

**A sociomaterial account of assignment writing in Further
Education classrooms**

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The following is a list of the writer's publications which have drawn from, and been inspired by, this PhD study, and completed whilst research and thesis writing were being undertaken.

Peer reviewed journal publications

* BHATT, I. (2012). *Digital literacy practices and their layered multiplicity*, Educational Media International, 49(4), pp. 289-301, DOI: 10.1080/09523987.2012.74119.

** BHATT, I. and de Roock, R. (2013). *Capturing the Sociomateriality of Digital Literacy Events*, Research in Learning Technology, Special Issue: Scholarship and Literacies in a Digital Age, 21(4) doi:<http://dx.doi.org/10.3402/rlt.v21.21281>

Book chapter

*** de Roock, R, BHATT, I. R. and Adams, J. (2015). *Video analysis in digital literacy studies: exploring innovative methods*, chapter for Snee, H., Hine, C., Morley, Y., Roberts, S. & Watson, H. (eds.) 'Digital Methods for Social Sciences: An Interdisciplinary guide to research innovation', Hampshire: Palgrave MacMillan.

Peer reviewed conference proceedings

* BHATT, I. (2012). *Digital literacy practices and their layered multiplicity: a focus for study*. In: 62nd annual conference of The International Council for Educational Media

(reviewed proceedings). Nicosia (Cyprus), pp. 33-45.

* BHATT, I. (2013). *The sociomaterial workings of a college writing assignment*, The Society for Research into Higher Education (SRHE) Annual Research Conference 2013 (reviewed proceedings), 'Experiencing higher education: Global Trends and Transformations' (Dec, 2013).

Talks and invited seminars

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* These publications relate to elements of preliminary findings of case-study 1 (Sara), presented and discussed here with much more detail and elaboration in Chapter 4.

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“Existence is not an individual affair...individuals emerge through and as part of their entangled intra-relating.”

(Barad, 2007: p. ix)

This PhD thesis tells the story of how class assignments got done: the impasses, breakthroughs, workarounds, and other practices that occurred during their completion. In the same way, in completing this PhD thesis, I too have drawn from a multitude of people, places and things, and engaged in a diversity of practices for its completion. I am therefore grateful to people like my supervisors (Mike and James), examiners (Mary and Simon) whose comments and insights have been helpful and appreciated, my family (Khadija, Maryam, Zaynab, Nazneen, etc.) for bearing with me and my professional and academic commitments, my friends and peer networks (both face-to-face and electronically through Facebook, Twitter, and Google Plus), and my mentors (including Chris and Peter in the early stages). Thank you.

In addition, ostensibly, this is a PhD which I have written; but importantly it, in turn, has *written me*. It has taken me to places, brought me in the company of certain people, and opened up new avenues of life and thought. I should therefore acknowledge this very doctoral experience and the ‘intra-active’ (cf. Barad) process through which my PhD and I have written each other during these last four years.

Abstract

This PhD research explores assignment writing tasks in three separate Further Education classroom contexts. I approach the assignments as practical controversies as learners navigate their way through a course of study. Specifically, I attend to the ecology of digital literacy practices which emerge through the completion of the assignments by problematising the impact of cyberspace on classroom activities, as the learners undertake their work assisted by whatever digital media are to hand. I argue that connectivity of the Internet and deployment of digital media in classrooms contribute to emergent sociomaterial assemblages, or ‘actor-networks’, exploration and elucidation of which are key to understanding the literacy practices which instantiate them. This research addresses what these new sociomaterial assemblages look like, and the types of digital literacy practices arising from them.

Drawing on recent work in Literacy Studies and actor-network theory, I uncover the complex and close relationship between the personal/informal literacy practices of learners and the digital demands imposed by normative classroom culture and policies. More broadly, I show that an assignment is an ‘assemblage’ which is tied together by political and managerial decisions, economic imperatives, teachers’ aims and practices, learner habits of use, material artefacts and their properties, etc. All of these agencies shape a certain choreography of digital literacy practices arising during classroom tasks; practices which can instantiate a tension between a normative classroom dramaturgy and a more anarchic learner bricolage.

Findings of this research will inform policies on digital learning and benefit educational practice through in depth accounts of the digital habits and practices of learners’ life worlds, and how they align with classroom assignment tasks. By understanding learner practices it is possible to better understand digital innovations in education, the extent to which learners embrace or avoid imposed technologies, and how such practices re-shape assignments as evolving pedagogic forms.

