second Life and a discipline:

'…for the sciences I think it would just be great, you could have an illustration, a 3D sculpture or something and go, this is DNA, press it and see what happens and then it launches the DNA, that's something. It's a good environment for showing the practical elements of what things do like climb inside a combustion engine and then watch everything, tick and stroke away. I'd find something like that really valuable if I was learning. Maths? I don't

> really see how something like Second Life could help with that apart from just the discussion of it…History I suppose because you could just recreate world events' (C2, Chelby)

A series of disciplines are discussed in C2's comments: genetics (or sciences more broadly), engineering, mathematics, and history. In each case C2 offered an assessment of affinity between disciplinary standards and Second Life's capabilities. Second Life is advanced as particularly useful in disciplines where modelling events or objects can be a powerful tool, such as history and engineering. For disciplines where modelling is perceived to be less useful, Second Life is situated as non-disciplinary; mathematics is the primary example given by C2. These assessments are, however, idiosyncratic interpretations of disciplinary discourses. Warwick University have used Second Life as a modelling space for mathematics (Wood, 2012) and it is therefore unlikely that they would concur with C2's interpretation. In this analysis it is not relevant whose interpretation is 'correct', merely that the relationship between Second Life and discipline is a lens through which the virtual world was positioned, and, furthermore, that such lenses may be heterogeneous. Moreover, it is evident from C2's comments that the application of disciplinary lenses in positioning Second Life is not limited to the discipline in which a student is involved, but can also include interpretations of other disciplines. Due to lesser empirical experience, interpretations of other disciplines are likely to be more heavily influenced by media discourse, stereotypes, and pre-HE experience than understandings of a student's own discipline. Whatever the constitution of disciplinary discourses, it is evident that they can provide a lens for positioning the virtual world.

Discipline at this abstract level is a classification of material and conceptual components linked with a common discourse. The relevance of the virtual world to this classification is assessed through its relation to conceptual standards, such as important foci, and to material standards, such as modes of producing and enacting disciplinary practices. In relation to these standards the virtual

world can be positioned in a variety of ways, including conceptual concordance or discordance and practical concordance or discordance. Specific practices may be congruent with disciplinary standards, whereas other practices are not, leading to ambiguity over the relationship between virtual world and discipline (which will be discussed further in 7.1.2). At a macro level, discourses of numerous disciplines, of which the student does not necessarily have extensive experience or knowledge, might be involved in positioning Second Life. The association between the virtual world and disciplinary standards is thus influential in evaluations both of particular tasks and of the affinity between Second Life and discipline more generally.

6.1.2. Disciplinary technologies

Second Life was also situated in relation to extant technologies in disciplines. These technologies in some manner embodied disciplinary standards and by this association were 'disciplinary technologies'. Various disciplinary technologies were invoked in discussions of Second Life, including digital technologies, such as Google Earth, ArcGIS, and Maya, and analogue technologies, such as maps. As extant elements of a discipline these technologies provided a known reference to which the virtual world could be compared. K6 commented on the concordance between Second Life and Maya, a 3D modelling software which he had subsequently encountered:

> '...I've never been involved with 3D before. I found it a very good introduction to the actual space, looking at the different coordinates and axes and stuff like that. whenever we moved on to Maya, in the second part, we were doing Maya in another module, it sort of informed quite a bit of that because we were aware of the space and how to move things around in the space and stuff like that, which was completely alien before, I'd worked and done some art work in two dimensions with maybe [Adobe] Photoshop or something like that, but I'd never sort of interacted via a 3D sort environment' (K6, Kirkhampton)

K6 drew similarities between the skills needed to model objects in Maya and those learned in Second Life. Awareness of 3D spatial qualities and standards, such as coordinates and axes, are highlighted as points of convergence between the two technologies. The disciplinary standards embodied in Maya were also perceived in Second Life, effectively allowing K6 to develop foundational 3D modelling skills through Second Life use before subsequently applying them in Maya. Whether K6 perceived the disciplinary relevance of these spatial concepts during his Second Life project – which was prior to using Maya – is unclear. It may be that K6's understanding of multimedia refigured somewhat after using 3D modelling packages and, at the time of interview, he had come to see Second Life as more closely linked to the discipline. Alternatively he may have been aware of the relevance of spatial concepts to modelling and immediately perceived these standards within Second Life. Regardless of how the connection came to be made, K6 indicated that Second Life had disciplinary relevance partly because of its resonance with modelling practices in Maya. Technologies such as Maya are instantiations of the disciplinary standards discussed in section 6.1.2, embodying the focus or purpose of (one element of) disciplines. These embodiments of standards thus serve as markers against which virtual worlds can be compared and contrasted.

In other cases, discordance between disciplinary technology and Second Life was asserted. LY14 contrasted the capabilities of the GIS software ArcGIS to Second Life:

> '…Second Life wasn't designed to [manipulate project data], whereas ArcGIS was designed to manipulate DTMs [Digital Terrain Models] and overlays and stuff. It's what the software was made for, and if you're trying to put on more uses you're gonna have to have plug-ins and stuff to Second Life, and I don't think that's what they want for it, they want it more of a....more of a social site, rather than, they're not trying to compete with ArcGIS, they're just trying

to show that nurses can use it, maybe not geologists or whatever.' (LY14, Lymford)

LY14 distinguished differences between the capabilities of ArcGIS and of Second Life. Whilst ArcGIS was posited as a fundamentally geographic technology designed to manipulate geographic data, Second Life is related as a technology through which this manipulation can be done only with difficulty; potentially only through modifying the software. Moreover, LY14 suggested these disparities in capabilities are intentional; that Second Life was not designed to be a geographic technology similar to ArcGIS. That Second Life is not competing with ArcGIS does not automatically make it a non-disicplinary technology of course; it may fulfil a different, yet important, disciplinary role. The distinction drawn between nurses and geologists using Second Life, however, serves to further evidence LY14's positioning of the virtual world as a non-geographic technology. Unlike ArcGIS, which is seen to embody geographic standards, Second Life is positioned as a technology not designed, suited, nor desired to embody those standards. The brief reference to nurses using Second Life is another reminder that discourses of other disciplines are invoked in situating the virtual world.

As with disciplinary standards, students can also draw upon conceptions of disciplinary technologies beyond their immediate experience. LY7, for instance, commented on extant disciplinary technologies from non-geographic disciplines:

'GIS data is very high end, if you're doing something like English, for example, there's nothing there that you couldn't not get through virtual worlds kind of thing. Well I think so, I think so, because you could put journals and books on there that you'd be able to access' (LY7, Lymford)

LY7 suggested that Second Life may have greater resonance with certain disciplines because the virtual world better complements their particular disciplinary technologies. LY7 highlighted how certain forms of disciplinary data

and standards may be more easily embedded in the virtual world; texts used in English (literature) were offered as an example. As with disciplinary standards, the salient issue is not whether LY7's claim is credible[23], but that the lens of discipline shapes perspective on for what the virtual world may be used.

Discordance between the virtual world and other disciplinary technologies is not necessarily perceived as an insurmountable disconnect between standards. The possibility of integrating disciplinary standards into the virtual world was suggested by LY4:

> '…I pray actually for that kind of merger between Linden labs and Google Earth…If you have that kind of merger, that's gonna be the next thing, especially for geographic information systems, because you can now look at the terrain the way it is on the earth's surface in Second Life, you can correct it, you can access places which aren't normally accessible on the earth's surface, there for exploration purposes, for research purposes, you can actually fly to and see for yourself these things. So it holds a lot of potential for geographic information systems, but not right now because the terrain are not too geographic right now' (LY4, Lymford)

As with LY14's comparison between ArcGIS and Second Life, the virtual world in its current form is posited as non-geographic because of absent conceptual standards[24]. Yet LY4 still saw Second Life as a potentially valuable GIS technology that would allow users to access geographic spaces in new ways. In order to realise this potential, however, the virtual world must come to embody disciplinary standards, it must become 'geographic' in order fulfil a role as a GIS technology. One way in which this transition could occur, LY4 posited, is through the merger of a disciplinary technology (Google Earth) with Second Life; combining the advantageous attributes from both technologies. Clearly

[23] And indeed it is very difficult to present large quantities of text in Second Life, a likely objection from those working in predominantly textual disciplines (such as the social sciences or literature)

[24] In other comments LY4 identified some of these missing elements as 'Scale, topographic details…locational attributes' (LY4, Lymford)

regarding the virtual world as non-disciplinary in its current form does not preclude perceiving potential disciplinary relevance for the technology were it to be changed to meet disciplinary standards.

Integration of disciplinary standards into Second Life will not, however, always produce a novel disciplinary space. C1 elaborated on how embedding disciplinary standards into the virtual world may simply replicate existing technologies:

> 'I could probably... Well, I couldn't but someone could, if you like, write a computer lab in it and have people learning the programme and you could have... you could be learning how to write C [programming language] in Second Life. But you think, well, there are already environments in which you can do that. So, I don't know how much something like a virtual world would help them.' (C1, Chelby)

Unlike LY4's proposed merger of Google Earth and Second Life, creating a lab-like environment in the virtual world for computer programming was not regarded as potentially advantageous by C1. The foci of these comments are slightly different - LY4 is discussing disciplinary practice and C1 is discussing learning – but the contrast is still of analytical interest. In the case of learning a computer programming language, C1 was unconvinced that Second Life would not simply duplicate existing technologies, rather than fulfilling a unique role. This is contrasts to LY4's comment that a merger of Google Earth and Second Life would potentially create an innovative, niche application. Thus whilst refiguring the virtual world to embody disciplinary standards may predispose students to view it more readily as a disciplinary technology, this alone does not imply it is a *useful* disciplinary technology. As C1's and LY14's comments emphasise, merely replicating existing capabilities is not readily perceived as fruitful; particularly when modifications to the virtual world are required to even reach the stage of replication.

Technologies embody disciplinary standards and are an immediate and material representation of the standards discussed above in 6.1.1. Ultimately, whilst disciplinary technologies appear to serve generally as a lens for understanding and positioning the virtual world, the exact nature of this positioning will depend on individual interpretations of disciplinary discourse and particular technologies already involved in that discourse.

6.1.3. Application domains

I define application domains as spaces (literal or figurative) in which a discipline acts, given that disciplinary action is applied to certain spaces and not others. These are sites in which disciplinary standards are applied and technologies used and thus the relationship perceived between Second Life and these sites is an important indicator of resonance with the discipline generally. LE8, for instance, contrasted her group's planned performance in Second Life to a previous performance on the streets of the local town:

> '…the problem is, with Britain is, when we did Invisible Street Theatre for another module we didn't get any reactions whatsoever, which was, the whole point of the module was to get reactions and get them, the desire to change, type of thing. And where in Second Life you're more likely to because you will have different people from different cultures or backgrounds who will see it more likely as this isn't right, we, you know, something needs to be said' (LE8, Leebridge)

The virtual world is situated as a space for theatre practice; an alternative to, for instance, the streets of Britain. LE8 described Second Life as a different kind of theatre space, one with different qualities and where different persons may be present, but that embody disciplinary standards sufficiently to be a space in which theatre practice can be enacted. Standards are will differ, however, depending on idiosyncratic interpretations of 'theatre' (the discipline). Example qualities might include spatiality, a communicative framework, and that the

virtual world can be observed (and thus have an audience). Alternatively, none of these qualities may be standards of consequence (they are, after all, my reflections and I am not a theatre practitioner). Nonetheless, LE8 positioned Second Life as a space for disciplinary practice; a place in which one can ‘do’ theatre.

LY9 assumed an opposing view regarding the applicability is Second Life as a geographic domain:

> ‘I couldn't even say it'd that useful for like geo-referencing things because it's a different world isn't it, the Second Life, it's not like putting a place mark on Google Earth sort of thing, you put a place mark in Second Life and it's a totally different world, so I sort of thought, I couldn't think of any examples where I thought 'yeah, that's actually a good use of geographical information’ (LY9, Lymford)

LY9 drew a distinction between the Second Life world and the physical world, as modelled by Google Earth. Although LY9 does not use the term ‘real world’ (whilst many of his Lymford classmates do), his phrase ‘different world’ indicates delineation between the space of Second Life and the space to which geography is usually applied. Second Life is not perceived as merely a different space of disciplinary practice, but a technology fundamentally unsuited to acting as such a space. Second Life, it is argued, does not render a geographic expression of the physical earth and thus cannot be considered a domain to which geographical practices and standards can be applied. This perception need not be intransigent; LY4’s comments on a merger Google Earth and Second Life demonstrate how an application domain could be engineered by embodying disciplinary standards. Unlike theatre, however, the fundamental connection between perceived geography and the physical Earth seems to preclude the current Second Life being deemed disciplinary.

As with the standards and technologies, the application domains of other disciplines can also be surmised and a relationship with Second Life posited. LY11, for instance, speculated on the merits of Second Life as a space for sociological study:

> '...perhaps, in terms of sociology. I really don't know too much about it, but in terms of understanding various cultures and different backgrounds of different people, it could potentially like, the first thing that comes to my mind would be a mission, or something like that, to go and find five different people from Ukraine, or something, you know, do that and then if you manage to find, it's also a good way of socialising.' (LY11, Lymford)

LY11 raised the potential to explore cultural or sociological concepts in Second Life. Whilst LY9 argued that geography is fundamentally about the physical earth, LE11 noted that sociology concerns human society and thus can readily find application wherever such society is manifest; including Second Life. These contentions demonstrate how the virtual world can be classified (and potentially de-classified or re-classified) based on resonance with known disciplinary standards and technologies, and the spaces in which standards and technologies are applied. No single element may be sufficient to position the virtual world; it is unlikely, for instance, that a technology would be considered geographic merely because it concerns itself with the 'real world'. Together, however, they are an influential force on perspectives; one powerful discourse informing understandings of the learning situation.

6.1.4. Other disciplinary concerns

Discipline should not be understood, at least in the sense I use it here, as an abstract, objective classification imposed on students, but rather as a personal interpretation of a series of linked standards, technologies, and spaces. To illustrate this point two further quotations are instructive. In the first, LY14 identified the likely division of perspective on Second Life within disciplines:

> ‘…in this school, the GIS section of the school of geography is quite techno-savvy, they're quite happy to use the avatars and the like. Whereas, you know, the more established physical geographers who like rivers and rocks, they're not as keen. They'd rather go down into the lab, give you a sample of a rock and say, you know, 'put that under acid test for 3 days' or whatever. You just can't test things in all scenarios, you need to hold that rock, weather it or whatever, just can't simulate those sort of things in all places’ (LY14, Lymford)

It is claimed that between and within sub-disciplines, interpretations of disciplinary standards and technologies will differ. Whilst the GIS section, according to LY14, more regularly uses digital technologies, physical geographies use an entirely different set of technologies. Perspectives on the virtual world are likely to differ greatly because of the different relationships between these disciplinary technologies and Second Life. As such, ‘discipline’ is highly complex and varied interpretations between sub-disciplinary communities will be consequential for positioning Second Life.

In the second quotation of interest, LE11 observed that even within individual classes or cohorts there are likely to be multiple interpretations of discipline:

> ‘…one of the lecturers said it to me; a lot of the people in our class still see themselves as typical performers. You know, they are drama students as you put it, they are drama students, and they are actors. And that’s not what this course is about. And I think a lot of people when it comes to something like this, want to act because they’ve got the chance to, they’ve finally got the chance to act. It doesn’t matter… it’s because of the freedom basically, you know. Because they haven’t said ‘you have to use Second Life!’ they’ve got a lot of freedom. And that’s why a lot of people are avoiding it because they know think, oh well we can go out in acting instead’ (LE11, Leebridge)

Multiple competing definitions of theatre are identified by LE11. Classmates who ostensibly decided to act instead of using Second Life are deemed to have taken a drama-oriented approach, whereas LE11 argued that the course focus was on the technology and production of theatre performance. The Leebridge cohort are suggested to be acting from different understandings of discipline and, as with the discussion of geographic sub-disciplines above, these disparities in perceived standards, technologies, and application domains likely influence perspectives on the virtual world. Whether LE11's interpretation of the theatre course is the most credible is immaterial for this analysis; it is the existence of differing interpretations that is of concern. Both LE11's and LY14's comments serve to emphasise not simply the importance of discipline, but the variation in interpretations of discipline. Disciplinary discourse shapes perspectives on the virtual world, but that discourse is not homogeneous at any strata of the academy.

Two final considerations on discipline, both somewhat methodological, are of interest to the analysis. Firstly, some of the research sites were 'more' disciplinary than others. Chelby, for instance, was not situated within a disciplinary degree programme, but as a lifelong learning module affiliated to the computing school. Its focus and location within the academic structure were less overtly disciplinary than, for instance, Leebridge; where the theatre module was within a theatre degree programme. Certainly disciplinary discourse was more prevalent in the Lymford and Leebridge data; both modules with strong disciplinary ties and thus a sustained pedagogic narrative of disciplinarity. Whether the absence of a strong pedagogic discourse of discipline is either recognised by students or affects the role of discipline as an analytical lens is unclear. Although we might conclude that the pedagogic discourse of discipline is important because students at Lymford and Leebridge framed the virtual world more frequently in disciplinary terms, this does not necessarily follow from the analysis I have offered above. Interpretations of disciplinary standards, technologies, and application domains (and the personae involved in constructing these facets of the discourse) are, even acknowledging that many

common elements will be involved, individual. At Lymford, for instance, both the class tutor and I framed the engagement with the virtual world as a disciplinary exercise and yet many of the Lymford students rejected the association between Second Life and geography. Perhaps we might infer that framing Second Life within a disciplinary context at all (through introduction as a disciplinary technology, for instance) precipitated future interpretation of the virtual world through this lens. The data is ambiguous here though and, ultimately, there is no way to establish this relationship within the context of this research. Similarly, it is unclear whether less frequent articulation of disciplinary discourse (e.g. at Kirkhampton) can be taken to mean that discipline less readily informs perspectives. Thus whilst it is clear that discipline is important, it is unclear whether for some students it is *more* important in situating the virtual world and, if indeed this is the case, why (and in what circumstances) it is more important.

Furthermore, in the cases discussed in this section the standards of the discourse do not change; they are simply applied to something. Put differently, the classification system – the 'boxes' for sorting meaning – remained the same and the virtual world was sorted within an extant category. Are there, conversely, examples of when the disciplinary discourse shifts to accommodate Second Life? I have not found any such examples in my data, but this does not mean such shifts do not theoretically exist. In the context of literacy practices, for example, Gee has argued that '...words give meaning to contexts just as surely as contexts give meaning to words. Words and contexts are two mirrors facing each other, infinitely and simultaneously reflecting each other' (2000: 190). In the present research at least three factors might obscure such detail:

Firstly, discipline is a discourse constructed through many interactions with material and conceptual components and advocated by numerous actors (e.g. tutor, print media). Such a discourse is inevitably going to possess some 'inertia' (Bowker & Star, 1999); a resistance to redirection. Notions of discipline might therefore by slow to shift, refiguring to incorporate new technologies (such

as Second Life) based only on a sustained engagement with advocates and the technology itself. Short engagements, such as the Lymford workshops, may not provide the sustained engagement required to challenge extant perspectives on discipline.

Secondly, there is no baseline data by which I can judge whether concepts of discipline have changed. Assuming a comparison of pre- and post-module would be illuminating, the only research site in which it would have been feasible to collect this data was Chelby; a largely non-disciplinary offering. For the other sites access to the students before the module began was not readily available. Finally, participants were generally not as reflective about disciplinary standards as they were on the technology and the learning situation. This is understandable, I include discipline here as an analytical lens that shapes perspective; often such lenses are silent, pre-reflective or implicit (see Clarke, 2005). Similarly, the most detailed questions I asked participants concerned their experiences with virtual worlds, not their understanding of the discipline within which they studied. There have been plausible cases made elsewhere that virtual worlds might be involved in learning experiences designed directly to challenge disciplinary discourses (e.g. Dittmer, 2010). Challenging disciplinary discourse was not, however, a pedagogic aim at any of the research sites. Nor did any critical analysis of discipline appear to emerge spontaneously as a result of the virtual world interaction, although whether such reflection would be evident in the research data is unclear.

Notwithstanding these issues, it is clear that discipline is important in shaping students' perspectives on the learning situation and Second Life more generally. The conceptual and material components of disciplinary classifications were articulated by various students as a lens for understanding the virtual world, its position within learning and, more broadly, its position within their lives. Discipline is one of several influential extant discourses that shape perspectives on the virtual world; one element of existing meaning within students' lives that is relevant to understanding their perspectives on virtual

worlds. In the following section the analysis turns to another such element; digital games.

6.2. Digital games

A common association made by participants was between virtual worlds and digital games; computer games were frequently referred to in discussions about Second Life and the learning situation generally. This section charts the positioning of Second Life in relation to the discourse of digital games and the influence of this association on students' perspectives. The discourse of digital games to which the virtual world is associated was found to be heterogeneous, constituted of multiple types of digital game and multiple ways in which the virtual world is conceived as related to digital games. Similarly, perceiving an association between the virtual world and digital games did not necessarily shape perspectives favourably. Problematic previous experiences with digital games, for example, could lead to anxiety over using the virtual world within the learning situation. Ultimately, the association between virtual worlds and games was influential in perspectives, but it was a complex relationship that manifested in differing ways amongst the participants.

6.2.1. Associations with games

Almost all participants appeared to be familiar with digital games to some degree, in many (though not all) cases through experience as a game player. Comparisons between the digital games discourse – what constituted a game, who was involved in gaming, and so forth – and the virtual world were commonplace, yet the influences that inspired these associations were not homogeneous. Graphical qualities perceived to be shared by Second Life and digital games were frequently a point of connection:

> ‘And it's also that 3rd person kind of view is quite like a video game. Having the camera up behind you, so many games that have been like that’ (LY7, Lymford)

LY7 identified the relationship between user, avatar, and camera in Second Life as comparable to many modern computer games. The default 3rd person view and, in other comments, the alternative 1st person view are both likened to modern console computer games. To continue the language of standards, the virtual world was perceived to be congruent with the graphical standards of digital games. Similar sentiment on the interface between Second Life and user was expressed by LY5:

> ‘I suppose it’s just the whole interaction, the look and feel. I mean using the same keys as when you do gaming, W-S-A-D and all the rest of it, I dunno it still feels too gamey for me’ (LY5, Lymford)

The manipulation of keyboard inputs also used for digital games – particularly First Person Shooter (FPS) games – is indicated by LY5 to be an example of the game-like quality of interaction within Second Life. Association between actions or artefacts and particular discourses is evident here, with simple mechanical input (using specific keys to move an avatar) engendering a perceived link to digital games. It is demonstrable that any resonance between the standards of digital games and Second Life is enough for digital games discourse to become a relevant frame of reference in positioning the virtual world.

Distinguishing between Second Life being considered a game and being analysed in relation to digital games discourse is crucial. Not all participants suggested Second Life was a game:

> ‘Well, I keep saying RPG [role-playing game] because I do see Second Life as an RPG to some degree. Um, it's not a game, I know that, I'm very aware of that, but it is in that same category.’ (LE11, Leebridge)

The relationship between games and Second Life is much more ambiguous in LE11’s comment. Although she perceived resonance between the virtual world and role-playing games, she clarifies that this is not merely because Second Life *is* a role-playing game, but rather that the two share some (but presumably not all) features. In her discussion of Second Life LE11 made reference to both digital games and table top role-playing games (such as Dungeons and Dragons), suggesting that the performance of characters – or perhaps displacement of identity – are common features of the three technologies. It is clear here that the discourse of digital (and non-digital) games is influential because of a perceived resonance with Second Life, but not necessarily because Second Life is seen as a digital game itself. Like the conceptual resonance between Second Life and forum theatre perceived by LE1 (see 6.1.1 above), links can be made between the virtual world and a specific discourse without the virtual world necessarily being classified as a part of that discourse. The ambiguity in LE11’s comment reflects her positioning Second Life in relation to the discourse of digital games generally and the discourse of roleplaying games specifically, but not entirely a component of either.

The distinction between specific types of digital game, such as role-playing games, was also evident in other comments. K7, for instance, described his gaming experience:

> ‘I’m not much of a gamer at all, my level of game these days is playing Mario Kart on the Wii, Guitar hero, that sort of stuff, but like I said, whenever computers first came out I was around for the ZX-Spectrum and that kind of thing, so I'm more of an arcade game than this immersive style of game I suppose. So I didn't particularly like Second Life.’ (K7, Kirkhampton)

Whilst K7 had both previously and currently played digital games, none of these games were perceived to be similar in style to Second Life. Second Life was characterised as ‘immersive’, to which K7 contrasted his experience with arcade games and current generation console games. Implicit in the phrase ‘my level of game’ is that these digital games (e.g. Mario Kart) are not as sophisticated or intense as other digital games currently available (a point that K7 developed in other comments). The notion of ‘level’ helps distinguish between different classifications of digital game, some of which K7 perceived to be more congruent with Second Life (i.e. ‘immersive’ games). What exactly constitutes an immersive and an arcade game is not crucial to this analysis, rather it is the distinction that K7 raised between different kinds of games that can serve as a framework for understanding and positioning the virtual world. In fact a spectrum of different digital game types emerged from the data. At least seven distinct digital game categories are discussed within the data, each referred to by one or more participants:

1. Console first-person shooters (FPS)
2. Online FPS
3. Beat ‘em up/fighting games
4. Online casual games
5. Roleplaying games
6. Simulation and world builders
7. Virtual worlds

Some categories were represented by iconic publications, such as Call of Duty (console FPS) or The Sims (simulations and world builders), others were only referred to by category labels. Thus whilst associations between Second Life and digital games were relatively commonplace, the nature and meaning of associations were not necessarily analogous.

Digital games discourse is not, it would seem, a homogeneous classification of artefacts and practices, but rather it is a series of individual interpretations with

some shared social basis. Individual interpretations may differ and thus the points of resonance between digital games and Second Life may also differ; as we have seen in the data. This point is particularly important because assumptions about norms of action differ greatly between games and, as we shall see in the next section, these assumptions can be transposed onto the learning situation.

6.2.2. Applying gaming standards

Associations made between Second Life and specific types of digital game can lead to a variety of assumptions about appropriate practice in virtual worlds. We have seen in chapter 4 that assumptions about spatial and communicative practice can lead to particular courses of (and reflections on) action; existing frameworks of meaning-making can inform action in the virtual. In section 4.1.3.3 I referred to the derivation of spatial norms in Second Life on the basis of experiences with digital games. The broader discourse of digital games is the system of meanings that underpins these spatial practices. In chapter 4 I purposefully referred to 'digital games' generally in order to avoid confusion, but there are inevitably multiple systems of spatial practice associated with different types of digital game. Nonetheless, it is evident that norms drawn from digital games and underpinned by digital games discourse can influence action in Second Life.

Spatial practice is not the only standard that might be perceived as congruent (or incongruent) between virtual world and digital games. LY15 elaborated on how her experience of beat em' up games shaped her expectations of behaviour in Second Life:

> '…the only time I've had that, sort of, being a person-computer game thing is, I've only ever played games when you beat people up. So someone would be in front of me and I'd be like 'oh, how do I hit them, how do I hit them?!', and that wasn't me being a sociopath or anything, I don't normally react like

that but because that's what I kind of associate that with, there's two people stood there; you then start fighting don't you? But I couldn't work out how to hit them, though I assume you probably can. But I found that a bit weird, you're not gonna fight so what else are you going to do?' (LY15, Lymford)

As LY15 discovered, norms of action in digital games do not necessarily transfer unproblematically to Second Life. Although the presence of multiple avatars was common to both beat 'em up games and the virtual world, the behavioural norms were disparate. In the digital games LY15 had previous played, it was appropriate to fight with the other avatar, whereas in Second Life this was (usually) inappropriate. The mechanical systems for taking action were also different, meaning LY15 was not able to 'hit' (punch) the other avatar even though she assumed this was the appropriate course of action. Thus whilst digital games discourse was an important influence on perspectives, associations with digital games did not necessarily lead to any tangible benefit for students. They could instead lead to the transfer of inappropriate behaviours based on the assumption that digital game norms will apply in Second Life.

Alternatively, departure from previous experiences of gaming may not engender any specific transfer of behaviours, but still offer a lens through which to understand the virtual world. C1, for instance, suggested that the Chelby engagement with Second Life differed greatly from his gaming experiences:

'…my experience before [the course] of any kind of online gaming was combative, go in with your mates and kill people and leave… the gaming side is, is, is ultra-competitive. It tends to be mostly impolite. [laughter]. If you ever play online, you've basically got a bunch of rude homophobes and, and that's basically what you eventually become used to and you try your best not to, not to, fall into it. But Second Life to me, apart from a couple of little instances with griefing and stuff, seemed to me a sort of a collaborative and friendly environment, so I enjoyed that' (C1, Chelby)

C1 distinguished between interaction styles (and contexts) in his experiences of online gaming and his recent experiences of Second Life. Unlike LY15, C1 did not report attempting to kill other avatars in Second Life, even though this would have been appropriate in online games he had previously played. Nor did he discuss any expectation that these combative practices would be transferred into Second Life in the same manner as he indicated expecting voice communication to be transferred (see 4.2.1). Assumptions about the transfer of norms between digital games and virtual worlds thus appear selective and differ between students. The divergence from previous experiences of digital games did not cause C1 confusion, as appeared to be the case for LY15, but rather C1 indicated that he enjoyed the 'friendly' and 'collaborative' nature of the virtual world. Digital games discourse still provided a lens through which Second Life could be understood, but this did not imply that the virtual world itself need be positioned as a digital game. Similarly, divergences from digital game standards did not necessarily imply subsequent confusion or frustration merely because there was little resonance between particular aspects of virtual world and digital game (e.g. combat between avatars). The consequences of divergences depended greatly on their nature and context; C1, for instance, clearly found that a departure from homophobia and rudeness was an advantageous divergence.

Some perceived associations between digital games and virtual worlds did have negative connotations. LE8 described how she had been told that Second Life was similar to The Sims, a digital game of which she had previous experience:

> 'I used to play *[The] Sims*, but I was never good at it. I couldn't build. I couldn't do any, I couldn't do any of the things that you're, you're supposed to do in Sims. And so, when they were like 'Oh, you're going to be able to build a set and you're going to,' I was, like, 'Oh God, it's like *[The] Sims*!' And it was, it was just daunting to think that, like, I was going in this place. And I, when I asked about Second Life all the reactions I got was 'it's like Sims' and I obviously didn't have a great experience with Sims. I only played Sims 1. I

didn't even bother with Sims 2 or 3, regardless of if, if it was going to easier, or whatever. I just didn't want to know because Sims 1 was too hard for me' (LE8, Leebridge)

LE8 explained that her previous experiences with The Sims had been troublesome; she felt unable to complete the tasks she perceived to be central to the game experience (e.g. building) and had consequently refused to continue playing or try new versions of the game. As such, the association made between Second Life and The Sims was a source of great anxiety for LE8; she anticipated struggling to grasp Second Life in a similar manner to her struggle with The Sims. This association between Second Life and The Sims is made prior to LE8's empirical experience of the virtual world, informed by testimony from friends who equally may or may not have had empirical experience of the virtual world. LE8 noted that she had even considered dropping out of the Leebridge module when she was informed by friends that Second Life was similar to The Sims. As section 5.1 noted, however, LE8 reframed her outlook to treat the virtual world as a developmental challenge, rather than an insurmountable obstacle. Nonetheless, it is clear that digital games discourse can have numerous connotations, depending on the types of games played, the substantive content of gaming experiences, and the degree to which gaming experiences are interpreted as troublesome or trouble-free. In LE8's case, she had a history of game playing that, according to her friends at least, was resonant with Second Life, but this association was a source of discomfort. Digital games discourse can thus shape perspectives negatively, even in a situation when a student has (ostensibly) relevant past experience of a digital game. This is not to say that all connections between digital games and Second Life will be similarly problematic, but rather that a history of relevant digital game playing is not *necessarily* advantageous in either mindset or skillset.

Ultimately, the relationship between digital games and Second Life is complex. Although a link between Second Life and digital games was posited by

numerous participants, this did not equate to a uniform influence on perspectives. Instead there were multiple interpretations of the link between virtual worlds and digital games and multiple consequences of the perceived association. In some cases the perception of resonance between a specific type of digital game and Second Life led to an assumed continuity of norms or practices between them. This assumption could be problematic when it was either not shared by others (e.g. students, residents) or proved to be impractical (e.g. punching other avatars). Alternatively a departure from norms of a particular digital game type may be a source of interest or reflection, but not troublesome in any significant way. Finally, perceived resonance between a type of digital game and Second Life may be problematic when students have troublesome previous gaming experiences. Expectations of norms, and estimations of one's ability to take action, could be influenced either negatively or positively depending on this gaming history. Positioning Second Life in relation to digital games can thus lead to a variety of anticipated and realised consequences that shape students' perspectives.

An analytically important feature of this relationship between digital games and Second Life is the degree to which even similar associations have heterogeneous consequences. In chapter 4, for instance, LY11's and C5's alternative ways of conceptualising spatial practice in Second Life were analysed. C5 made similar connections between Second Life and digital games as LY11; he suggested he had initially conceived of virtual worlds as games prior to participating in the Chelby course. He did not, however, transpose onto Second Life the same logic of spatial practice (drawn from digital game norms) as LY11. One plausible explanation for this disparity is that it reflects the digital games that C5 played[25]. McGregor (2007) has discussed how forms of spatial arrangement differ between digital games and, furthermore, that players often utilise spaces in ways unintended by their designers. Continuing the theme of this section, there is good reason to suppose that experiences of digital game spatial norms are heterogeneous and that these norms may be transposed onto

[25] I do not have data available to comment on C5's gaming history and so this possibility is difficult to fully assess

Second Life in disparate ways. Alternatively, other discourses may have more strongly influenced C5's approach than digital games discourse. C5 commented that his perception of virtual worlds changed as a result of the module, from seeing virtual worlds as 'just games' to a multi-faceted conceptualisation of the technology. Perceived similarity between Second Life – or rather, the Chelby course in Second Life – and physical classroom settings could be one influential aspect in this shift, noted by both C5 and C1 in their reflections. This possibility highlights the intersection between discourses of education and Second Life, which is the subject of the next section. Whilst reflections on learning to use, and learning with, Second Life have been considered in earlier chapters, the next section is more closely concerned with the how Second Life is positioned in relation to educational aims, actors, settings, and technologies.

6.3. Education

Views expressed by students on the context, content, and process of learning served as a lens through which to situate Second Life within a particular educational space. Distinctive concepts of school education, HE, campus and distance education, part- and full-time education, and even specific pedagogic uses of virtual worlds are commented on by various participants. The influence of educational discourses is contiguous with the issues of learning analysed in chapter 5, in which we saw how the relationship between virtual world and learning was evaluated. This chapter examines the role of wider educational discourses in positioning the virtual world. I have disambiguated distance education in section 6.3.2 as an exemplar of a particularly complex topic due to its multiple competing constructions by participants. The analytical picture emerging from both sections 6.3.1 and 6.3.2 is of the complexity of learning both as a concept within itself and in its intersection with the other discourses we have thus far discussed.

6.3.1 Educational contexts

Participants' representations of education frequently drew upon divisions between domains or levels of schooling. LY3 argued that virtual worlds are best suited to educational settings with children:

> 'I can't really see how it [Second Life] would help at graduate and postgraduate level of teaching. I can really see how, I've got a child who's 14 and I can imagine him loving it and loving the idea of getting into that world and learning stuff that way, with that very hands-on approach, but then I'm a bit sort of like, surely you get to a level and it's quite limited in what it can teach you? Unless you are doing the researching and building point or side of it' (LY3, Lymford)

LY3 draws a clear distinction between HE and earlier educational experiences. Although she did not explicitly refer to secondary education, LY3 perceived an affinity between the virtual world and the learning approaches of students within the compulsory schooling age bracket. Perhaps more specifically, LY3 perceived a lack of affinity between Second Life and HE settings; the virtual world's teaching and learning potential is described as 'limited'. The term 'limited' is analytically important when contrasted with the pedagogic activities that LY3 regards as potentially useful for HE; researching and building. Whilst LY3 indicated that taking a 'hands-on' approach, that involves much interaction or practical activity, is a strategy suitable for younger learners, she argued that this approach will become increasingly inappropriate as the 'level' of education increases. LY3 may be referring to, for instance, simulation and role-play as activities of limited value to HE. Whatever the specific activities LY3 intended to represent as 'limited', it is clear that she had differing expectations of higher and other 'levels' of education. These expectations are influential in her positioning of the virtual world as a technology better suited to the learning approaches of her mid-adolescent child than a postgraduate geography student. The virtual world is represented as a technology or space with certain qualities (e.g. the capacity to provide a 'hands-on approach) and matched with an educational space in which these qualities are deemed to be relevant. Extant discourses of

particular educational spaces are therefore influential in situating the virtual world as an educational technology.

C1 also observed affinity between virtual worlds and educational experiences for children. Second Life, C1 suggested, has the potential to create interactive simulations that may prove highly engaging for children:

> 'I can see there's a lot of uses for it, primarily I think in educating children or, or young people, you know…I've got two primary school-aged boys and they'll do, um, research projects on... They'll do the Vikings one year or Spanish history or the Roman empire and you'd think something like the Roman empire, it doesn't take a lot of thought to think I could build a room this size in Second Life and put a whole lot of interactive stuff in there and, and, and my son could have a walk around it rather than either sitting within an encyclopaedia or sitting in front of Wikipedia or listening to his teacher, ah, and if you can get that level of interactivity I think obviously adds a lot more.' (C1, Chelby)

C1 emphasised that the capacity to produce interactive simulations is potentially valuable for primary education. Although he makes no explicit commentary on children's learning approaches, it is evident from C1's remarks that he perceived high levels interactivity to be beneficial for their educational experience. The virtual world is posited as an alternative to current technologies involved in learning - both artefacts, such as Wikipedia, and processes, such as listening to teachers – which may offer increased interactivity and richer educational experience. Like LY3's comments, it is through the intersection of C1's understanding of Second Life and of particular educational spaces (i.e. primary education) that he positioned the virtual world. It is important to note that school pedagogy and the learning approaches of children are not necessarily synonymous, particularly where technology is concerned (see Crook, 2012). It is difficult, however, to disambiguate these two elements within C1's and LY3's comments. Whilst we might conclude that since C1 and LY3

discussed children's education they specifically meant schools, they may equally be discussing preferences which are not currently realised by schools, but could be realised through the use of virtual worlds. Nonetheless, different discourses of education are evidently influential in positioning the virtual world.

This analytical picture becomes somewhat more complex when the idiosyncratic constructions of educational discourses are considered. The same technological capacities identified by C1 and LY3 as aligning the virtual world with children's education were argued by K6 to be of significant value to HE:

> 'It [Second Life] would be great on the units that we're doing at the minute, it would be great if they could have some kind of virtual classroom that we could actually interact with maybe pieces of hardware that are being taught, for instance showing signal flow for like audio, because audio's a fairly big part, or maybe even looking at things like the software we're using, software licensing and things like that you'd have to get past. What else were we doing that this might fit in with....there's already using it for the science thing for the computer, you've obviously seen the inside of the computer workings, obviously that can be applied to any, loads of other subjects' (K6, Kirkhampton)

K6 indicated that creating interactive, visual models of hardware would potentially be useful for several other modules on his multimedia degree. Modelling and simulation techniques in Second Life are not linked with children's education, as LY3 suggested, but with contemporaneous HE modules. Disparities thus exist between participants' articulations of educational discourses; LY3's views on HE, for instance, appear to differ radically from those of K6. Individually constructed discourses of education – subject to the developmental pressures of educational history, life experiences, media discourse, and so forth – can thus work to situate the virtual world in heterogeneous ways.

Differing modes of study – particularly the full-time / part-time dichotomy – also carry particular expectations that influence understandings of the learning situation. Studying as a part-time student, for instance, is indicated to shape expectations about social interaction within the learning situation:

> ‘I think everyone on the course was part-time. Part-time students don’t tend to have as much social interaction as fulltime students do anyway, previously been a fulltime student when I was younger, but I think the part-time people, they tend to just turn up and do the module and then leave. So, I, I wasn’t expecting anything different from that. It’s strange. I was actually thinking, when you came in, you [researcher] probably know more about the students on this course than they know about each other.’ (C1, Chelby)

C1 identified the delimiting of engagement with colleagues to the class space (and time) as common to both the Chelby learning situation and his previous experiences as a part-time student. C1 noted that he was not expecting more intra-class interaction than was realised within the learning situation and he did not reflect negatively on the degree of social interaction within the module. Conversely, K3 (another part-time student) was frustrated that his experiences within the learning situation were socially isolating and did not include collaborative activity outside of formal tutorials. Part-time students do not necessarily carry homogeneous expectations based on their study mode into the learning situation; we might also expect that the same is true of full-time students. Nonetheless, expectations that are partly shaped by study mode are constituents of broader educational discourses. Put differently, study mode is another element within individual constructions of educational discourses that may influence perspectives on the learning situation. Additionally, study mode may intersect with other discourses more readily within certain contexts. Specific disciplines and institutions may have higher proportions of students engaged in alternative study modes to full-time, campus based study. Indeed specific courses have a higher proportion of part-time students, as C1 identifies regarding the Chelby module.

Educational discourses are also rooted in disciplinary understandings of learning context and process; particular understandings of education are shaped by the disciplinary contexts in which those discourses are formed and applied. As such, the relationship between the virtual world and learning intersects with the relationship between discipline and learning. Those processes, contexts, and content that are perceived to be relevant to the latter intersection – discipline and learning – are likely to be reflected in the former intersection – the virtual world and learning. K6, for instance, referred specifically to other disciplinary modules within multimedia that would benefit from the use of virtual world technology. Similarly, LY3 commented on the uses of virtual worlds that fit and do not fit within the context of postgraduate geography. Applications of Second Life excluded from one intersection between discipline and learning might plausibly fit with another. Virtual world role-play, for instance, has been applied to disciplinary learning (Hudson & Degast-Kennedy, 2009). It is based on particular understandings of Second Life that these discourses are invoked to position the virtual world within particular educational (or non-educational) spaces. In the examples of LY3, C1, and K6, each draws upon an interpretation of the virtual world; capabilities, limitations, styles of engagement, and so forth. As we have seen, such interpretations are not easily dictated by pedagogic discourses of the technology, but are shaped by a range of influences both internal and external to the learning situation.

There is therefore an intersection between discourses of discipline, institution, and study mode that is likely to be reflected in interpretations of the learning situation. How does the educational discourse advanced by, for instance, part-time, distance-based, archaeology undergraduates (e.g. Edirisingha et al., 2009) differ to that advanced by full-time, campus-based, computer science undergraduates (e.g. Esteves et al., 2011)? And how far do the probable disparities in these discourses shape perspectives on learning situations specifically and the use of virtual worlds generally? These questions echo some of the structural factors that are likely to shape perspectives, such as discipline,

study mode, and pedagogy. Beyond this we must account for the individualised educational discourses that are shaped by historical factors, such as individual trajectories through education, as well as contemporaneous factors. We have seen these discourses shaping the interpretation of the virtual world based on understandings of learning for adults, children, and of school and HE. Similar or identical practices (e.g. 3D modelling and simulation in Second Life) are situated in radically different ways depending on the intersection of these individualised educational discourses with other discourses of technology, discipline, and more.

Differing individual interpretations of educational discourses are therefore pertinent in understanding perspectives on the educational use of virtual worlds. Variation in individual interpretations of particular learning spaces, contexts, or practices are likely to engender differing perspectives on the use of virtual worlds. The case of distance learning, to which we now turn, is a useful illustration of how multiple competing visions of an issue widely perceived among participants as relevant to Second Life can raise ambiguities over the relationship between virtual worlds and particular learning spaces.

6.3.2. Distance learning

Like the educational discourses of schooling, HE, and study mode, distance learning was posited as a particular educational space which included specific practices and modes of engagement. Moreover, multiple understandings of distance learning, which acted to position the virtual world as fulfilling differing roles or serving differing interests, were evident in different participants' comments. In this section I set out some of the competing visions of distance education advanced by participants and discuss the ways in which the virtual world is positioned through these interpretations.

The potential for virtual worlds to radically alter distance learning was observed by LY4, an international student studying on campus in the UK. A traditional

portrayal of distance learning through (online) correspondence is contrasted to the portrayal of distance learning with Second Life:

> '…instead of having that online course, you know some people go to university by online correspondence, you know, you just mail your lecturer, he mails your assignment, gets, you know, your assignment, you can have that in Second Life, where not just you but other students within the university get to sit with you in a classroom and the lecturer's actually talking to you either with text, like we used, or with some kind of voice over that everybody listens, and you can actually probably raise your hand in the classroom, you know get a prompt to raise your hand, you ask questions and you get answers. That is a bit more realistic, is a bit more real, that just having somebody mail, you know...learning by correspondence, I think that should be the next level for online courses.' (LY4, Lymford)

These contrasting images reveal something of both the extant discourse of distance learning being advanced by LY4 and the intersection between technological capabilities and learning. On the former, learning by correspondence is portrayed as an asynchronous dialogue between student and tutor (lecturer). Moreover, this relationship is represented as abnormal and unrealistic, in contrast to a realistic and authentic classroom experience. The importance of educational place and spatial practice in learning is evident in LY4's comments; physical co-location and the spatial etiquette of the classroom are presented as core elements of authentic educational experience. In juxtaposition to these spatial visions of education, asynchronous distance learning is portrayed as an impoverished form of engagement that could be elevated to 'the next level' through synchronous, spatial activity. It is here that LY4's interpretation of Second Life's technical capabilities intersects with this vision of distance learning. Second Life is advanced as a space in which a classroom experience can be produced regardless of the distance between students; LY4 matched attributes of the virtual world to perceived deficiencies in distance learning. The virtual world is thus situated as a technology for

producing place in educational contexts where place is currently absent. This alternative possibility for distance education resonates with LY4's personal educational experience (i.e. travelling abroad to study); he commented elsewhere in the data that students would not necessarily have to travel internationally to experience classroom learning at foreign universities. This possibility was also raised by campus-based, UK students. LY1, for example, raised the potential for synchronous, remote classes in Second Life:

> 'I think that in terms of education it [Second Life] does have quite a lot of potential in actually allowing, I've been thinking about this before, for example, I'm sure this happens already but [Lymford] is like a global university with campuses in like here, *[Country A]*, *[Country B]* whatever, and so say you wanted to combine a course you could have a virtual lecture theatre with the lecturer giving a real PowerPoint presentation with people sitting in their seats and they can put up their hand if they want to ask a question and you can get that sort of learning environment from home that you might get at university' (LY1, Lymford)

Like LY4, LY1 included familiar spatial practices, such as hand raising and sitting in lecture theatres, in his vision for distance learning with Second Life. We have also seen in chapter 4 that spatial norms are readily transferred into the learning situation to structure action, thus it is perhaps unsurprising that familiar systems of spatial practice are envisioned as being sustained and applied to new learning spaces. Both LY1 and LY4 advocate the possibility of creating virtual classroom spaces, in which students can be co-located in Second Life. These perceived applications of Second Life are thus shaped by both understandings of particular educational arenas (e.g. distance learning) and normative understandings of educational practice.

Engagement with virtual worlds in the learning situation can, however, also disrupt familiar discourses of educational practice. C1 was attempting to avoid synchronous educational spaces when he pursued a distance learning module:

> ‘I’m studying part-time and working fulltime...I’d previously done two modules per week, which is quite a lot to cover over a couple of evenings, so I’d actually looked for a distance learning module. So, I was actually a bit disappointed to discover this wasn’t so much a distance learning module as a part-time module that I did at home.’ (C1, Chelby)

The flexibility of distance learning modules, in which study can be conducted asynchronously, was valued by C1 because of his extensive existing commitments across study, work, and family (see section 6.4 for further discussion of these commitments). Far from the impoverished version of classroom learning portrayed by LY4, distance learning was portrayed by C1 as advantageous because of its flexibility. It is important to recognise that these are contextually dependent interpretations of distance and campus learning. It is not necessarily the case that distance learning would be valued in all situations by C1, but within this specific circumstance the asynchronous, flexible mode of distance learning was more desirable than the synchronous mode of co-located learning (physical or virtual). This particular vision of distance learning is therefore quite different LY4’s; it is a vision of a useful mode of learning that C1 did not believe would benefit from inclusion of synchronous activity in Second Life. It is evident that alternate positioning of (broadly) the same activity is possible when different interpretations of distance learning are encountered. Although LY4, LY1, and C1 are all discussing the inclusion of synchronous, virtual world activities within distance learning modules, the perceived consequences of these activities are different.

It is plausible that disparate interpretations of distance learning are influenced by differing levels of experience. Whereas LY4 and LY1 largely seemed to discuss possibilities for distance learning and without any personal involvement[26], C1 was actually involved in distance learning contemporaneous

[26] This does not elide the possibility of past engagement with distance learning of course. Within the context of this argument I make the analytical assumption that such experience

to his comments. There is, however, a cautionary note to be sounded here. Distance learning students, as with campus-based students, are unlikely to share homogeneous understandings of distance learning; we have seen in the sections above how complex and dependent on myriad factors such understandings are likely to be. Additionally, the perceived affinity between Second Life and distance learning articulated by multiple campus-based students also serves to position the virtual world. We have seen how this affinity is both asserted by (for instance) LY4 and rejected by C1 based on differing understandings of distance learning. In the cases of both the campus and the distance learner, Second Life is located in another educational domain; alternately as a platform for distance learning and as a subversion of distance learning. In both cases, however, the arrangements of synchronous, campus learning are implicated; it is the consequences that differ. Whilst participation in distance learning doubtless shapes perspectives in a differing manner to campus-based learning, there is unlikely to be a unitary influence from either situation. More relevant are the multiple competing ideas of distance learning that existed within the data and, most likely, within any student population, and that these competing ideas serve to position the virtual world in varying ways.

Visions of distance learning advanced by participants are an example of a specific complexity within the topography of a wider educational discourse. In this analysis we have explored the heterogeneous representation of different educational spaces, places, and modes within that wider discourse. Not only is the concept of education highly complex in its intersection with other discourses, such as discipline and technology, but also within itself. Moreover, educational discourses are subject to modification in response to the learning situation. LY4's reimagining of distance learning was a radical shift in his understanding as a result of engagement with Second Life. Whether the potential he identifies is realised within any specific distance learning module is largely irrelevant; For LY4, the concept of distance learning now involves the perceived possibilities of virtual worlds. As such, perspectives can be dynamic

would have been discussed at interview (as many other relevant experiences were), but this is founded on the omission – rather than inclusion – of data and thus is tentative.

and not easily predictable. Even given a similar understanding of concepts such as HE, full-time study, campus-based study, and so forth, we must still contend with the way in which students have different experiences within the learning situation which will resonate with particular aspects of individual's histories and current life circumstances.

The major discourses of discipline, technology, and learning are core influences that seem to exert substantial influence on perspectives. The influence exerted is, however, both complex and heterogeneous. Moreover, the influence of major discourses is demonstrably a product of idiosyncratic interpretations that can be generated entirely within the learning situation, sustained from entirely outside of the learning situation, or refigured through integration of novel and extant interpretations. Individual interpretations are also grounded in individual life circumstances and biographies, and it is to these final sets of discourses that the analysis shall now turn.

6.4. Other discourses

In addition to the three major discourses (discipline, digital games, and education), other discourses influenced the perspectives of certain students. This section charts two such discourses: work and family. These discourses are less prevalent, but are nonetheless important for those students that referred to them. It is plausible that there are innumerate 'minor' discourses in the sense that students' conceptual lenses are unlikely to be composed solely of 'discipline', 'learning' and 'technology'. More likely is that there are many discourses that are of less immediate relevance to the learning situation but may be invoked when students' observe they are in some way related. This is important insofar as it implies that discourses will be relevant for some students when they are largely irrelevant for others. The examples below of 'work' and 'family' are useful demonstrations of this observation. Many students may have been employed concurrent to the learning situation, but only for some was employment salient to the learning situation. Similarly, all (or at least the

overwhelming majority of) students presumably had family, but only for some was family relevant to the learning situation. With this distinction in mind, we first examine discourses of work.

6.4.1. Work

Discourses of working lives encompassed commitments to working hours, workplaces, commuting, and profession. These considerations were most pertinent to those simultaneously employed and studying, such as the part-time students C1 and K3. For K3, pressure from job routines required him to use the virtual world in specific ways:

> ‘I’m a part time student, whereas some of the other guys were full time students, therefore they had the time to meet and come and do while they were on campus during the day 9-5, whereas I don't have that luxury really being at work, so any work I'd maybe done or started was always in the evening, done in the evening, any time I had to pop into Second Life, and there was never any sort of crossover’ (K3, Kirkhampton)

The learning situation and employment place competing demands on K3’s time. K3 remarked that, unlike his full-time peers, he could not spend time on campus during the day because of his contracted working hours. The learning situation instead had to be structured around his work commitments: he logged in during the evening, from off-campus, worked alone, and so forth. In theory, K3 could have chosen to spend time with his university colleagues on campus during the day, but the consequences of doing so would, presumably, have been punitive and undesirable. Work discourses can thus exert power over students such as K3 for whom there is a need to resolve competing demands for time. C1, also a part-time student simultaneously working full-time, expressed similar sentiments when discussing the period of notice for class instructions:

> ‘Sometimes it was, it was quite late in notice as well. I mean, sometimes we wouldn’t find out until the Wednesday afternoon where we were going on the Wednesday evening. So, um, it’s inexcusable. Then I don’t... Um, some nights I was getting home from work and going... Because I’m sort of further down, um, 25 miles from [Chelby], so I was maybe working until five o’clock or half five and getting off the train and getting home and getting straight onto the classroom. So, sometimes I hadn’t even looked at what was due to happen because it had been posted at half past four in the afternoon’ (C1, Chelby)

For C1 the workday and class times were often consecutive, or at best separated by a short break between returning home and beginning the class. Instructions on class activities that were posted during the working day were not received by C1 until the lesson time itself, leading to a last minute rush to prepare for the class (e.g. by downloading relevant software). Although C1 observed that a longer period of notice would have been preferable regardless of his work commitments, it was the interaction between the late notice and his inability to check the module forums because of work commitments that made the situation particularly troublesome. Job routines influenced the ways in which both C1 and K3 could engage with the learning situation; the spaces and times in which the students chose to engage were shaped by the dominance of employment in resolving competing demands on their time. Put simply, jobs came first. Conversely, competing demands from employment and the learning situation were absent from full-time students’ perspectives. Whilst these students may well have also been employed (in part-time jobs, for instance), this work did not seem to exert similar influence on the learning situation as for some of their part-time colleagues[27].

[27] A potential alternative here is that other university modules may place demands on students’ time that compete with the learning situation. If this was the case then it receives little mention in the data. LY11 indicated that he might use Second Life more after the conclusion of his undergraduate dissertation, and LE8 observed that she spent more time in Second Life when she felt pressured by other university work.

The importance of employment in shaping perspectives differed between students and competing time pressures for part-time students was not the only reason for links to be made between the learning situation and employment. An alternate association was between the use of Second Life in study and in employment. C5 offered an example of how Second Life might be useful to his work at Chelby:

> '…I'm also doing some kind of, er, development work in this department and I'm developing another module for kind of online delivery, um, so it was kind of, I suppose it was maybe with one eye, or, you know, could this… could this be used as part of this module as well, um, I was interested in it from that point of view.' (C5, Chelby)

C5 approached the Chelby module with the intention to analyse the value of the virtual world for other work that he was developing: an online learning course. Whilst this analysis was only one part of C5's stance toward the virtual world, invoking the discourse of work positions the virtual world as a technology with potential professional significance beyond the Chelby module. Work discourse may also refigure with the addition of a new technology that might be situated within a professional context. C5 discussed further how Second Life might be suitable for use within other HE modules on which he worked, despite its likely unsuitability for the online module on which he had originally commented. Conflicting demands on time and space are relatively entrenched, structural forces of employment, but the concept of the profession is conceptual; potentially subject to change in light of experience in the learning situation. Professional roles, like discipline, can offer a lens for positioning the virtual world and which may itself be refigured through engagement with Second Life.

Employment can also be relevant as a historical discourse. Past employment can provide an analytical framework for the learning situation, demonstrated by K2's consideration of the consequences that would await his 'rogue' colleague after the deletion of K2's work:

> ‘If it had been in industry and it [K2’s work] hadn't have been able to be recycled, then it would have been a waste of weeks of work, so therefore from my own experience working in industry it would have been a case of sackable offence plus costs, so he could have been fined all the costs associated with doing that, taken to court to recoup money spent on the weeks of work that was deleted, so, you know, when you take it into consideration like that’ (K2, Kirkhampton)

Previous professional experience is one lens with which K2 could analyse and impress the severity of his colleague’s actions. The likely consequences in industry (previous employment) also served as a contrast to the actual consequences in the learning situation, in which K2’s group were required to rebuild the deleted model and to continue to work with the perpetrator until the project culmination[28]. Although K2 did not suggest that the university should necessarily employ more stringent disciplinary procedures, the figure of industry and employment nonetheless influences how K2 viewed the incident. Work discourses can thus function as historical discourses in a similar manner to technological discourses; providing an analytical lens and structure for action drawn from previous engagements.

Working lives matter when students perceive that the learning situation and work intersect. This intersection can take several forms, such as competition for time and space or analytical lens for the learning situation. There may be many more possible intersections that are not represented in the data I have collected; this will depend on the particular students (and their particular commitments) within any learning situation. The salience of work discourses, and their subsequent influence on perspectives, is determined by individual biographies. This is not to say that work discourses do not interrelate with other

[28] It is unclear exactly what happened to the group member who deleted K2’s work. Although the group continued until the completion of the project it is likely that some disciplinary action was taken against the perpetrator by the module tutors. I do not, however, have data on this action.

discourses, such as pedagogy. It is difficult to conceive that C5 would have entered the Chelby module considering Second Life as a possible distance learning technology if the module had been entirely co-located in a computer lab. Similarly, events in the learning situation spurred the connection to professional experience for K2. Had his work never have been deleted then it is probable that the analysis he offers above would never have occurred; the contrast between the learning situation and industry may have been largely irrelevant. Such associations with work appear more fluidic and transitory than the relatively obdurate connections between learning situation and, for instance, discipline, although this is perhaps less accurate of structural intersections between working lives and the learning situation, such as the need to engage with the virtual world outside of work routines. In either case, discourses of work are one influence of particular relevance to a subset of students, usually (but not necessarily always) part-time students, for whom employment is or has been a major structuring force in their lives.

6.4.2. Family

Like working lives, family lives were also pertinent to certain students' experiences. The discourse of family encompassed commitment to times and places, relations to other persons, and the historical influence of family upbringing. Family appears only infrequently in the data; it is does not emerge as a significant influence on perspectives for the majority of students. This does not imply that upbringing is unimportant, but rather that little resonance is articulated (and perhaps perceived) by most students between the learning situation and family.

The intersection between family and the learning situation can, as with employment, result in competition over limited time. C1 extended his comments on commitments to work routines to include the figure of the family:

‘If I’m working five days a week and spending the weekend taking my kids around and I’m spending two evenings in classes, which only really leaves me three evenings and I’ve got coursework to do for two different courses, I don’t want to devote whatever time I have left to wander around in Second Life for six hours and visiting exhibitions or going to random parties with people I don’t know or do I want to spend time with the family or watch a film with my wife? You know, there’s... Unless it was a requirement of the course, most of the times I wouldn’t do it either, although I could see that it was something that was maybe expected of people to do. Because it wasn’t a requirement you’re sort of happy to let it slide’ (C1, Chelby)

Where the learning situation is perceived as encroaching on other commitments, competition between discourses that claim time or space has to be managed. C1 remarked on the delicate balancing of multiple commitments to work, study, and family. The time spent with his family is portrayed by C1 as already limited, particularly by studying in the evenings. Optional activities within Chelby course were perceived as another competing claim upon C1’s family time. The relative strength of discourses can be seen here; C1 demonstrably valued his remaining family time more highly than whatever benefit might be derived from further Second Life activities. Engagement with activities within the learning situation can thus be shaped by competing claims for time normally associated with family discourses. For C1, this intersection between family and learning situation could be extended to constructions of space also:

‘I found it [studying the module], found that a bit strange. It’s, it’s a bit difficult for me to do because of my... the nature of my home life. I’ve got a couple of kids and a lot of noise and stuff, so it was, um, it was quite difficult to manage at first but I managed to get myself into a, a routine and the kids into a routine where they knew that although I was sitting in a particular room with a laptop, I was still at uni’ (C1, Chelby)

Unlike C1's other evening classes, the Chelby module did not took place within a campus computer lab. Instead, he worked from home, within a space not initially perceived by either C1 or his family as a study space. The challenge to reconstruct the home space as an extension of the university (C1 also refers elsewhere to treating synchronous activities at home as 'sitting in class') is an example of where family and learning situation intersect and a resolution must be reached. The Chelby module did not fit into the routine patterns of study, work, and family lives that C1 had previously established; the intersection between these patterns thus became salient to his experiences of the learning situation. Family lives, like work lives, matter when they impinge on (or are impinged on by) the learning situation and the consequences of this intersection must be negotiated.

The influence of family considerations on the learning situation need not solely be on the 'economic' basis of demands on temporal and spatial resources. K2, for instance, asserted his responsibility and desire to safeguard his children's wellbeing:

> 'I worked in school for a long time so I'm used to all the child protection laws and protocols and I think that is something that needs to be addressed with virtual worlds as a whole, not just Second Life, you know it's the internet as a whole needs to address these things, Facebook, Twitter, whatever, they're all the same and that's why you have so many incidences of grooming, or whatever you want to call it, to me it's not acceptable, I mean I have a three year old daughter and I will making very damn sure that there is no way that she can get to anything online that I wouldn't allow' (K2, Kirkhampton)

K2 identified Second Life as a space in which the sexual exploitation of children might either take place or be facilitated to take place elsewhere (i.e. grooming), a concern he raised about online spaces generally. K2 described several occasions in which he had accidentally teleported to pornographic simulations through landmarks (place markers) included within free in-world objects. Family,

as potential victims of activities within Second Life that K2 may find either morally abhorrent or actually illegal, become relevant to his positioning of the virtual world. K2 used the example of his daughter as a person to whom he felt a duty of care and for whom he may wish to restrict the availability of online content of which he disapproved (such as the pornography in Second Life). Commitments to family can thus provide an analytical lens through which to position the virtual world and the learning situation. Family may, however, be invoked in differing ways by students. K2's explorations of Second Life revealed problems with child protection; likely influenced both by his accidental excursion to pornographic spaces and by his previous experiences with child protection in schools. Yet C1 identified educational opportunities for his two young sons in virtual worlds such as Second Life (see section 6.3.1). The discourse of family can thus provide an analytical lens, but the resultant analysis is not heterogeneous.

Family can also be historical discourse that encompasses upbringing, life trajectories, and familial cultures. LE8 reflected on how family culture had shaped her previous engagements with technology:

> '…it's just my upbringing. I've never… my whole family are not technological people. We're quite traditional people. And, um, I've never… I mean, I did IT skills, but that was just PowerPoint, Word, emails, type of thing. And I've never been, had the chance, I suppose, to do the technological things. Because I've always been told, oh, drama's your thing; you should do drama. So, I've gone in that direction, rather than the technological side.' (LE8, Leebridge)

Although the role of technological skill in the learning situation has been discussed at length in chapter 5, it is pertinent to identify where these notions of technological skill were grounded for LE8. It is the culture of her family and consequently her upbringing that LE8 asserted had shaped her personal engagement with technology. It has already been discussed in this chapter, for

example, that LE8's expectations of Second Life were influenced by her previous experiences with digital games. Her trajectory through different technological and non-technological engagements and into the learning situation has been shaped by her upbringing. The historical discourse of family is an underlying facet of all discussion of technological skills; a discourse that influences engagement with technology and subsequent trajectory through media and learning. This notion of family is substantially different to the immediate intersections between family lives and the learning situation observed by C1 and K2. It is nonetheless a lens through which the learning situation may be analysed and positioned by students. By engaging with Second Life, LE8 is breaking with the family norms she articulated, although there is insufficient data to speculate on how she perceived this disjuncture within the context of the family discourse. More generally, family and upbringing are likely to be influential in students' perspectives simply because these factors represent a significant shaping force on participants' lives. This influence is unlikely to be homogeneous or deterministic, but it is nonetheless salient if the discourses that intersect with and work to define the learning situation are to be understood.

The discourse of family can involve commitments that may compete for the same time and space as the learning situation, provide an analytical lens through which to examine virtual worlds, or represent a historical discourse of how family upbringing might impact on contemporary engagement. The 'economic' significance of family is analytically similar to that of employment and, like employment, family can exert influence on experiences through the need to balance valued activities with limited resources. Competing commitments to family, study, work, and so forth are applicable only to a subset of students (such as C1) for whom these multiple, simultaneous engagements took place. Again, similarly to employment, the subset of students who appear most likely to experience an intersection between family and learning situation are those who have immediate family commitments such as dependants. Although it is very likely that numerous participants had romantic partners, it

was only in the case of mature students with explicit family commitments that family was raised[29] as salient to the learning situation. Such commitments included child protection and time with spouses and children, but will likely also vary between individuals; even within groups of mature student participants family was not universally perceived as relevant to the learning situation. It is only when discourses intersect in some way – for instance when issues of child protection become evident – that family becomes a salient concern. In a broader sense, family is also a discourse of upbringing and culture that influences engagement with technology. As LE8's comments demonstrated, cultures and traditions of families can shape individual student's previous engagements with technologies and provide a lens for analysing the current learning situation.

6.5. Chapter summary

This chapter has sought to demonstrate the role of discourses in shaping students' perspectives. Four elements were addressed:

1. Discipline, a discourse that encapsulated students' understandings of their subject of study, divided into standards, technologies, and application domains. It was established that Second Life was considered in light of disciplinary standards and that the virtual world was perceived to have greater affinity for some disciplinary standards than others. Similarly, the role of the virtual world within a disciplinary setting was evaluated with reference to the capabilities of existing disciplinary technologies. Finally, the applicability of Second Life to spaces in which a discipline acts was considered by participants. Each of these factors shaped the way in which Second Life was positioned in relation to discipline.

[29] I recognise that romantic relationships may not be characterised as 'family'. Nonetheless, there was no mention of romantic dyads, blood relatives, or any other social unit in relation to the learning situation beyond those instances noted in this section.

2. Digital games, a discourse frequently invoked when analysing and positioning the virtual world. Associations made between digital games and virtual worlds were numerous, but were not uniform: links were made to multiple categories of digital game. Norms of behavioural and spatial practice were transposed by some, but not all, students from digital games to virtual worlds, usually with problematic consequences. Additionally, associations between Second Life and gaming histories could positively or negatively influence expectations of behaviour in world and self-efficacy. As such, the relationship between Second Life and digital games was complex and positioning the virtual world with reference to digital games could lead to a multitude of consequences.
3. Education, a discourse concerned with the structure and application of learning in particular settings and through particular procedures. Different understandings of secondary and HE were evident amongst participants, consequential in how these educational domains were deemed related to specific capabilities of Second Life. Distance education was disambiguated as an example of a situation in which differing interpretations of an educational domain could lead to radically different positioning of Second Life.
4. Family and work, two discourses drawn upon by a relatively few students, but nonetheless salient to those who did refer to them. Both family and work involved commitments to particular temporal and spatial arrangements that on occasion conflicted with the learning situation; office hours and time commitments to family for instance. Similarly, both work and family provided historical lenses through which to position the learning situation, either in relation to experiences in a profession (work) or in light of family upbringing (family).

In the forthcoming and final chapter (7. Discussion), the analysis of student's perspectives is integrated and key emerging themes are explicated.

7. Discussion

7.1. Revisiting the thesis

The foregoing analysis has explored students' perspectives on the use of virtual worlds in UK HE. This topic is particularly important because of the rapid rise of virtual worlds in academic discourse on education and their greatly increased use in recent years within UK universities. At the outset, several concerns with current research were identified. These were:

1) Lack of methodological rigour
2) Untested assumptions about continuities between games and virtual world
3) Subsuming of students' experiences as data for pedagogic evaluation
4) Lack of focus beyond the module or implementation session

In response to these concerns, and in an attempt to explore the research topic, a social constructionist approach was adopted; drawing extensively on grounded theory methodology. The research has not been based upon a particular theory or model, but rather has interpreted data emergently and with the aid of sensitizing concepts (Blumer, 1954) such as discourse, classification, and situational analysis. The result has been an interpretation of key influences on students' perspectives that has emerged recursively from engagement with the collected data and the published research field.

7.1.1 Reflections on the research question

How, then, do the analyses presented in the foregoing chapters relate to the research question expressed in chapter 1: 'what are students' perspectives on the use of virtual worlds in UK HE?'

The most immediate observation of the thesis is that this research question cannot be answered in a straightforward fashion. Participants' perspectives vary and cannot be easily rendered into a simple model that offers insight on the topic. Moreover, as the research has progressed, I have found the question of 'what are students' perspectives?' to give rise to the contingent question 'what influences students perspectives? The latter question is more analytical than descriptive, encouraging attention to the factors shaping perspective and moving beyond representation of perspectives as an end unto itself. The relative virtue of description versus conceptualisation – a topic Glaser has discussed extensively (e.g. Glaser, 1978) – is ultimately a philosophical one concerned with the purpose of a particular research project. Whilst assaying the state of the field is meritorious, this research has had the opportunity to move from simply identifying perspectives toward attempting to understand how such perspectives are generated. This shift is an organic progression from identifying complexity to examining the factors at work in producing complexity, facilitated by the availability of rich data for analysis.

The main conceptual foci of this analysis, presented across the following sections, will speak to how perspectives are influenced and why they are articulated in the ways exemplified within this research. Three central themes have emerged from the analysis and I present a commentary on each:

1. The relationship between past and present in the learning situation
2. Shaping stances on learning
3. Perspectives shaped through discourse

These commentaries draw upon conceptually linked findings and illustrate how these findings have relevance to the research field. Not all of the analytical insights in the thesis are accommodated equally within these commentaries, but rather the 'higher' level, conceptual insights are primarily examined. I have not, for instance, referred extensively to the ways in which communication modalities were used, but do refer to the ways in which action of all kinds

(including communicative action) appeared to be shaped by historical norms, expectations and judgements of purposiveness, and influential discourses. In these commentaries I present the predominant conceptual thread that runs through the thesis.

Whilst each commentary has specific conclusions to offer, the sections should be considered additive in a similar manner to the analysis chapters. Taken together with section 7.6 (‘Concluding words’), they present the theoretical argument of the thesis and the modifications to educational research into virtual worlds that I advocate as a conclusion and contribution of this research. Additionally, section 7.6 offers reflection on the methodological and theoretical limitations of this research and some specific, practical considerations for future research. Initially, however, we turn to the commentaries themselves.

7.2. The relationship between past and the present in the learning situation

The role of past experiences and extant ways of meaning-making have been recurrent concepts in the analysis. The role of the past in the present is thus important in considering how perspectives are shaped and action influenced. This role can be broken down into three aspects:

1. Reference to, and application of, historical norms of action: discussed in chapter 4
2. The importance of pre-existing skills in shaping learning experiences: discussed in chapter 5
3. The way in which experiences are contextualised within the meaning-making frameworks of extant discourses: discussed in chapter 6

In this section the importance of the first and second points are considered; the latter, on extant discourses, will be covered at length in section 7.4.

7.2.1. Norms of action

Norms of action drawn from other spaces and experiences were influential in decisions about action taken and expectations of others' actions, demonstrated by the examples of spatial and communicative norms discussed in chapter 4. These historical norms of action can be drawn from physical settings or from other digital settings. C5, for instance, discussed his discomfort at the violation of personal space norms by a stranger visiting Chelby Island. These personal space norms were clearly linked to the expectations of spatial practice within physical settings, such as a campus classroom. LY11, conversely, discussed his experiences within Second Life's London Hyde Park space, in which his assumptions about personal space and 'bumping' other residents were challenged. These assumptions about spatial practice were more closely linked to digital games. As such, whilst the application of historical norms as a framework for structuring present action might be common, the particular norms that are appropriate to apply are contentious.

The analysis of norms was developed by examining the problematic applications of certain normative frameworks. At Chelby, for instance, the communicative behaviour of the students did not appear to follow any specific historical norm, but rather was constructed within the learning situation: influenced by factors ranging from the availability of microphones to anxiety over national accents. The normative communication approaches developed within the learning situation also carried sufficient inertia to override the preferred approaches of some students and support those of others. C1 discussed his familiarity with VoIP chat and subsequent surprise at the seeming unwillingness of other students to use this medium more extensively within the learning situation. LY7, conversely, expressed a preference for type chat that was more readily supported within the learning situation, in which students using type chat extensively was more commonplace than using VoIP chat extensively. K3 also experienced disjuncture from his previous experiences of virtual worlds during the learning situation, particularly the absence of

collaborative learning within the virtual world which he noted was ubiquitous in his previous experiences. Finding other students or Second Life residents with whom to collaborate or from whom to learn proved difficult and K3 was unable to realise the same practices within the learning situation as he had historically. Historical norms can thus appear salient, but this does not guarantee their adoption as frameworks for current action; other (social) factors influence both the decision and the power to shape communicative patterns. As Star and Ruhleder (1996) have observed in relation to infrastructural systems, there is no 'rule' that the best or most efficient infrastructure will win out; myriad factors shape the uptake of a particular approach.

The salience of some norms above others is thus of conceptual importance. Norms may be considered salient on an abductive basis, adopted primarily as the 'first available' approach, or through influence of other situational elements such as proficiency with the technology, the actions of other students, and the discourse of tutors. We have seen with K4 and his group, for instance, that competence with particular elements of the technology can shape action taken; their difficulty managing editing permissions within Second Life is a useful illustration. Similarly, under pressure of situational factors, such as majority influence, some students (e.g. C1) have adopted approaches that they considered to be inferior to other ways of structuring action that were available to them. Clearly more is at work here than merely selection of best available approaches from all possible approaches.

Assumptions made about the salience of norms appeared to be implicit. Both examples of spatial practice discussed above demonstrate that expectations around action are 'carried over' into the virtual world until they are made subject of critical reflection, either as a result of a breakdown – such as those experienced by C5 and LY11 – or perhaps as a result of a conscious effort within the learning situation to challenge assumptions (i.e. tutors asking questions, particular classes aimed at challenging prevailing ideas, and so forth). Bayne (2005) has observed that the metaphors and terminology we use

to describe both the internet and educational technologies are largely continuations of extant spatial, temporal, and organisational metaphors of physical spaces. Whilst the alternate examples of spatial practice drawn from physical or digital arenas might give pause in considering where frameworks for practice are grounded, there appears to be strong support for the *principle* of continuation in virtual worlds within these frameworks. It is perhaps most plausible that normative frameworks for action are not chosen consciously, but rather are an extension of stable systems of practice within other domains (e.g. physical classrooms, digital games).

Actor-network theorists have argued that as a network of relations (linked material and conceptual components) becomes increasingly stable through support and entrenchment it is more able to co-opt elements into its fold and is in a better position to ward off alternate, competing claims for membership (Callon, 1991; Murdoch, 1998). By extending this theory to the cases discussed above, stable networks of relations may serve to capture and inform new engagements; such as travails in Second Life. Similarly, Mezirow (1991) has argued that all experiences are filtered through our 'meaning perspectives'; the 'structure of assumptions within which one's past experience assimilates and transforms new experience' (1991, p. 42). These viewpoints are conversant with the analysis I have presented in chapter 6 (Discourse); the consequences of which are discussed at length in section 7.4. It is important, however, to recall Cousin's (2004) interjection that technology and action are 'mutually determining'. Second Life is not merely captured by existing networks, but offers opportunities as a medium for the 'message' – that is, action and its consequence – to be transformed by new possibilities and necessities (McLuhan, 1964), to form new orthodoxies as we have seen in the cases of communicative practices at Chelby (section 4.2). For now, it is of note that specific, concrete actions – such as arrangement of avatars in space – cannot be divorced from the conceptual links made between the virtual world (or elements within it) and extant networks of meaning. Put differently, the

discursive positioning of the virtual world has demonstrably practical consequences.

Both Petrakou (2010) and Mennecke et al. (2008) have discussed the complexity of norms and social arrangements within Second Life as a difficulty for learners engaging with the virtual world. This observation is valuable, yet it requires qualification. Whilst norms and social arrangements extant within particular settings in Second Life may indeed be complex, it is notable that there are many alternate (competing) ways to grasp these arrangements and to conceptualise practices related to space, communication, and so forth. The problem is thus less that extant relations are difficult to grasp, but rather that there are multiple ways to grasp them: multiple norms of action that, as we have seen in the analysis, are applied by different students to similar practices.

This multiplicity echoes Massey's (2005) commentary on the convergence of trajectories as a defining quality of space. Massey (2005) argues that space is not simply a static network of relations, but instead is dynamic and constantly engaged in (re)production through the trajectories through past, present and future of those actors who are present. We have seen in the cases of student-stranger interaction that the convergence of trajectories in unanticipated ways gives rise to complexity through the revelation of alternate material practices. Contrasted with physical campuses and classrooms – a distinction drawn by K2, for instance – the potential for intersection between diverse trajectories, implying multiple norms of action, is high. Additionally, some of these ways of structuring action will be given more or less credence and support by powerful actors, such as tutors and experienced virtual world users (e.g. Second Life residents). As Massey remarks, 'the issue is one of power and politics as refracted through and often actively manipulating space and place, not one of general 'rules' of space and place…there are no such rules…Rather, there are spatialised social practices and relations, and social power' (2005; p. 166).

Historical norms of action will thus be influential, but not deterministic; action is negotiated amongst a variety of actors and artefacts. Historical norms can therefore play a variety of roles in the learning situation, from being a straightforward and successful framework for structuring action, a site of resistance to learning situation norms of action, or an unsuccessful framework for structuring action that is jettisoned. Their adoption, rejection, and the processes of power and resistance to which these are linked are ultimately socially defined; they are not merely reflections of individuals consciously choosing an appropriate approach to action from all available approaches.

7.2.2. Skills and learning curves

In addition to expectations about norms of action within the learning situation, the role of pre-existing skills emerged as analytically important. Foundational skills were outlined in chapter 5 as skills not developed within the learning situation, but that provided a foundation for action through underpinning practices within the learning situation. One example skill, noted by LE8, is fast typing; incorporating typing speed and knowledge of common contractions. A further example, noted by LE1, was competence with a graphical design package (such as Adobe Photoshop) for underpinning Second Life content creation. It might conceivably be possible to chart foundational skills required for all possible practices within Second Life, perhaps by creating a taxonomy of practices and studying the skills required to perform effectively at such practices. It is more useful, however, to focus on those skills which underpin the specific practices encountered within the learning situation, which may include only a subset of practices available within Second life as a whole (e.g. navigation, but not building or scripting). As was evident from the four research sites, not every learning situation involved every element of Second Life.

Consideration of foundational skills is important because it highlights the way in which practices within Second Life are not entirely new, but are founded on existing skills. Following this contention we can shift our focus from students

encountering new practices to examining the degree to which specific students are equipped to participate in those new practices given their current skills and particular histories with technology. The participants in this research did not share a common history of technology use, but rather demonstrated diverse experiences across various digital technologies, including social media, gaming, content creation packages, and operating systems. As extensive published evidence has made clear, the student population is remarkably heterogeneous in its ownership of, access to, and use of digital technologies (e.g. Helsper & Eynon, 2010; Jones et al., 2010; Waycott et al., 2010). Moreover, it is evident from the discussions in this thesis that it is less ownership of hardware that is of key concern, but rather usage of software for particular purposes. Educational research has been less voluminous with regard to this latter issue, but findings from Kaminski, Switzer and Gloeckner (2009) suggested that students' confidence and self-reported competency with sophisticated content creation software (such as digital audio, graphic, and video editing packages) are much lower than with word processing, internet browsers, and basic use of presentation software[30]. Therefore whilst ownership and use of digital technologies may be heterogeneous, foundational skills for content creation practices (such as building, animating, and texturing) may be consistently weaker than might be assumed from assessing students' technological skills in other areas.

Although it was clear that students came to the learning situation with differing levels of foundational skills, it did not necessarily follow that those with least proficiency in foundational skills at the beginning of the module would perform least ably within it, nor espouse negative orientations toward the experience. It was possible for students to learn foundational skills in addition to the Second Life skills more directly connected to the module pedagogy. LE1, for instance, discussed how she successfully traversed the virtual world module (eventually receiving a 1st class grade) whilst simultaneously learning to use Mac

[30] Competence with media creation software might, however, be expected to differ by discipline and by pre-HE experience of participant; variables not taken into account by Kaminski et al. (2009).

computers and Adobe Photoshop to the required level. Whether LE1 would have been even more successful had she already been skilled in using Mac computers and Adobe Photoshop is unclear. Whilst it would seem to follow that greater initial skill levels would generate an easier learning experience, this elides social and psychological factors that also seemed important. LE8 noted that her competence with digital technology was very low at the start of the module, causing her significant anxiety, yet she engaged enthusiastically with module tasks and self-directed learning; reporting both a positive experience and reshaping of perspective on theatre. C5 also reflected that, whilst he felt the least technically able of the Chelby students, he had discovered a creative predilection from experiencing building in Second Life. As such, there does not appear to be a straightforward link between foundational skills and either positive experiences within the learning situation or engagement with learning. Whilst this might seem counter-intuitive, findings elsewhere have suggested that students who demonstrate high levels of 'Digital Nativism' may be less effective at knowledge application and less active participants in learning despite their sophisticated technical skills and high level of self-reliance (Ransdell et al., 2011). Foundational skills, like historical norms of action, offer only one non-deterministic facet of a complex analysis.

It is worth expanding upon this argument to note that because there is no clear, predictive link between (perceived) lesser foundational skills and lesser engagement, performance, or more negative viewpoints, there is no support for digital divide theories (e.g. Prensky, 2001a, 2001b) within these data. History of technology use and associated skill development is taken by some authors to have predictive qualities within engagements with educational technology (e.g. Duffy & Penfold, 2010; O'Connell et al., 2009), but this viewpoint is highly problematic for three reasons. Firstly, history of technology use does not appear to be *singularly* important in shaping engagement with the virtual world; stories of engagement and disengagement, and of negative and positive perspectives, emerged from students with high self-reported technology skills and those with lower self-reported technology skills. Secondly, other technologies do not link in

straightforward ways to the virtual world and, thus, the learning situation. We have seen how norms of action drawn from other technological spaces – e.g. spatial practices from digital games – do not necessarily provide a solid basis for action in the virtual world as some have claimed (e.g. O'Connell et al., 2009). Similarly, we have seen how different types of engagement with technologies or subcategories of technologies very commonly grouped as a homogeneous entity (e.g. digital games) can shape perspectives in differing ways. Thirdly, the problems likely to be encountered within the learning situation are not solely technological. In the data, concerns over spatial practices and communication went beyond simply establishing the technical inputs required to operate in the virtual world. Sometimes, notably in the case of C1's communication via text rather than VoIP chat, the approach perceived to be best 'technically' did not always win out in practice.

The factors shaping engagement and influencing perspectives thus cannot be reduced easily to an abstract grouping of 'Digital Native' skills, but rather must be understood in light of other factors. Literacy theorists have convincingly argued that *all* practices (including those using digital technologies) should be viewed as situated within particular contexts of action, socially and culturally patterned, and embedded within wider goals and activities (Barton and Hamilton, 2000). Through this lens, there is a striking resemblance between the 'study skills' approach to literacy, critiqued by Lea and Street (1998), which emphasises the transferability of abstract, de-contextualised skills between communication contexts, and the Digital Native arguments about the portable skills of particular student groups (e.g. O'Connell et al., 2009). As Lea and Street observe, practices are better viewed 'at the level of epistemology and identities' (1998: 159) – i.e. knowledge making in particular domains – than a portfolio of abstract skills. A caveat - which follows from both my analysis of foundational skills above and Gee's (2004) observations – is that practices developed in one domain can demonstrably impact upon those developed or applied in another. We should be cautious, therefore, to strike a balance in asserting both the situated and portable facets of skills.

More specific to the relationship between past present, and future, it is evident from the manner in which present action is shaped by extant norms and discursive arrangements - which may be revisited as a result of present action - that these timeframes are co-constitutive. As Adam (1994) and Tusting (2000) have argued, the past and future are not merely ideas in actor's minds, but are active elements shaping current practices. We have seen the role of past and future both through the influence of spatial and communicative historical norms and through the future-orientation of students who analyse virtual world engagements in light of their connection to practices and goals in which those students feel invested. The central concern may therefore be less the role of the past as the role of trajectory from past to future as constituted in present actions. Concern with trajectories is little represented in education technology research (with some exceptions, e.g. Erstad, 2012), which has repeatedly been criticised (e.g. Selwyn, 2011) for its ahistorical posture in which the future (new innovations etc.) is given primacy over the present and past. This form of future focus may serve some agenda of technology and globalisation well (see Pelletier, 2005), but it does ill-justice to both the inertia of the past (in normative and discursive arrangements) and of the future (in contextualisation of action within goals and commitments) that emerge in the perspective and action of the present. Nonetheless, attention to trajectory and the way in which it situates engagements with educational technologies would seem warranted in light of the analyses I have presented, perhaps necessitating a more extensive dialogue between theory in educational technology and social theory on time and trajectory (e.g. Adam, 1994).

7.2.3. The past and present: in sum

The two issues emerging from the data analysis that have been discussed in this section are historical norms of action and foundational skills. Whilst both offer plausible explanations for why certain actions are taken and viewpoints espoused, it is clear that neither previous skills nor previous frameworks for

action can be wholly explanatory. Some participants have thrived against a backdrop of lesser technological competence, whereas others have found themselves unable to apply their previously developed skills and approaches within the learning situation. The role played by extant skills and norms must be seen as one facet of a more complex set of influences that shape perspectives, and perhaps not the most influential of factors, as some authors have advanced (e.g. Duffy & Penfold, 2010). Crucially, both norms and skills are rooted in extant networks of meaning and practice that can capture and shape new experiences. These points are developed in the next section in which the second commentary – stances on learning – is set out.

7.3. Shaping stances on learning

In chapter 2, whilst discussing the 'relative' steepness of learning curves, I commented that;

> **'**A regular computer user with some experience of other virtual worlds is likely to experience a less steep learning curve than an irregular user or a student who has never used a computer before'

In light of the discussion of foundational skills in chapter 5 it is clear that there is validity to this statement. Current published ideas about the learning curve do not well represent the diversity of individual engagements with learning. By giving a single numerical value for time spent learning and by linking learning to use Second Life to the structural arrangements of the module (e.g. orientation for the first two class sessions), rather than individuals' needs and abilities, prevailing trends suggest that there is 'one curve' for classes. The recognition that students will likely begin the module with differing foundational skill levels illustrates that learning cannot readily be reduced to general notions of steepness, or given quantitative values such as '120 minutes'.

Given this, it is clear that a timescale for all students' learning engagements is likely to be misleading. It is, moreover, missing the crucial point that the underpinning for such learning engagements spreads across a far broader timeframe in which foundational skills may be learned. As the analyses above have demonstrated, foundational skills – spatial practices, for example – are not merely deployed to structure action, but they can be challenged (and potentially reconstituted) as part of the action through which they were deployed. The learning curve under discussion, therefore, is not merely the development of a distinct array of virtual world skills, but both an application of existing practices within a novel space and, importantly, a revisiting of understandings previously formed. The tools seemingly better suited to analysing this process are drawn from literacy studies and social theories of time (e.g. Tusting, 2000), and not educational and/or technology theories delimiting analysis to the present engagement.

A more nuanced interpretation can also be developed regarding the influence of technological skills on both learning to use Second Life and perceived potential for the virtual world's application. We have seen in section 7.2 that history of technology use and associated technology skills do not seem to provide a strong predictive basis for assessing students' proficiency to use, engagement with, or perspectives on the virtual world. This finding is consonant with the expectations of the Technology Acceptance Model (TAM), which counsels us against placing emphasis on 'perceived ease of use' over 'perceived usefulness', because the latter has been demonstrated to exert greater influence on intended behaviour (King & He, 2006). Childs has noted that in the case of virtual worlds it appears that '…the design of the technology has a smaller impact on the experience of the participants than does the willingness or ability of the participant to engage with the technology' (2010; 233). It should be noted, however, that ergonomics of technologies are also clearly linked to their perceived usefulness and participants' perceived ability to use them; a relationship captured in the TAM (Davis, 1989). Nonetheless, it is informative that the skills to make the technology function are less important in influencing

participants to use a technology than participants' judgements on what purpose the technology will serve. This contention is supported by the data presented in this thesis and by earlier findings (e.g. Wiecha et al., 2010) that have observed students' concern with establishing the purposiveness of using Second Life in educational settings.

The TAM has been validated within both educational settings (e.g. Park, 2009) and more generally (e.g. King & He, 2006) and it is thus unsurprising to find the basic formula proposed by the model appearing within this thesis. The TAM begins to lose its theoretical incisiveness, however, in the analysis of its constituent variables. Multiple efforts have been made to unpack the variable 'perceived usefulness', which has significant resonance with the discussions of purposiveness in this thesis, according to a variety of predictor factors, including media richness (Saeed, Yang, & Sinnappan, 2008) and ICT/e-learning self-efficacy (Park, 2009; Chow et al., 2012). These precursor influences on perceived usefulness have been generically labelled 'prior factors' by King and He (2006). 'Prior factors' are included commonly, but not universally (e.g. Edmunds, Thorpe, & Conole, 2012), in recent educational applications of the TAM (e.g. Chow et al., 2012). Yet meta-analytic evidence has indicated that even when extra variables are included, the TAM rarely explains the totality of behavioural variance observed (Legris, Ingham, & Collerette, 2003). It is evident from the TAM literature that either the model is not robust – which is unlikely given the weight of validating studies (King & He, 2006; Chow et al., 2012) – or the 'prior factors' under discussion are not constituted in a sufficiently sophisticated way. As Legris et al. (2003) put it: 'TAM is a useful model, but has to be integrated into a broader one which would include variables related to both human and social change processes…' (2003, p. 191).

The analysis presented in this thesis supports the latter: the proposed 'prior factors' by which perceived usefulness (in particular) has been unpacked are insufficient for understanding the ways in which judgements of purposiveness are linked to networks of meaning in participants' lives. Legris et al. (2003) have

suggested that ‘human’ variables are crucial in making sense of intention to use, and perspectives, on technology. Yet thinking in terms of variables that predict a perception of usefulness is unhelpful in the case of learning technologies. Rather it would appear that we could situate the entire TAM, or at least the variables ‘perceived usefulness’ and ‘perceived ease of use’, *within* a ‘variable’ that corresponds to the discursive arrangements within individuals’ lives. Judgements of purposiveness appear inexorably linked to the classificatory systems by which we derive the relevance of actions or artefacts to conceptual systems (see Bowker & Star, 1999). Put differently, and returning to literacy theory, there is a need to understand judgements related to practices within both the social events and interactions, and the social and institutional structures in which those judgements are made (Maybin, 2000).

Mezirow has argued that ‘symbolic models’ (1991, p. 20) provide us with the classificatory schemes by which we are able to make judgements about concepts such as ‘purposiveness’ and ‘ease of use’. Following the discussion above, it seems necessary that some recognition of these symbolic models inform our analysis of students’ judgements. At a basic level, we might include some recognition of the situated nature of judgements within the TAM, as Figure 8 illustrates:

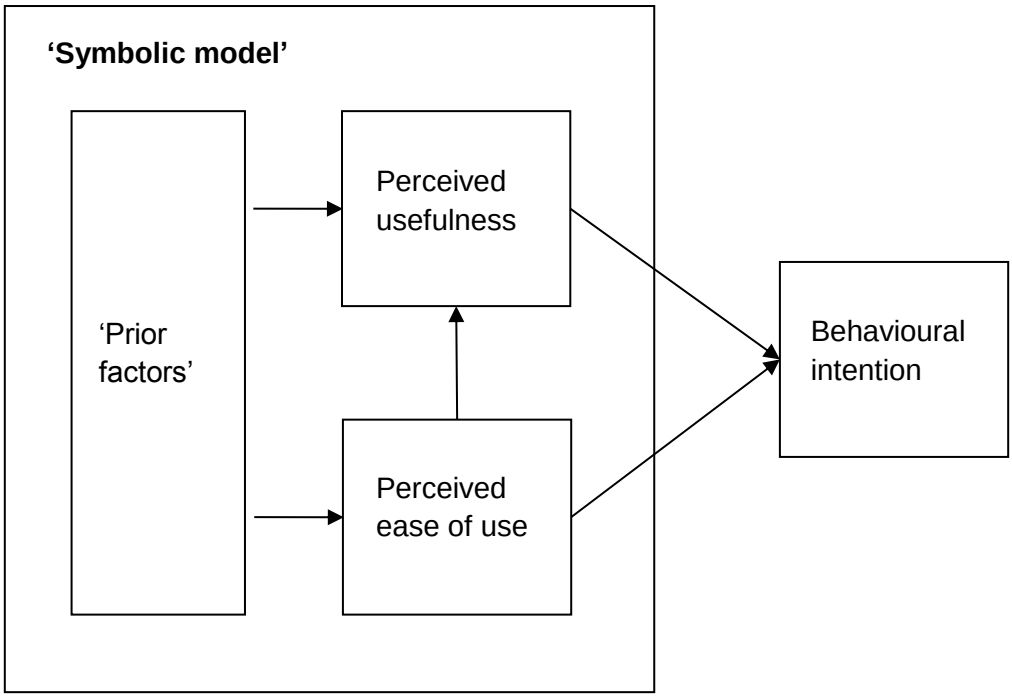


Figure 8: Expanded TAM, adapted from Davis (1989)

Put simply, all questions of purposiveness involve a network of contingent questions that work to establish the purpose an action might serve, the desirability of such action, the consequences of action, the domains in which action takes place, and numerous other, similar issues. Unlike ideas such as ‘media richness’ (Saeed et al., 2008), these are not static variables, but dynamic arrangements which themselves may be subject to change in the learning situation. This point is further developed in section 7.4.

For now, it is evident that recognising the broader, ‘symbolic’ arrangements shaping judgements about purposiveness and usability refigures the analytic question that should be asked when examining these judgements. Rather than asking ‘is the virtual world considered useful/usable for learning within HE?’, we might productively ask ‘why is the virtual world considered useful/usable in light of other commitments within a student’s life?’ As a corollary we might also ask ‘what connections or pathways exist between particular discursive arrangements and perceptions of usefulness/usability? And how are these pathways constituted?’ The role of discipline in judgements of purposiveness is

illustrative. Certain technologies and practices are considered purposive within some disciplinary settings, but not others. An example is the discussion of the role Second Life might play in GIS as opposed to in theatre production. For several Lymford students (e.g. LY5, LY14, LY15) the applicability of Second Life as a GIS space was not clear, whereas for two Leebridge interviewees (LE8, LE11) the applicability of Second Life to theatre production and performance was self-evident. Judgements about the purposiveness of Second Life in the learning situation are thus not made in a conceptual vacuum, but are linked to the way in which different disciplinary settings – and their related pedagogies – situate engagement with the virtual world. Several examples of this observation can also be found in the virtual world literature. In Sanchez's (2007) experiences with English literature and Esteves et al.'s (2011) experiences with computer science, students' appeared to appraise critically the link between Second Life activities and disciplinary concepts and pre-existing disciplinary tools. Such appraisals are also situated in a particular socio-historical moment, shaped by the history of individual biography and orientation to the potential futures envisaged within a disciplinary trajectory (e.g. into a particular disciplinary industry). Stances toward learning to use Second Life cannot be disentangled from this context because judgements of purposiveness, on which decisions about engagement are made, are shaped by disciplinary discourse. Subject discipline is, in this context, an example: multiple discourses are implicated in this shaping process, as chapter 6 elaborated upon.

Following this argument, discussions of learning within virtual world educational research have been too bound by institutional arrangements, such as orientation sessions, module timetables, and pedagogic design. They have failed to grasp the way in which wider networks of meaning in students' lives are relevant to understanding their approaches to, and experiences of, learning with virtual worlds. As I noted in chapter 2, compartmentalising details deemed to be related to educational courses, personal lives, and so forth (e.g. Jarmon et al., 2009) unhelpfully divorces experiences from the networks of meaning in which

they are situated. Selwyn too has suggested that our analyses must encompass these broader elements:

> 'our primary focus should not be on the actual technological devices, tools, and applications per se, but the practices and activities that surround them, the meanings people attach to them, and the social relations and structures that these technologies are linked to.' (2011, p. 2)

In a more theoretical vein, sociologist and philosopher Bruno Latour has argued that 'whenever you wish to define an entity - an agent - an actor - you have to deploy its attributes; that is, its network' (2010, n.p.). In demonstration of this principle, Latour (2010) discussed the work of Tomás Saraceno[31]; an artist whose installation involved webs of wires and tensors that a visitor could manipulate and observe the consequent effects upon other aspects of the 'network'. This metaphor of webs and networks of meaning resonates with the role that discursive arrangements play in shaping judgements of purposiveness. Whilst manipulating the 'tensors' of disciplinary conception or educational discourse might be fantastical, the way in which the virtual world enters into a network of meaning linked to numerous other nodes and connectors is a powerful analogy. If we are to understand experiences of learning we must not sever the tensors, but rather trace them back to the network so that we can survey the connections that matter in shaping perspectives.

7.3.1. Shaping stances on learning: in sum

Whilst there is support in the data for more sophisticated understanding of the 'learning curve' in light of individuals' foundational skills, the more important message may be that we need to expand dramatically the horizons of how learning to use virtual worlds is represented in virtual world scholarship. Placing attention only on the role that extant skills play in perspectives on learning is analytically perilous because judgements about learning are grounded in a

[31] Elements of Saraceno's work, and Latour's commentary, can be found at: http://www.tomassaraceno.com/MET/Telescope/

much wider network of meaning than merely perceptions of the technology's usability. Judgements about the purpose of learning to use Second Life, noted as the more influential factor by TAM, must be considered in light of the discursive arrangements that inform them, expanding our analytical vision from issues of usability and perceived purpose to the networks of meaning through which these judgements are informed. It is important additionally to recall that concepts of usability require a referent; ease of use can only be understood within the context of perceived purpose for use, returning us to the importance of judgements about purpose. This discussion of learning leads us to the need to understand discourses that provide referents for students' discussions of virtual worlds, how these discourse are deployed in considerations of learning, and, ultimately, how interpretations of discourses are formed. The role of extant discourses in shaping perspectives is discussed at length in the next section.

7.4. Perspective shaped through discourse

Discursive arrangements are the contextualising forces that give meaning to what is 'seen' and done within the learning situation. Perspective is fundamentally shaped by the discourses that frame what may be seen, how it should be understood, and how this understanding should be articulated. Mezirow expressed this concept elegantly when he defined learning as:

> '…using a meaning that we have already made to guide the way we think, act, or feel about what we currently experiencing. Meaning is making sense of or giving coherence to our experiences. Meaning is an interpretation' (1991, p. 11)

The link between current experience, the shaping of perspective, and extant meaning is resolute. It is consequent from the foregoing commentaries that students' perspectives must be understood in the context of their commitments to, and deployment of, particular discourses.

In this section, the significance of discourse is explored through discussion of the discourses that emerged as important in the analysis. This examination begins by outlining the importance of extant discourses in shaping perspective, drawing upon discipline and education discourse as examples. It then moves to discuss the way in which a discursive relationship posited between virtual worlds and digital games might be challenged. Finally, the 'reach' and practical consequences of associations between virtual world and other discourses is illustrated with the example of family and work. Conclusions on the significance of discourse, and on the analysis more generally, are then offered.

7.4.1. Contextualising perspectives

Discipline provides the most overt example of how discourses shape the ways in which the virtual world has been interpreted by the participants. Evident from the analysis is the importance of conceptual standards of particular disciplines in students' positioning of the virtual world as disciplinary or non-disciplinary, and establishing its purpose. As Mezirow has put it:

> 'To become what it is, an entity must be interpreted as an instance of a type; that is, in principle, it must meet certain conditions imposed through meaning schemes and perspectives that constitute a cultural code of interpretation' (1991; 20)

The analysis in chapter 6 has demonstrated how this process of interpretation is evident in the data. Interpretations of the relationship between virtual world and discipline are consequential in shaping perspectives on whether the virtual world 'belongs' in the learning situation, whether learning to use the virtual world is purposive, and for what function the virtual world could be employed within a disciplinary setting. Classification into disciplinary and non-disciplinary categories serves as a 'box…into which things can be put in order to do some kind of work' (Bowker & Star, 1996, p. 2). The work, in this case, revolves

around the development of perspectives on the role of Second Life within the learning situation.

Discourses of discipline are, however, a social product; collectively produced by roughly defined communities and not necessarily with consensus upon key attributes and boundaries (Becher & Trowler, 2001). The relative permeability of disciplinary boundaries, and flexibility of disciplinary classifications, can vary greatly depending on the 'sense of nationhood' (Becher & Trowler, 2001, p. 59) of particular disciplinary communities. Disciplinary discourse may therefore be more or less stable in demarcating specific disciplinary communities from one another (Becher & Trowler, 2001) and more or less stable within communities themselves (Fanghanel, 2012). Research by Fanghanel (2009, 2012), for instance, has demonstrated that academics' conceptualisations of discipline vary greatly:

> 'In the course of my discussions with academics, I came to realize that their discipline conceptions were constructed….through their own beliefs and histories, and their ideological take on the broader aims of HE. Thus, I have met academics teaching the same disciplines, in the same institutions or in institutions with similar missions, who displayed entirely different understandings and conceptions of the same discipline.' (Fanghanel, 2012, p. 68)

This sentiment is echoed by Quinlan (1997) in her comparison of two historians' differing visions of their discipline, in which alternate ways of viewing history informed different goals for students and different pedagogic approaches to disciplinary courses. Multiple researchers have demonstrated that discipline is one of the variables that influence academics' conceptualisation and approach to teaching and learning, including Becher (1994), Fanghanel (2009), and Neuman, Parry and Becher (2002). Conceptions of discipline thus define a particular set of discursive arrangements that exert influence on other discursive arrangements, such as education.

Work on academics' conception of discipline is relevant to this thesis for two reasons. Firstly, given that degree programmes are designed by academics, influences on academics' approaches to teaching and learning will also subsequently impact upon students' experiences. We have seen evidence of this influence in students' experiences of e-learning, such as the differing engagements with virtual learning environments across disciplinary cohorts reported in the LXP project (Conole et al., 2006). Secondly, if great variation in disciplinary conception exists amongst academics, students too may bring very different interpretations of discipline to the learning situation. In chapter 6, the difference that LE11 perceived between her and her colleagues' conception of Theatre was discussed, illustrating that although disciplinary discourses may contain many common elements they may also be idiosyncratic. Although less research is available on how students' conceptions of discipline may differ, it is at least possible that differing previous engagements with discipline (e.g. through employment), study at different institutions with different disciplinary programmes, and engagements with different disciplinary publications may facilitate significant diversity. If, as I have argued, discipline is a salient discourse for many students in virtual world learning situations, we should not assume that this discourse will be homogeneous; perhaps not even for students within the same department and on the same degree programme.

Discipline also links to education; another discourse discussed in chapter 6. Given that disciplines are closely associated with particular pedagogic approaches (Shulman, 2005), we might expect discourses of discipline and education to be interrelated. Research by Fanghanel (2009) suggested that for academics this relationship might also be mutually constituting; educational ideology shaping how discipline is conceived. Similarly, for students who do not have professional backgrounds in their discipline – i.e. not those who are 'returning' to education, such as LY4, LY15, or K2 - it is likely that in-depth engagement with discipline and HE are concurrent. The influence of educational discourse on students' perspectives was examined in chapter 6 and it was clear

that, like discipline, interpretations of education might also differ between students. Gee (2003) has argued that competing ‘cultural models’ might posit learning in varying ways, for instance as mastery of sets of facts or memorising information from books or teachers. Certainly qualitatively different conceptions of learning amongst students have been well evidenced in the educational literature (e.g. Marton, Dall’Alba, & Beaty, 1993), indicating disparities between students over how this fundamental facet of HE should be understood. Similarly, recent research has indicated that students have differing perceptions of HE quality and may value educational outcomes to differing extents (Ashwin, McLean, & Abbas, 2011).

At a more philosophical level, Fanghanel (2009) has discussed how alternate ideological orientations adopted by academics in relation to HE’s purpose - originally posited by Trowler (1998) - distinctly shape approaches to teaching, learning, and concepts of discipline. The question of ‘what HE is for’ is a persistent, and somewhat intractable, theme in the philosophy and practice of HE (e.g. Barnett, 1990; White, 1997). Mclean, Abbas and Ashwin (2011) have noted that there is a strong sense of personal transformation and critical awareness in students’ reflections on the experience and purpose of undergraduate social sciences education. Whilst students may not enter overtly into discussions about whether ‘vocationalist’ ideologies of education should be privileged over emancipatory ideologies of education, they may nonetheless hold differing orientations toward education that link (or do not link) to these positions.

Similarly, ideological conceptions of HE are grounded in political systems and societal arrangements that promote particular visions of educational technology. Hall (2011), for instance, identified the shaping of perspectives on educational technology within the capitalist discourse of labour and value production. Hall (2011) argued that the discursive positioning of technology within education is influenced strongly by governmental agendas (such as the ‘knowledge economy’) that promote particular ideological conceptions of both technology

and HE, with consequences for how technology is used and outcomes evaluated. Similar observations, on the co-option of educational technology by particular ideological agendas, have been offered by Kinchin (2012) and Pelletier (2005). Selwyn (2011) has argued that visions for the future of educational technologies are frequently linked to visions of the HE's purpose more broadly. Whilst Selwyn's observations concern academics, it is probable that students also contextualise perspectives on educational technology within broader perspectives on education. Judgements about HE's purpose are thus salient to discussions that concern which educational setting Second Life might be employed fruitfully, which audience it will be most suited, and which values are endorsed and whose interests they serve.

A reflection of educational discourse's importance may be found in the differing disposition toward learning to use Second Life of students such as LY15 and those such as LE8 and C5. As I noted in section 5.4, discussion of competition between learning to use the virtual world and subject learning appears based on the assumption that the former is not itself a form of subject learning, but rather extra-curricular effort for which time must be allocated from other, curricular learning. LY15's concern about learning to use Second Life taking time away from 'lecturing the facts' is clearly a reflection of this viewpoint. Nor is LY15 alone in voicing such concerns. This perspective was also discussed in the LEXDIS study of disabled learners' experiences of e-learning, in which concerns were raised over the time taken away from subject learning by learning to use assistive technologies (Seale, Draffan, & Wald, 2008).

Mishra and Koehler (2006) have theorised overlapping knowledge domains involved in educational technology use, including the 'technological knowledge' and 'content knowledge' that LY15 appeared to be contrasting. As Kinchin (2012) has argued, knowledge domains need not be equally valued; it is thus plausible that viewpoints such as LY15's demonstrate differential prioritisation of content and technological knowledge born from particular discursive constructions of HE. LY15's perspective is also congruent with the

'vocationalist' (Fanghanel, 2009) orientation toward HE's purpose: focusing on the employability facet of university study that Barnett (1992) has characterised as the production of highly qualified manpower. If learning to use a technology does not seem to have any lasting relevance for discipline/profession, it is likely that a student with a vocationalist orientation would not consider such learning purposive or, at least, as competing for time perhaps better used on subject learning. It is evident also how this orientation would be conversant both with Hall's (2011) argument that perspectives on educational technology have been captured by discussions of 'knowledge economy' and the market value of learning, and with economic theories of time that highlight, as LY15 did, the efficient use of scarce temporal 'resources' (e.g. Becker, 1965).

These analyses are somewhat speculative insofar as research on students' ideological orientations to HE and the subsequent effect on their positioning of learning technologies is not yet available[32]. Nonetheless, they demonstrate a plausible way in which educational discourse at an abstract level may have practical implications within the learning situation. To understand judgements of purposiveness we need to understand the meaning structures in which these judgements are situated; otherwise we have no concept of the hierarchy of values being drawn upon to evaluate the worthiness of a particular action or artefact. To some degree we must go back to the political and ideological systems in which these decisions are based because these discourses (recognised overtly or not by students) influence situational judgements about purpose and value. Hall's (2011) discussion of how ideas about educational technology tend to be shaped by, and contained within, wider capitalist philosophy on the production of worthwhile knowledge and labour is a useful demonstration of the connection between specific learning situations and macro-political discourses that permeate students' lives. Livingstone (2012) has

[32] Cardoso, Santiago, and Sarrico (2012) show, in their analysis of students' social representations of university quality, that market and managerial discourse is highly influential in shaping perspectives on quality assurance systems. Although Cardoso et al.'s analysis makes no link to educational technologies, it does indicate that 'vocationalist' ideologies might presently be dominant, implying that perspectives linking the purposiveness of educational technologies to their relevance for future career trajectories may be equally dominant.

termed this the ‘ideology critique’; scrutiny of the societal context in which educational technologies are produced and applied. The ‘ideology critique’ can be viewed as the most abstract or philosophical layer of the multiple meaning-making frameworks that shape perspectives on the learning situation.

The virtual world and learning situation are not considered in isolation from other meaningful concepts in students’ lives. The webs of meaning that give definition to students’ everyday life and learning practices are also the shaping forces for perspectives on the virtual world. Activities, actors, and technologies involved in the learning situation are positioned within the discursive arrangements that are perceived as salient; discipline, education, digital games, family, and work are examples of discourse perceived by some (or many) students as salient. To understand perspectives we must analyse how discourses shape perspectives and how they are subsequently articulated by students. Moreover, and as the next section discusses, we must not elide the diversity of particular discursive connections because we perceive them differently ourselves.

7.4.2. Contentious relationships

The definition of virtual worlds has been a contentious topic. One particularly controversial aspect of the academic debate has been the relationship between virtual worlds and digital games, in which groups of academics have attempted to distance virtual worlds from digital games (e.g. Bell et al., 2010; Boellstorff, 2010), whilst others have sought to situate virtual worlds within games-based learning (e.g. Toro-Troconis et al., 2010) or associate them with game-playing ‘behaviours’ (e.g. O’Connell et al., 2009). Whatever the particular political or theoretical drivers behind this dispute, this thesis has demonstrated that the discourse of digital games is important in positioning virtual worlds for many participants. The discussion of whether a virtual world is or is not a game must therefore be tempered (though not disregarded) by recognition that many of the students in this analysis perceived digital games to be salient to understanding

Second Life, regardless of the identity ascribed to virtual worlds by academics. Put differently, whether or not a virtual world is a type of (or related to) digital game, we need to acknowledge that students are making this association and examine the consequences of the discursive positionings that arise.

Invocation of digital game discourse within research on virtual worlds has not fully taken into account the consequences of this association to students' engagement experiences. In fact such deployments have been partial and selective, generally in support of specific pedagogic approaches that the authors advocate. Discussions of 'game playing skills' (O'Connell et al., 2010, 2009) or gaming backgrounds (Toro-Troconis et al., 2010) have rarely set out exactly which traits or capacities are being targeted, nor holistically examined how the experiences of game playing might impact upon engagements with virtual worlds. Academics rarely champion the educational opportunities engendered by leveraging the game-playing activities of cut-throat competition, deception, intolerance, and rudeness for instance, yet these are all facets of particular game playing cultures; as C1's comparison of Second Life and online FPS games highlighted. This contention is particularly important when we consider the different cultures of gaming that are likely to arise from different gaming communities (in online FPS communities versus Facebook casual gamers, for instance), leading to a potential incongruence between academics' homogeneous claims about gaming and students' discursive constructions of gaming.

It is also questionable whether the skills considered 'game playing skills' are linked solely to games or are more broadly based. Vaegs, Dugosija, Hackenbracht and Hannemann (2010), for instance, surveyed 1000 gamers to examine the development of skills whilst playing games, including a mix of motor (e.g. hand-eye coordination), technical (e.g. programming), and collaborative/communicative (e.g. foreign languages) skills. Whilst participants self-reported that some skills were developed solely by playing digital games (16.97%), a far greater proportion were developed either 'mostly by playing'

(29.36%) or ‘mixed’ (34.52%), in which skills were developed both by game playing and by related activities such as managing collaborative groups (e.g. guilds, corporations, clans) and maintaining gaming-related websites (Vaegs et al., 2010). Skills associated with digital game playing may therefore also span related activities that are not unique to gaming; web design, collaborative organisational skills, and so forth. Similarly, Steinkuehler’s (2007) research on literacies within Lineage – a virtual world game – has highlighted the preponderance of textual literacy practices (such as reading and writing prosaic text) that are not unique to such spaces, but rather which draw on and contribute to literacy practices from other areas of life. Although neither finding detracts from the claim that gamers may have elevated proficiency in literacy practices linked to digital games, it does emphasise that the activities to which ‘game playing skills’ claims appeal are neither unique to gamers as a group nor are unique to gaming as an activity.

We must also be cautious in drawing conclusions about the transferability of skills from gaming to virtual world learning situations. Previous experiences in digital games have been indicated to inform only very specific, contiguous types of gaming actions; rather than ‘gaming’ generally (Pelletier & Oliver, 2006). Educational researchers discussing virtual worlds have made little attempt to theorise between-game transfer of behaviours, especially behaviour that may be problematic and hinder activity. Pelletier and Oliver (2006) observe that whilst transferral of norms or frameworks for action may inform or underpin game playing, such transfer can also create opportunities for incongruence and undermine current gaming activities. We have seen examples of problematic transfer in this thesis; for instance in LY15’s attempt to punch other avatars within Second Life based on her previous experience of beat ‘em up games. Mysirlaki and Paraskeva (2007) have highlighted a positive correlation between higher frequency of digital game playing and playing violent digital games, such as beat ‘em up and first-person shooter games. This association suggests that those with the most experience of digital games and most sophisticated gaming skills are also likely to be those for whom norms of action derived from gaming

environments are most inappropriate for educational settings. Whilst Mysirlaki and Paraskeva's research was conducted with only Greek adolescents, it should nonetheless caution us that about championing the application of students' 'game-playing skills' or behaviours. Clearly a less partial rendering of the relationship between educational use of virtual worlds and leisure use of digital games is required before any conclusions should be drawn.

A holistic portrayal of the relationship between virtual world and digital game is likely to be complex because of individuals' varying engagements with digital games. Vaegs et al. (2010) have demonstrated that gamers often have multiple preferred genres, each with different frameworks for action and different temporal and spatial configurations (e.g. played at home on a console, on a smartphone travelling on the train, and so forth). As chapter 6 illustrated, many different digital game reference points were drawn upon in discussing the virtual world. Each reference point suggested different assumptions about norms of practice (e.g. spatial, communicative, collaborative), norms of usage (e.g. leisure, business, educational), and sites of usage (e.g. online, offline, in a group, alone). Gee has asserted that video (digital) games are '…a family of related, but different [semiotic] domains, since there are difference types or genres of video game' (2004; 19). A potentially useful outcome of the analysis I have presented in chapter 6 is to draw attention to how mapping out the influence of these semiotic domains can be productive in interpreting students' practices in, and perspectives on, the use of virtual worlds.

These reference points must also be considered in light of individuals' unique histories with digital games, such as previous experiences with particular types of games, and school and family histories of technology use. In the latter cases, research examining students' experiences of e-learning has demonstrated how important the social influence of school and family can be in supporting or discouraging uptake of technologies (Seale et al., 2008). Similarly, it is likely that the presence or absence of games in family homes will shape interpretations of digital game discourse and subsequent positioning of virtual

worlds. We might plausibly add to this that previous experience of using digital games or virtual worlds within an educational context (e.g. school) is likely to be influential. Research by Vaegs et al. (2010) indicated that few gamers reported 'education' to be a motivation for game playing, suggesting that digital games are not conceptually linked with educational contexts or approaches to learning; regardless of whether gamers feel they 'learn' whilst playing.

Following the implications of game 'genre' for behaviour and perspective, we might also find analysis of other gaming meta-levels useful. Bartle (2004), for instance, has offered an extensive commentary on how different players play the same games in varying ways. Moreover, and as the discussion of griefing in chapter 4 has highlighted, these competing approaches to defining and enacting game play can be (although are not always) acrimonious and disruptive. Discursive conflicts around the appropriate use of technologies are thus as common in gaming as theorists of science and technology studies have observed more broadly (e.g. Clarke and Montini, 1993; Friese, 2010; Johnson, 2010). Given the issue of player 'typologies' (e.g. Bartle, 2004), it seems unlikely that even histories of gaming – unless addressed in near-exhaustive detail – can tell us much *a priori* about the likely discursive positioning of virtual worlds.

We can additionally extend this scrutiny of meta-levels to analyse the concept of 'play' and its relation to educational applications of virtual worlds. Sutton-Smith (1997) has articulated seven competing 'rhetorics' (discourses) that conceptualise play, some of which - such as that of developmental progress - are more germane to prevailing discourses of (higher) education than others. The political implication for educational technology of discursive framings of play has been astutely stated by Pelletier (2009) in her observation that, in UK policy discourse at least, digital games have been considered educational insofar as they provide more engaging ways of teaching existing content. As Gee (2003), amongst others, has argued, however, there is much that can be regarded as educational about digital games and gaming cultures beyond the

capacity of digital games to repackage existing pedagogic content in new media wrappers. Indeed we have seen both in the context of this thesis – notably, in section 6.1.2, C1's stance on the recreation of computing language tutorials in Second Life – and in the literature more broadly (e.g. Mount et al. 2009: Esteves et al. 2011) that such repackaging is often poorly regarded by students.

To complicate this matter further, Sutton-Smith (1997) has observed that the history of western thought on play – in this case with digital games – has been dominated by an orderly view of play as rule governed, rationalistic, and amenable to enrolment into the discourse of developmental progress. The cases educational researchers have made for the developmental merits of digital games and the subsequent portability of practices across domains (e.g. O'Connell et al. 2009) follow this pattern; rationalistic, progress oriented, and focused on the cognitive and affective transferability of practices. Two complications arise from this orientation. As Sutton-Smith (1997) identifies, however, there are alternate discourses that position play practices not as intellectually progressive and rule governed, but as, amongst other things, irrational, chaotic, and indeterminate. Students may potentially see neither digital games nor play as rational, developmental, orderly, or progressive and may identify them more closely with one of the alternate rhetorics that Sutton-Smith examines. If, for instance, students assume what Kane (2004) has referred to as a 'puritanical' posture toward play as 'frivolity' or 'non-work' - as perhaps is the case for the students, such as LY5, who lamented the 'gamey' quality of Second Life – then we might expect discursive positioning of virtual worlds as games or game-like technologies to engender resistance in educational settings. As Pelletier has noted: 'Significations of "game" are strategic: they realize a social purpose. The ways in which students signified their production work as "game" positioned them differently in the classroom' (2009; 99). Positioning virtual worlds as, or akin to, digital games signals *something* about their discursive framing, but herein lies a degree of ambiguity that flows from the complexities of games and play in society generally.

The relationship between games and virtual worlds is thus particularly complex. Pressing questions arise both about the effectiveness of 'skill transfer' inter-game and inter-technology and the degree to which game-playing histories are likely to be educationally useful even if skills are portable between situational engagements with digital games. Moreover, it is clear that discursive associations between digital games and virtual worlds raise a variety of additional questions about the social construction of gaming and play within different contexts. Examinations of the relationship between digital games and virtual worlds must take in multiple levels of engagement, from individual's historical practices in game-playing to macro-social or cultural constructs of 'play'. Whilst Sutton-Smith (1997) does not deal directly with higher education, the analysis I have presented indicates a plausible connection between rhetorics of play and virtual worlds, mediated by the perceived connection between the latter and digital games. A critical analysis of play discourse and the discursive positioning of educational technologies, akin perhaps to the discussion of identity and play in virtual worlds (e.g. Savin-Baden, 2010b), might prove helpful in clarifying these issues.

We should consider two further factors in offering a more holistic conceptualisation of the relationship between digital games, virtual worlds, and the learning situation. Firstly, the discussion above is youth-centric when HE is, in many cases, age diverse. It is plausible that some students may have been avid digital gamers whilst in a different stage of their life, but are currently not frequent game players. K7's comments – in section 6.2.1 – on his previous engagement with arcade games but current engagement only with what he perceived to be a lower 'level of game' exemplified changing commitments to digital gaming. These changing commitments are a temporal dimension to the discursive positioning of virtual worlds that I have not dealt with extensively in this thesis, but which could be productively analysed in further work pursuing a detailed understanding of the relationship between digital games, virtual worlds, and play. Finally, research on game playing behaviours also indicates that preferences for particular genres or types of digital game may be gendered

(Mysirlaki & Paraskeva, 2007), a variable that, understated greatly, co-varies with norms of societal behaviour, discourses of work, leisure, education, vocation, and numerous other cultural and institutional arrangements.

Gaming trends also move quickly; likely far more so than ideologies of education or conceptions of discipline. Whilst virtual world games experienced a remarkable growth in audience and sophistication throughout the 2000s, more recently emphasis has shifted toward other forms of gaming; particularly 'casual' gaming (e.g. Android/iOS games, Facebook games). The types of games that have influenced current students' conceptions of digital gaming may be radically different to those that influence students in two, five, or ten years. Technological developments such as 3D visual displays (e.g. 3D TV, Nintendo 3DS), motion controls (e.g. Playstation Move, Xbox Kinect), and ubiquitous access to gaming platforms (e.g. Adobe Flash-based games on mobile devices) particularly point to a gaming future that looks quite different to the recent gaming past. Additionally, and as Gee (2003) has observed, emphasis in games is dynamic and subject to change both through technological progress and social and cultural factors in the player-audience. A diachronic analysis of digital games discourse and its influence on perspectives is thus likely to reveal a shifting conception of 'gaming' and a differing impact on other discursive arrangements.

Whatever the future of digital games, the salience of digital game discourse perceived by current students cannot be ignored if we wish to build a sophisticated understanding of perspectives. Nor, however, can the constitution and consequences of this relationship between digital game and virtual world be based on assumptions about 'gamers' or 'game-playing' skills; it must be based on evidence. As such, we need to examine the relationship between digital games and virtual worlds closely - including the relationship between particular gaming histories and the transfer of norms – even if we intend to challenge this association, as authors such as Boellstorff (2010) and Bell et al. (2010) have advocated.

7.4.3. Other personal commitments

The discourses of family and work draw our attention to the way that perspectives are not shaped only by idiosyncratic interpretations of ubiquitous discourses such as discipline, but can be highly individualised and have overtly practical consequences. Family and work arrangements will be of paramount importance to some learners, particularly those with many commitments to balance, whilst for others they will be largely irrelevant. For students such as C1, who have full-time jobs and family commitments in addition to educational commitments, the virtual world may be conceptualised in terms of its relation to these other commitments. In the analysis of C1's comments we saw that spending time in Second Life and spending time with his wife were perceived as competing for the same limited time resources. Similarly, work commitments such as office hours constrained action that students such as K3 and C1 could take without entering into conflict with employers.

Conceptions of places and times involved in family and work may contrast with conceptions of the same places and times emerging from the learning situation. The 'home', for instance, may carry connotations of being a non-working space, and yet the virtual worlds used in the Chelby module permeated this space and challenged the way home was perceived. In such cases home computers may also be work computers and family spaces may be needed for working in ways not previously required. Tusting (2000) has argued that particular spaces of practice can be identified by time as well as place, and that often practices are divided by time more readily than place (e.g. different times within a work space often correspond to different practices, such as lunch, meetings, and so forth). Construal of specific timeframes simultaneously as specific practice spaces – the home as a non-working space, for instance – is thus part of a wider discussion of how practices are linked to, and configure, socio-spatial contexts (Murdoch, 1998). These discussions also take place within the analysis of how ICTs are challenging existing delineations of space and time, eroding extant

divisions between literacy spaces and giving rise to alternative temporal and spatial configurations (Hassan, 2003; Wajcman, 2008; Duncheon and Tierney, 2012). Although debate on the effects of these new temporal possibilities is by no means settled (see Hassan, 2010; Wajcman, 2010) - and nor is it entirely about 'time', but rather time and space (Massey, 2005) - it is evident from the analysis in this thesis that issues of temporality, the action-oriented configuration of particular spaces, and the engagement with virtual worlds can readily intersect.

The LEX report (Creanor et al., 2006) has demonstrated that family is an important factor for some students' experiences of e-learning; including the management of tensions amongst family members over ownership and use of home computing devices. This is reflected in C1's experience of needing to discipline himself and his children to treat his working at home as if he was still on campus. Conceptions of home and study spaces may also differ amongst students, depending upon their patterns of study (e.g. working at home, on campus, in a library, and so forth) and circumstances of their home or work (e.g. familial commitments, availability of hardware, time allocated to other activities such as paid employment). We should also be cautious not to assume that those more familiar with distance learning will necessarily regard Second Life as part of this category. As C1's comments on the contrast between synchronous learning through Second Life and asynchronous learning through work packages made clear, engagement with virtual worlds can also refigure existing distance learning arrangements.

A key observation emerging from the LEX project was that those who considered themselves to be effective learners in e-learning contexts are able to integrate learning, work, leisure, and family commitments effectively (Creanor et al., 2006). The exact strategies employed in achieving this balance are not entirely of concern to this thesis, but it is of vital importance that these discourses intersect and integration is required insofar as this necessity illustrates the influence extant meaning structures exert on the learning

situation. As Wajcman (2008) has argued, these discourses - and the spaces, times, and practices they imply - are increasingly prone to transcend (pre-ICT) boundaries and lead to complex negotiations over their integration. Such integrations should not be taken lightly, even if it is deemed that new configurations of working with virtual worlds have great potential (e.g. Savin-Baden, 2008; de Freitas & Neumann, 2009). Livingstone (2012) has commented that every new relationship between learners and learning situations creates new uncertainties and possibly new inequalities. We must be careful not to assume that new configurations of learning – e.g. new spatial arrangements such as synchronous, embodied distance learning – are necessarily empowering, even if they appear to have potential to act in this way. Such arrangements can involve complex negotiations between extant meanings for spaces, times, and technologies, and the new orthodoxy of a learning situation.

7.4.4. Conclusions

It follows from the commentaries above that we would be well advised to orient ourselves to think about students' perspectives on virtual worlds not simply as a product of empirical experience, but as a reflection of complex discursive relations in individuals' lives. This means we should not conceive of perspectives as reactive to particular modular offerings (e.g. as evaluations measure 'attitudes'), but as constructive; situating virtual world and learning situation within extant discursive arrangements (and potentially transforming them). We should understand that 'meaning is an interpretation' (Mezirow, 1991, p. 11), and orient ourselves to examine the factors that shape this interpretation. To use the example of discipline, cases have been made - by Rogers (2011) and Hudson and Degast-Kennedy (2009), for instance - for the relevance of virtual worlds to particular disciplinary settings. Yet we also need to examine how students situate virtual worlds in relation to disciplinary discourse, rather than assume the interpretations offered by tutors are necessarily shared by students. More generally, it is not enough to merely measure students'

perspectives (or experiences, or attitudes, etc.) in generic terms - such as ease/difficulty, useful/useless, improved learning/failed to improve learning, and so forth - as an evaluative response to particular learning situations. Rather, we need to consider the ways in which these learning situations are immersed in meaning structures within participants' lives. From this perspective, notions of ease or difficulty, or usefulness and uselessness, are merely specific reflections of a much broader and more analytically important process; the discursive positioning of the virtual world.

Given that perspectives cannot be divorced from their discursive networks, we must map out these networks for individuals if we are to develop a sophisticated understanding. This is an unappealing prospect for HE, however, where the time and resource investment in undertaking such an exercise would be huge. There is little resource available to explore the constellation of discourse shaping each and every student's perspectives on virtual worlds for the benefit of one module in an entire degree course. Even if such an exercise were conducted, involving far more detailed biographical research than I have presented here, it would swiftly become obsolete; use of virtual worlds is relatively infrequent within academic courses and it is to be hoped that discourses of, for instance, discipline will morph as academic study progresses. Approaches that advocate longitudinal analysis of students' lives, such as Erstad's (2012) concept of 'learning lives', might provide some utility here, but investment into such projects would require cooperation across HE, FE, secondary education and, consequently, would likely require policy impetus at governmental level.

On a more immediate basis, the key discourses identified within this thesis – discipline, education, digital games, work and family – can be taken as exemplars and likely referents in any discussion of virtual world use. Discipline, for instance, is a key discourse in positioning the virtual world for many of the participants and there is little reason to suspect that, with the exception of certain non-disciplinary offerings, this will differ in other virtual world learning

situations with UK HE. Research exploring students' conceptualisations of discipline could thus inform expectations of their response to virtual world learning situations, as could research exploring disciplinary differences in patterns of e-learning use (e.g. Conole et al., 2006) help guide expectations of how the virtual world might be used. Existing and forthcoming research literature can offer many insights without specifically being concerned with virtual worlds, providing the association between discourse and virtual world learning situation is acknowledged. Similarly, Oliver (2005) has noted that Foucauldian methods could be used to excavate and analyse discourse related to educational technology. Genealogical (Foucauldian) analysis would shift focus away from the learning situation specifically and toward historically situated networks of meaning generally, but such holistic research could productively be used to situate analyses of future experiences with educational technology.

We should be wary, therefore, of enthusiasts who champion the transformative potential of particular technologies with little regard for the complexities of implementation and engagement. Complexities do not only imply 'barriers' to adoption (Warburton, 2009), but varying experiences and perspectives on engagements that, ultimately, reflect the disunity of discursive positioning. As Pelletier (2005) has observed, educational technologies tend to be co-opted into stakeholders' agenda and deployed to dominate competing ideologies through insistence on their 'inherent consequences for the university's practices and beliefs' (2004: 13). Technopositivist sentiment, to which I referred in chapter 2, does much to enable such ideological moves through elision of complexity in our relations with educational technologies.

We must also be wary of assuming that discourses are experienced and interpreted in the same way by all (or many) students, or that the same discourses 'matter' for all students in shaping perspectives. The dialectic of individual interpretation of discourses and the structuring effect of socially constructed discourses belies these assumptions for two reasons. Firstly, even

when relatively stable discourses, such as discipline, are present, interpretations of these discourses may differ between students based on a variety of factors. Academics' conceptions of discipline at the institution, contemporaneous disciplinary trends, intersection between ideas about discipline and about education, and previous experiences within the discipline are examples of factors that may influence individuals' interpretations.

Secondly, the discourses that are salient to individual students will vary substantially. Whilst a student who experiences some intersection between family, work, and education may find these discourses relevant, this is unlikely to be reflected in the perspectives of a full-time undergraduate student with less extensive familial commitments, not working, and living (alone or with fellow students) on campus. As we have seen in the data, family and work were discussed only by a few students. Other discourses may be perceived to be more or less salient depending on the student and the situation in which the virtual world is encountered. Conceptualisation of identity serves as an example discourse already explored in the literature (e.g. Bayne, 2005: Bayne, 2008b: Savin-Baden, 2010b: Peachey and Childs, 2011) that may be salient in particular cases and to particular students. In this analysis there have been links to issues of identity, particularly in the divisions between students and strangers, resistance to VoIP chat in Second Life, and surreal encounters with others in Second Life. Some of these connections resonate with theorists' analyses of identity politics in educational technology, such as concerns over identity control, deceit, and risk (e.g. Bayne, 2005). The challenge, analytically speaking, lies in reconciling which discourses are most salient to students in situ – accepting that 'silences' (Clarke, 2005) may be informative - and which are most salient to researchers' worldviews, such that they become the dominant issue in analysis (a constant tension in Grounded Theory). One lesson from the influence of discourse in these findings is that analyses treating only a single discursive domain (e.g. identity, space, time, discipline), no matter how sophisticated the analysis, are unlikely to offer a holistic rendering of students' perspectives that span multiple discursive domains simultaneously.

Emerging most clearly is the partiality of the findings and the tentativeness of their consequences. The theoretical conclusions of this thesis are akin to the 'sensitizing concepts' outlined by Blumer:

> 'whereas definitive concepts provide prescriptions of what to see, sensitizing concepts merely suggest directions along which to look' (1954; 7)

The discussions that have preceded, initially on the resonance between past and present, then on stances toward learning, and latterly on discourse, certainly cannot provide us with 'prescriptions of what to see', but they can offer 'directions along which to look'. Although we cannot easily evaluate the networks of connections involved in a student's life, nor how students interpret these connections, we can look along some common directions for pertinent information. We can investigate the foundational skills possessed by our students at the outset of the learning situation and, perhaps, even challenge our own conceptions of what skills are foundational in the learning situation. We can examine the forms of experiences students have previously encountered and theorise how the normative frameworks for action engendered by these situations (e.g. particular types of digital gaming, classroom or distance study, and more) may transfer into the virtual world. More generally, we can conceptualise the relationship between students and the learning situation in terms of the wealth of connections to extant meaning structures in students' lives. By thinking in this way we open our analysis firstly to the possibility of diverse elements that go beyond technologies and institutional arrangements, and secondly to understanding the discursive constructions of the virtual world that we must support or challenge if we wish to promote a specific educational message. Through turning our gaze in these directions, in addition to those others which are already productively examined in existing research literature, we might build a more sophisticated and attentive understanding of students' perspectives on the use of virtual worlds in HE.

7.5. Ways forward

In this section of the discussion I argue in a more speculative manner toward the end of indicating future possibilities that follow from the foregoing analysis. To some degree I have done so already in this chapter, yet there are two specific themes to which I believe attention might be productively directed and which I will highlight here. These themes are: 1) expanded analysis of the discourses I have identified as salient, and 2) the case for interdisciplinarity.

7.5.1. Expanding particular discourses

During my summation of the analytic findings and discussion of their implications I have at times indicated that one could productively further investigate the specificities of a particular discourse. Certainly there are avenues for theoretical development - in terms of understanding virtual worlds specifically and educational technology broadly – in both the specific discourses I have identified (discipline, education, digital games, family and work) and the approach of excavating discourses as a way of illuminating students' perspectives. In previous sections – notably 7.4.4 - I have made the case for adopting an approach that examines discourses and so I focus here on the former issue: examples of how the theoretical conclusions relating to discourses identified in this analysis might be extended. In particular, I examine ways forward for games, time, and discipline.

The analysis of digital games in chapters 6 and 7 challenges the simplistic linkage sometimes made between gaming and virtual worlds in education (e.g. Toro-Troconis et al. 2010). The most immediate way forward implied by this challenge is to suppress the tendency toward superficial and to undertake more nuanced analyses of game playing practices, skill transfer, and digital game genres. As Steinkuehler (2007) has observed, lax definitions are a feature of discussions on gaming generally (particularly, though not exclusively, in the popular press) and it is clear from the analysis I have presented in the

preceding chapters that conflating game genres alone – homogenising, for instance, casual games on social networking sites and online first person shooters – is likely to lead any academic analysis into troublesome terrain. Any case linking virtual worlds and digital games can only be made persuasively with due regard to the latter subject and not, as appears to have become the norm in some approaches (e.g. O'Connell et al. 2010), on the basis of 'gaming' being held as a demographic context that merely frames the engagement with virtual worlds. Clarke's advice on analysing situations might prove helpful here: 'There is no such thing as "context." The conditional elements of the situation need to be specified in the analysis of the situation itself as they are *constitutive of it*, not merely surrounding it or framing it or contributing to it. They *are* it.' (2005: 71, italics in original)

An interesting extension of analysing digital games as constitutive of situations involving engagements with virtual worlds is the role that discourses of 'game' and 'play' might take in shaping perspective. In section 7.4.2 I highlighted the way in which 'rhetorics' of play (Sutton-Smith, 1997) might be viewed as another discursive framing for the learning situation, made relevant by the association between virtual worlds and digital games. Such rhetorics may be sufficiently well entrenched and durable that they constitute silences in the data (Clarke, 2005) which must be examined directly, rather than expected to emerge in analyses through participants' accounts of the learning situation. It is notable that rarely (if ever) have these two facets of the relationship between digital games and virtual worlds – the literacy and practice aspect and the discourse of games and play aspect – been considered together in research concerning virtual worlds. Literacy focused accounts have tended to analyse what goes on within and around engagements with virtual worlds (e.g. Merchant, 2009: Gillen, 2009) and digital games (Gee, 2003: Steinkuehler, 2007), with some attention to digital game play as participation in wider societal discourses (e.g. Steinkuehler, 2006). The ways in which varying discourses of play or digital games might shape literacy practices in educational situations has, however, been broadly absent from such analyses. Pelletier (2009) has

argued that in educational contexts digital games might be productively analysed as a relation or discourse, rather than an interface or artefact, and their effects on framing and shaping practice across spaces and times considered. If connection can be made between this approach to digital games *qua* digital games and analysis of digital games *qua* a discursive framing for virtual worlds, the discursive and literacy facets of digital games' influence on engagements with virtual worlds might be productively reconciled.

Issues relating to time also emerge at various points in the analysis, including in the division of time by practices, spaces, and actors (e.g. family time, work time, study time), time pressures and the scarcity of time both within courses and within lives generally, coordination across time zones in Second Life, and so forth. Temporality is clearly salient to understanding experiences, even if it has not been a primary focus of the analysis I have offered, which has been more closely concerned with how action is shaped by discourse. Issues of temporality, however, reveal another sense in which virtual worlds are situated within and may potentially transform existing discursive arrangements, for instance in C1's experience of the shift to synchronous, from asynchronous, study. Moreover, it is clear that virtual worlds tie into wider debates[33] about time compression (Wajcman, 2008), the erosion of unilinear Newtonian time as the temporal benchmark of modern life (Adam, 1994: Hassan, 2004), and changing engagements between students and HE in light of the technologies ostensibly involved in transforming temporalities (Duncheon and Tierney, 2012).

It is also important whilst considering issues of time to maintain a theoretical link between the discussion of time vis-à-vis temporality and speed (e.g. Hassan 2003), and time vis-à-vis trajectories and social practices (e.g. Tusting, 2000). Changing conceptions of temporality are likely manifest in changing practices (Hassan, 2003), and changing practices are germane to discussions of (digital) literacy and the influence of both extant practices and discursive framing on engagements with educational technologies. Nor are such changing practices

[33] See Bergmann (1992) for a review of the complexity of such 'wider' debates within the context of the sociology of time.

framed solely within the context of temporal discourse, but rather are within a network of socio-cultural pressures that may shape, and be shaped by, educational technologies. As Wajcman (2008) observes, time does not necessarily accelerate with technology in a uniform manner; some forms of labour, notably caring labour, tend to remain stubbornly slow in face of supposedly accelerating ICTs. We have seen in this thesis how notions of family and study time have intersected, an intersection that defines ground for analyses to connect educational technologies, temporalities, and a far wider arena of domestic politics and practices. The degree to which such conversations between areas of theory are conducted within educational technology research is often limited, yet they are nonetheless vital.

Finally, issues of discipline yield a more specific empirical route to their exploration insofar as the data that informs my analysis has a unique mapping of discipline: each site is a different institution, different disciplinary area, different pedagogic application of the virtual world, and different student cohort. This reflects the diversity in virtual world applications and has not detracted from the analysis, which has been more concerned with the influence of disciplinary discourse generally than charting the nuance of influence within specific disciplines. Nonetheless, the discussion of discipline has tended to highlight divides between subject areas – as previous work on e-learning has also done (e.g. Conole et al., 2006) – and has focused less on divides within subject areas. Given that discipline is influential in situating perspectives on virtual worlds it is certainly worthwhile to delve more deeply into how the framing itself (i.e. discipline) is constituted with regard to educational technologies. Working with larger participant cohorts within a single discipline could prove useful in establishing whether a finite number of common positions adopted by students in a specific discipline exist and, with comparison across similarly oriented studies, an understanding of commonality and uniqueness between disciplinary engagements with virtual worlds developed. Whilst I have implied in section 7.4 that an infinite number of discursive arrangements are possible, it is probable that the influence of discipline can be distilled into a finite

number of key positions: as Becher and Trowler (2001) have done for academic disciplines at large. Against the backdrop of Shulman's (2005) work on the 'signature pedagogies' of disciplines, it is curious that the influence of discipline on both pedagogic design and students' perspectives of virtual world implementations has been so little discussed. Certainly the analysis in this thesis indicates the importance of such an investigation, and perhaps the trifold division of classification/standards, technologies, and application domains might offer a conceptual shape for the enquiry.

7.5.2. Interdisciplinary analyses

In the discussion of time and temporality in section 7.5.1, I noted that discussions between areas of theory in educational technology research were vital if either a sophisticated analysis of perspectives or sophisticated pedagogic approach is to be derived. One general conclusion that might be drawn from this thesis is that the breadth of theoretical concerns gives good cause to champion an interdisciplinary approach, particularly drawing from those disciplines that accord some priority to scrutinising discourse and power in social life. It is difficult to see how we can provide a satisfactory analysis of the many elements this thesis has indicated to be pertinent without reaching far beyond cognitive and affective issues and into socio-political, cultural, and technological domains. The grounded approach I have taken invoked interdisciplinarity by way of avoiding a particular theoretical 'angle' *a priori* and by deriving conceptual tools through which to understand the data from a variety of disciplinary traditions. An alternative approach might instead take an overtly interdisciplinary stance from the outset, consciously drawing a theoretical framework from differing intellectual and ideological domains to build an analytical system capable of addressing the many facets of perspectives on virtual worlds I have identified herein. As long as one is mindful of the epistemic and methodological differences between traditions there seems to be great potential in an interdisciplinary analysis, perhaps one that treats its theoretical

framework as a messy ‘assemblage’ in the same manner as Law (2004) has advocated we treat our methodologies.

To propose a potential theoretical direction for such an assemblage, Actor-Network Theory (ANT) offers promise in meshing many of the disparate conceptual issues highlighted in the analysis. ANT has existing bodies of scholarship on space and spatial practice (Murdoch, 1997; 1998), networks of complex organisational and conceptual relations (Callon, 1991: Latour, 2010), time and temporality (Motzkau, 2007: Sorensen, 2007), in addition to common theoretical ground with wider Science and Technology Studies (STS), which itself treats issues of technology, time, space, infrastructure, and experience and which I have deployed at varying points in this analysis. In some capacity ANT has also addressed the substantive technologies and domains involved in this thesis, including virtual worlds (Jensen, 2009), digital games (Cypher and Richardson, 2006: Lammes, 2008), new media generally (Farnsworth and Austrin, 2010), and education (Fox, 2005: Fenwick and Edwards, 2010). As Pelletier (2009) has demonstrated in her advocacy of ANT as an approach to understanding digital games in education, the theory has the capacity to bridge divides between the terrains of technologies and education as readily as it might analyse each individually. As such, ANT might provide a valuable theoretical framing for understanding the topography of influences on students’ perspectives across the many discursive domains I have identified as salient.

ANT is one of numerous directions an interdisciplinary approach might take to reconcile the broad themes I have identified in this analysis. Bridging across areas as diverse as those I have identified above - and situating an analysis in the broader social context of change in higher education (e.g. Collini, 2012), competing discourses of globalisation (e.g. Pelletier, 2005), and so forth – is unlikely to be achieved by championing disciplinary silos and producing a multitude of barely conversant conceptual approaches. Educational research on virtual worlds is undoubtedly a multidisciplinary field, with contributions drawing on the expertise of business (Mennecke et al. 2008), media (Herold, 2010),

health (Rogers, 2011), linguistics (Gillen, 2009), performance (Childs, 2009), and myriad others. This thesis supports the need for multiple disciplinary voices in analyses of virtual worlds; the issues at stake are too broadly based, and the conceptual tools offered by different disciplinary approaches too useful, to become a disciplinary partisan in this matter. It is notable, however, that in the hype and the post-hype disillusionment around virtual worlds, the research field appears more as a cacophony of voices simultaneously speaking, with little common ground being established or synergy developed. To draw an example I posited in section 2.1, the issue of defining virtual worlds is now *more* open and ambiguous than it has ever been, which, whilst reflecting the valuable broadening of analyses to include new perspectives, means we are constantly in danger of talking at cross-purposes. The lesson we might draw, I suggest, is that as a community of researchers we must find a way of translating into a common language the many texts that speak of engaging with virtual worlds as learning technologies, whilst still retaining the richness of the originals. Interdisciplinary approaches, as a place to start, seem to offer potential in this direction.

7.6. Concluding words

This thesis presents two contributions to the field:

1. A methodological contribution through a rigorous, multi-site project that was not tied to any specific modular offering or development project
2. A theoretical contribution through the development of a conceptual analysis that was not rooted a priori in a particular model or approach (e.g. TAM) and that focused foremost on students' experiences and perspectives

What has emerged from the analysis may prove useful for practitioners and researchers in the field. The 'sensitizing concepts' developed through the thesis – e.g. the role of discourse - raise foundational questions that may prove useful for designers for teaching and learning. The orientation to discursive

arrangements that I am promoting here counsels us to act in three ways when considering research and design of virtual world learning situations:

1. To be more sensitive to the disciplinary and educational contexts in which we are working and, particularly, to students' interpretations of these contexts
2. To examine closely the discursive arrangements that we suspect our students are likely to consider salient (whether we agree with their assumptions or not)
3. To make fewer – if any – under-theorised assumptions about the role that previous technological skills and engagements will play in shaping current engagements

The degree to which curriculum design already embraces these aims has not been a subject investigated within this thesis, but the technological focus of the literature (discussed in chapter 2) perhaps indicates that more work is yet to be done.

It is unlikely that virtual worlds are unique in the way they are conceptualised through networks of meaning such as discipline, education, family, work, and so forth. This means there is a degree of general applicability to thinking about students' perspectives in these terms. Whilst particular discourses may not be as salient in discussion of other educational technologies and other learning situations, the role of discourse itself will remain paramount. As we have seen in the analysis, perspectives shaped by discourses influence fundamental decisions students' make about the purposiveness of educational engagements, learning to use technologies, and particular norms of action that can be applied to the situation. The consequences of discursive positioning are significant to educational researchers concerned with how and why students engage with technologies and, ultimately, how we can work to shape this engagement in the service of a more effective educational arrangement.

The notion of ‘learner voice’ (Creanor et al., 2006), for instance, can be enriched greatly by focusing not just on what learners are ‘saying’, but why they are ‘saying it’, and what discursive influences are involved in shaping these articulations. Voice is not merely the product of one individual, but of one individual reflecting interpretation of myriad socially constructed discourses; some of which this thesis has articulated. Given that reports on students’ experiences of e-learning (e.g. Conole et al., 2006; Creanor et al., 2006; Jefferies, Bullen, & Hyde, 2009) have found a multitude of influences on ‘voice’, it is surprising that our attention has not shifted more to charting the social factors which situate and influence voice; rather than becoming engrossed solely in the voice itself.

Most important, whilst this orientation to discourse and challenging taken-for-granted or deterministic concepts of technology is not new, it is inconsistently applied and frequently drowned beneath the ‘noise’ of hype associated with new technologies and their educational possibilities (Selwyn, 2011). As a final sentiment I therefore echo Bennett and Oliver’s (2011) observation that opportunities to ‘talk back to theory’ are being missed within the current cycle of research engagement; of which virtual worlds seem to be a prime example. An effective understanding of students’ perspectives on educational technologies must be rooted in a theoretical engagement with the extant meaning structures into which those technologies enter. It should not be assumed that new technologies elide previous arrangements, but rather that they build onto them and – potentially – transform them[34]. As Star and Ruhleder (1996) commented in reference to infrastructural systems, these do not begin anew, but rather they are shaped by and, in some cases, subvert existing arrangements. It is perhaps more telling, then, to examine how new approaches and technologies transform what is already there in education, rather than what they (may) generate afresh.

[34] Selwyn (2011) offered a critique of the ahistorical posture adopted by much educational technology research and, by way of remedy, discussed the history of technology use in education into which new technologies enter.

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Appendices

Appendix 1: Example of a site information sheet

Overview

This research project aims to explore the use of virtual worlds in UK higher education as educational technologies, particularly focusing on the experiences of students involved in modules with a virtual world element. The project asks a broad question about engagement with virtual worlds:

- What are students' perspectives on virtual world e-learning technology in UK higher education?

The goal of the project is to explore experiences of students on modules that use virtual worlds, and to understand the influences that underpin them. Conversely, the research is not designed to evaluate or judge practices, teaching, or students involved in virtual worlds.

This facet of the project is organised by Matt Mawer (PhD student, Coventry University) as part of the larger CURLIEW project and his doctoral research. The overall project is managed by Learning Innovation ARG (Coventry University) and funded by the Leverhulme Trust.

Additional information can be found at: http://cuba.coventry.ac.uk/leverhulme/

Taking part

I would like to interview individuals about their perspectives on virtual worlds and experiences within the module. Interviews are usually about an hour long and are an opportunity for me to gain some understanding of your thoughts and actions. These interviews are audio recorded and then transcribed; you can then review the transcript to make sure it is an accurate reflection of the interview and to change or add to what you have said.

All interviews are confidential and you will be offered the chance to choose a pseudonym for your transcript also. Transcripts will be stored securely and all procedures during the research will follow the Data Protection Act (1998).

Not taking part

Involvement with the project is entirely voluntary, so if you do not want to take part then there is absolutely no compulsion to do so.

If you change your mind after an interview or focus group and want to withdraw from the project you are free to do so. You can do this by contacting me (details below) and any data you have in the project, for example an interview transcript, can be removed. For this reason you should keep a copy of the participant number you receive and pseudonym you choose in order to withdraw the correct data!

Contact information

Matt Mawer (PhD student)
Learning Innovation ARG
Coventry University, Enterprise centre 2.1

Puma Way, Coventry, CV1 2TT
Email: mawerm@coventry.ac.uk

Appendix 2: Internet use survey

Name:
Age:
Gender:

1. **How often do you use the internet?**
   (Mark most accurate)

Hourly		Monthly	
Daily		Longer than monthly	
Weekly		Never	

2. **How often do you use social networking websites/tools?** (E.g. Facebook, Bebo)
   (Mark most accurate)

Hourly		Monthly	
Daily		Longer than monthly	
Weekly		Never	

3. **How often do you upload content to media sharing sites?** (E.g. YouTube, Flickr)
   (Mark most accurate)

Hourly		Monthly	
Daily		Longer than monthly	
Weekly		Never	

4. **Do you use any types of internet communication technologies on a weekly basis?**
   (Type yes/no as appropriate)

Instant Messenger (E.g. MSN messenger)	
Email	
Telephony (e.g. Skype)	
Other (Please specify by replacing this text)	

5. **Do you play any types of computer games on a weekly basis?**
   (Type yes/no as appropriate)

Console or PC games (i.e. mostly offline)	
MMORPGs	
Facebook/casual games	
Other (please specify by replacing this text)	

Appendix 3: **Example of a participant information sheet**

Overview

This research project aims to explore the use of virtual worlds in UK higher education as educational technologies, particularly focusing on the experiences of students involved in modules with a virtual world element. The project asks a broad question about engagement with virtual worlds:

- What are students' perspectives on virtual world e-learning technology in UK higher education?

The goal of the project is to explore experiences of students on modules that use virtual worlds, and to understand the influences that underpin them. Conversely, the research is not designed to evaluate or judge practices, teaching, or students involved in virtual worlds.

This facet of the project is organised by Matt Mawer (PhD student, Coventry University) as part of the larger CURLIEW project and his doctoral research. The overall project is managed by Learning Innovation ARG (Coventry University) and funded by the Leverhulme Trust.

Additional information can be found at: http://cuba.coventry.ac.uk/leverhulme/

Taking part

I would like to interview individuals about their perspectives on virtual worlds and experiences within the module. Interviews are usually about an hour long and are an opportunity for me to gain some understanding of your thoughts and actions.

These interviews are audio recorded and then transcribed; you can then review the transcript to make sure it is an accurate reflection of the interview and to change or add to what you have said.

Not taking part

Involvement with the project is entirely voluntary, so if you do not want to take part then there is absolutely no compulsion to do so.

Similarly, if you change your mind after an interview or focus group and want to withdraw from the project you are free to do so. You can do this by contacting me (details below) and any data you have in the project, for example an interview transcript, can be removed. For this reason you should keep a copy of the participant number you receive in order to withdraw the correct data!

Any transcripts will be sent back to you as part of the normal course of the project so you can verify that it is accurate and remove any aspects you feel shouldn't be part of the data.

Data

Interviews and the focus groups will be (audio) recorded and transcribed to create a persistent copy; this is the data I will use to inform my PhD work. This information is personal to the participant and will not be passed on to third parties, your tutors, other researchers etc. It is confidential data which will be stored securely either in password protected computer files or a locked cabinet; only the project team will have access to the anonymised 'raw' transcripts. All procedures during the research will follow the Data Protection Act (1998).

In signing this consent form (and taking part in the research) you are allowing me to use this data as part of my PhD studies: to inform my work, as part of conference papers, academic articles or similar outputs. If I wish to use the data for another purpose (for instance as part of another project) I will email you to confirm whether this is acceptable. When participating in this research you will be asked to choose a pseudonym which will be used with your transcripts. Unless you specifically request otherwise, your real name (or other identifying details) will never be associated with any data.

Contact information

Matt Mawer (PhD student)
Learning Innovation ARG
Coventry University, Enterprise centre 2.1
Puma Way, Coventry, CV1 2TT
Email: mawerm@coventry.ac.uk
Phone: 02476 158267

Prof. Maggi Savin-Baden (Director)
Learning Innovation ARG
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Puma way, Coventry, CV1 2TT
Email: m.savinbaden@coventry.ac.uk
Phone: 024 7615 8261

Making a Complaint

If you take part and are unhappy with any aspect of this research then you should contact Matt Mawer and/or Prof. Maggi Savin-Baden in the first instance. If you still have concerns and wish to make a formal complaint about the conduct of the research then you should write to:

Prof Ian M Marshall
Pro-Vice-Chancellor (Research)
Coventry University, Priory Street
Coventry, CV1 5FB

In your letter please provide as much detail about the research as possible, the name of the Researcher and indicate in detail the nature of your complaint.

Interview date: ……

Participant number: ……

Appendix 4: Participant consent form

Many thanks for participating in this research project exploring the perspectives of students on virtual worlds at university. Much of the information about the project can be found on the accompanying information sheet, and before consenting to take part in the study you should read this. By signing below you agree to take part in the research and acknowledge your understanding that:

- Any information provided during the project is confidential, and no identifiable personal data will be published within research reports or publications. Your real name will not be used at any time unless you explicitly request this.
- Data collected through observations, conversations, or interviews will be recorded, transcribed and kept securely. This 'raw' data will be accessible only to the researcher.
- Your participation is entirely voluntary and you may withdraw your participation at any time from this interview without supplying a reason for doing so. The procedure for this is detailed on the attached information sheet.
- You may review any data that you contribute to the project at any time and a copy of your interview transcript will be sent to you as normal procedure.

If you have any queries then please ask me either in person or by email (mawerm@coventry.ac.uk)

Participant number: _____

Please sign below if have read and understand the above and wish to participate in the research project:

Researcher: *Matt Mawer*

Date: _____

Participant (print): _____

Signature: _____

Email: _____

Alternate email _____

Please retain the attached information sheet containing details on how you may manage your participation, including procedures for complaints and withdrawal from the research.

Appendix 5: Initial interview questions (20.02.2010)

--- Project description, consent, questions, recorder (name, age, and site), begin! ---

What did you expect Second Life would be like?

- Why?
- How did the experience compare to your expectations?

Can you describe what you did in the session? Or some specific things you did in the session?

- Why did you do that/how did that come about?

If you had to sum up your experience in a few words, how would you describe it?

- What is it about Second Life that influences you to describe your experience like that?

Did you experience any barriers to participating effectively?

- Did you overcome them? How?
- How do they affect your perception of Second Life (or specific aspects of it)?

How did Second life relate to the subject you're studying?

- Could you access any elements of the subject in new ways? Were they effective?
- Do you see potential for Second Life in your subject?
- How you use Second Life in your subject?

How did you think you would communicate in Second life?

- Did you expect this to be an effective way to express yourself?
- Have your opinions changed after being in-world?

Can you describe any practices you used to communicate in Second Life?

Have you encountered any modes of communication in world that you have not used?

- Why haven't you used them?
- Do you think they are effective ways to communicate?
- What sort of information do you think can be communicated in Second life?

How do your experiences communicating in Second Life compare to other social networking or ICTs you may have used?

- Is Second Life comparable to any other communication technology?

Did the communication strategies needed in Second Life change the ways in which you could collaborate with others in world?

- How so?

--- Anything to add? Any questions? Recorder, procedures to withdraw ---

Appendix 6: Revised interview questions (24.05.2010)

Interview:
Location:
Date/time:
Notes:

--- Project description, Confidentiality, Transcript, Recorder (name, ID, and site) ---

Can you talk me through what you did in the module?

Could you describe what expectations you had of Second Life prior to the start of the module?

Describe your experiences of working in a group in the module

Tell me about how you handled communicating in Second Life

What difficulties, if any, did you experience in your work during the module?

Looking back, what was most influential in shaping your perspectives of the project?

--- Anything to add? Any questions? Recorder, procedures to withdraw ---

Appendix 7: **Geography 1 focus group topics**

***[Geography 1]* focus group – 17:00**

Remember this is supposed to be 45 mins max, plus coffee etc. if people are happy to stay for long enough to get that first. – 4 x 10 mins for questions, as a guide, but format depends on what people want to talk about.

Introduce myself (again)
Consent forms and info sheets
Recording – check recorder is on and in conference mode!

Start

Did you enjoy the workshop?

- Did anything happen during in the workshop that surprised you?
- Did you experience any barriers to participating?

Had anyone used virtual worlds previously?

- Did that affect how you perceived the workshop for visualisation?
- What did you think Second Life was about before you took part in the workshop? Has that perception changed?

Did you think it was a useful environment for visualisation?

- Why?
- Were any of the geographical sites you visited particularly successful or ineffective at portraying that knowledge? Could they be improved?

How did you communicate in the workshop?

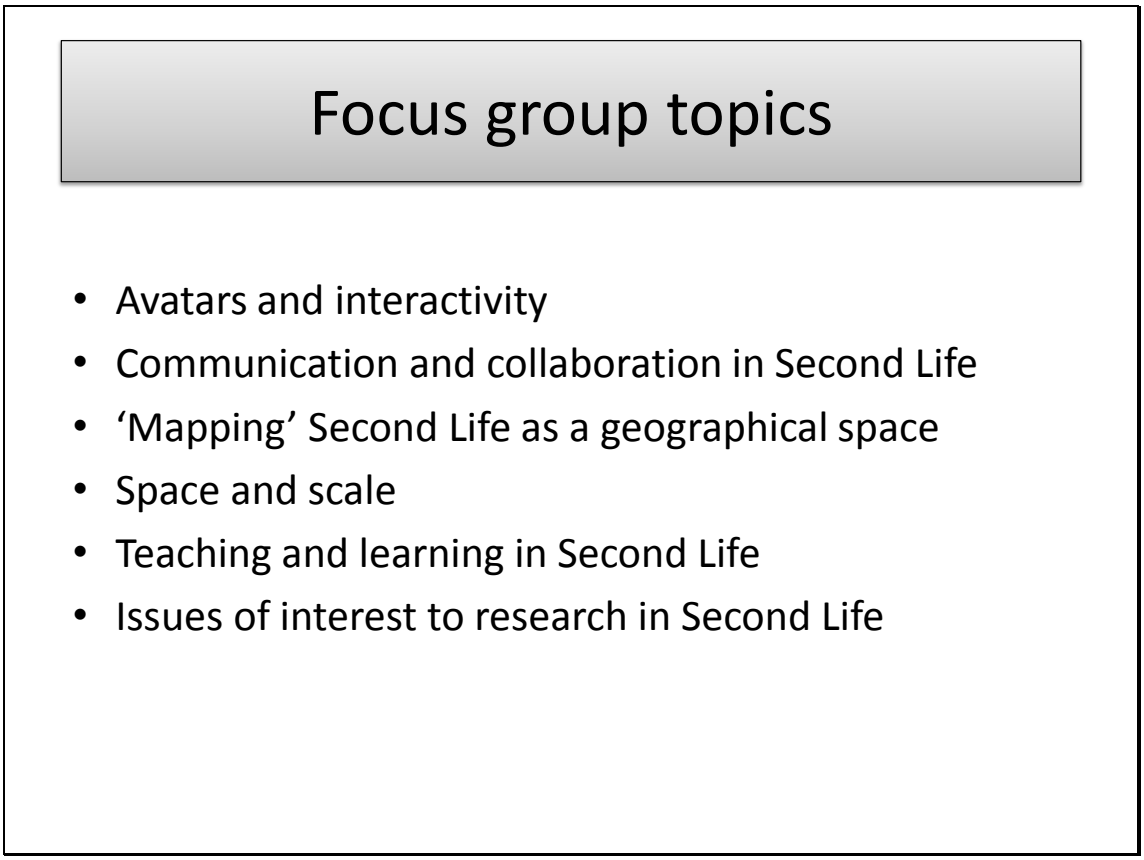
- What mediums did you use? Was it successful?
- Did you experience any barriers to communication?
- What sort of information do you think you can communicate or represent successfully in Second Life?

Any questions
Stop recording
Plan for recording (transcribe and send them a copy – going to be used in thesis etc.)
Group pseudonym – or could just be *[Geography]* students

Finish

Appendix 8: Geography 2 focus group topics

(Topics were presented to the focus group on a Microsoft PowerPoint slide, shown below, so that all members could see the topics: no paper copy of topics was distributed)



Appendix 9: Sample of observation field notes

(Field notes have been anonymised for inclusion in the appendix)

***[Date]* – Chelby, Session 4 for me; week 7 for the course**

The class started late again this week, *[tutor]* informed us he had been at a meeting in London and would be arriving to start the lesson at just after 20:00 again. For the four weeks I have been part of the course we have only started at 18:30 twice. In fact technical problems have delayed us until almost 21:00 for one week. The course seems to be able to absorb these changes (some of them last minute) quite effectively however, probably because there is no need for room bookings or travelling to any specific site. It does raise some interesting questions about the flexibility of the class however and how appropriate this is for formal education; lectures and seminars are usually cancelled or rescheduled if the tutor could only arrive several hours late! There is a similar degree of flexibility afforded to the students also however, *[tutor]* frequently waits for people to catch up or sort out their technology so they can participate fully. It is difficult to say whether this would apply to rescheduling a lesson because they could only arrive very late however, so the module does remain quite tutor-centric in terms of power structure. This applies to most of what we do however. The class time is usually spent listening to *[tutor]* lecture and responding, although there is an interesting incident in the notes below where *[tutor]* exhibits a particular eagerness to open up the floor and break out of this lecture-listen cycle. It would be interesting to explore exactly how different the students perceive the average class on this module to be to a conventional lecture or seminar setting, given the similarity of our activities once we get into the setting. Certainly there are a good deal more kinaesthetic elements than a lecture, though possibly only to the same degree as a practical seminar. In light of that, how do the students perceive the setting; as a lecture, a seminar, a practical, a discussion forum, a social meeting space, or something entirely different?

Homework for this week was to develop our building skills or generally explore Second Life, it didn't really seem like a lot of people had done much toward this end although a few of the buildings had been changed somewhat. *[Student A]* had deleted quite a lot of her high-prim count railings after the prim-count revelations from last week and *[C2]* (who was away for the previous week) had actually started his build. His interpretation of a 'home' was somewhat different to the rest of us, being a giant organ that played the Phantom of the Opera when interacted with and a large funnel-like object textured with a landscape image rotated in many directions. I saved a couple of snapshots of this and we did discuss it a little bit before the lesson, though nobody seemed to explicitly comment on the fact it was not a building like the rest of the 'home' creations. I noticed after the final student build had been done/started that no one had created anything in the air, or particularly physics defying; all the homes could easily have been models of real world buildings somewhere (the exception being *[C2]*'s floating fireplace).

This lesson had a number of administrative aspects to resolve, including registering for the SLOODLE site for our cultural exchange and posting an introduction on the *[Cultural exchange institution]* forums. This raised a serious ethical quandary regarding informed consent; the *[Cultural exchange*

institution] students had not been briefed on the research and thus had not been given chance to give informed consent. Actually attempting to secure informed consent would have likely proved quite disruptive to the lesson plans and could have necessitated going through *[Cultural exchange institution]*'s ethical board which would likely have taken several months. Instead it was decided by myself and *[tutor]* that I should not use the cultural exchange sessions as research sessions and should 'down tools' and just participate as a student for the collaborative weeks with *[Cultural exchange institution]*. A similar problem then arose with next week's lesson; a guest lecture. The visiting lecturer also had not been briefed on the research and thus would need to give consent. This is slightly less onerous the *[Cultural exchange institution]* ethical situation however; I will likely just brief the guest and ask for permission to research at the start of the class. It does also threaten the confidentiality of the research site with another participant who could reveal that I was researching on the course, but I suppose this is no more a threat than the students revealing this.

Present: 8 – *[tutor], [C2], [C1], [Student A], [C5], [Student B], [C7],* Myself
Absent : 1 – *[Student C]*

Time	Events	Reflections	Notes
20:00	• I log on • *[Student A]*, *[C2]* and *[C1]* are already in Second Life • *[C5]* arrives shortly after I do	• Discussing whether *[tutor]* will be here on time and also the virtual exchange with *[Cultural exchange institution]* • All the students are congregated around *[C2]*'s build (which was not present last class); a giant pipe organ and a funnel/wedge with landscape textures	
20:11	• *[tutor]* logs on	• We are discussing *[C2]*'s build at the moment • *[C7]* makes an interesting remark that a floating fireplace is "...okay; because it is a virtual world". We are still building normal, everyday objects like houses however – are there levels of surrealism acceptable to the class?	
20:16	• We have run out of space to meet in the building area according to *[tutor]* – things are a little cluttered stood between all the house projects. *[tutor]* suggests we move to the sandbox	• Still confined to a certain degree by physical space, although we could have just moved upwards into the sky to gain more space. In fact, we don't need to see each other at all to discuss: the spatial properties of the area (beyond distance) don't matter at all in a functional	

		sense. This must be a psychological issue in the virtual world then. • *[Student B]* still has not said anything: he is also stood a little way away from the group • There doesn't appear to be any major technical problems this week: even voice is working – hurrah! • *[C1]* has made his character very small. A few people comment on this in the course of the session. At the very end of the session, *[C1]* decides to edit his appearance to make his character 'normal sized' again.	
20:22	• *[tutor]* rezzed the table and chat-logger to record group conversation. Everyone assumes a sitting position as usual • *[tutor]* asks if people will use voice, commenting that most people in the class seem to prefer to use text	• *[tutor]* moves the logger onto the table from where he rezzed it on the floor. There doesn't really seem to be a need to move the logger, perhaps this is because things customarily go on top of tables in real life? • *[C1]* and *[Student A]* cite reasons why not to (screaming kids and a cold!), the rest of the class do not respond but also do not use voice during the lesson. I wonder why there is a reluctance to use voice chat?	**C**

Appendix 10: Coventry University ethical approval

Matthew Mawer (HES)

CURLIEW project — Ethics clearance medium risk form

For office use only

Initial assessment

Date checklist initially received:	DD/MM/YYYY	
1. Ethical review required	Yes	No
2. CRB check required	Yes	No
Submitted to an external research ethics committee		
3. External research ethics committee (Name)	Yes	No
4. Copy of external ethical clearance received	DD/MM/YYYY	
Ethics Panel Review		
5. Date sent to reviewer 1 (Name)	DD/MM/YYYY	
6. Date sent to reviewer 2 (Name)	DD/MM/YYYY	
Original Decision (Consultation with Chair UARC/Chair RDSC)		
7. Approve	Yes	No
8. Approve with conditions (specify)	Yes	No
9. Resubmission	Yes	No
10. Reject	Yes	No
11. Date of letter to applicant	DD/MM/YYYY	
Resubmission		
12. Date of receipt of resubmission:	DD/MM/YYYY	
13. Date sent to reviewer 1 (Name)	DD/MM/YYYY	
14. Date sent to reviewer 2 (Name)	DD/MM/YYYY	
Final decision recorded (Consultation with Chair UARC/Chair RDSC)		
15. Approve	Yes	No
16. Approve with conditions (specify)	Yes	No
17. Reject	Yes	No
18. Date of letter to applicant	DD/MM/YYYY	

Signature ..... (Chair of UARC/~~Chair RDSC~~)

Date 14/7/09