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Part I

Chapter 1: Introduction

In appearance, it is merely the solution of a technical problem; but, through it, a whole type of society emerges.

(Foucault, 1995: p. 216)

1.1 Background and context

Over the last two decades, successive UK governments have viewed information and communication technologies (ICTs) as crucial components of various drives to improve educational standards in the Further Education (FE) sector (DfEE, 1997; DfES, 2003b; FELTAG, 2013). During this period, extensive investments of ICT infrastructure, alongside research and development activities, have been central to strategies designed to foster a culture which ‘embeds’ digital media into learning and teaching. This agenda has resulted in a rapid pace of change in the FE sector, including massive effects on learning environments and professional practices, with both FE lecturers and learners continually having to adapt to ICT initiatives, policy implementations, and a forever morphing culture of ‘e-learning’ adoption. These changes are usually lead by managerial efficiency, alongside concomitant notions of improved educational attainment. ICT adoption, and how it is pedagogically embedded, are then usually rationalised and promoted along similar grounds. Subsequent investments in educational infrastructure are seen as a critical aspect of ensuring that the sector is capable of responding to the rapid changes it faces (FELTAG, 2013).

Developments within the sector caused by these continual changes, subsequent investments, and recent demographic changes in the UK population, have led to a wider range of learning and teaching modes in the FE sector, with colleges providing education and training to 14-19 aged cohorts (Pring, 2009) and learners pursuing more degree level programmes than the FE sector has previously catered for (Vasagar, 2012). These challenges to the sector have been addressed through such measures as a wider range of teaching modes, including full-time,

part-time, block release, short-term and intensive programmes, and technology-supported distance programmes.

A defining characteristic of the FE sector, therefore, is its incredibly diverse student population. FE learners do not fit any specific profile, with FE colleges now offering a wide spectrum of provision from basic-skills, vocational training, to University level education. FE students can therefore:

- undertake learning in a wide range of locations, including classrooms, workplaces, and private training providers
- come from disadvantaged and under-represented backgrounds, as well as challenging socioeconomic circumstances
- be undertaking second-chance school education
- have English as a second, or additional language
- be aged between 14 and 65 (and potentially over)
- be enrolled on courses ranging from entry level and NVQ level 5, which can be vocational or specialised in a particular area (such as gardening) or general (like GCSEs), or traditional academic (degree, masters, etc.)

The term 'FE' therefore designates any form of post-compulsory education that consists of elements of both what was offered traditionally via a 'technical college' and a more powerful Higher Education (HE) sector, but with a distinctly separate history and identity to Universities which offer solely the latter.

Yet beneath the enthusiasm, investment, and political support for ICT implementation in FE contexts, the impact of its use and the variety of different forms of access to cyberspace in

classrooms – and across campuses – remains largely unexamined and unproblematised from a *literacies* perspective. After having invested so much into new digital media and infrastructure it becomes important to ask: what effects are they having on classroom literacy activities? How do these effects relate to wider studies of technology-enhanced educational practice? Later in this section, and also further within this thesis, I discuss the importance of examining this topic through a literacies framing and how this study adds value to research already carried out in this area. Through this doctoral study, therefore, and with a view to informing policy and practice, I intend to explore how classroom-based literacy activities have been influenced and radically re-shaped by the connectivity of the Internet in a FE context.

1.2 Educational technologies in FE

Over the past twenty years, a plethora of technology-related policy drivers and research agendas have impacted ICT funding priorities in the FE sector (Wilson, 2001). Among the first of these were the highly influential Higginson report (1996) and the Dearing report (1997) which set visions for how the sector could adopt ICTs to improve the management and delivery of learning and teaching. These early policy initiatives were technology-focused rather than centred around the broader practices of students. Reflecting on the impact these fundamental policy suggestions of the 1990s had on later debates on ICTs in FE, Wilson (writing in 2001) comments that:

Much of the current debate at national and institutional levels are around common themes: the mechanisms for sharing or reusing learning objects, the improved management of the learning process (really the administrative process) that can be gained through the development of a managed learning environment and the problems in getting staff to upgrade their skills to cope with all of this technology. But the debates and initiatives still echo the Higginson Report while technology and many learners have moved on.

(Wilson, 2001: p. 73)

The accelerated change brought about profound cultural impacts such as the creation of ‘ICT suites’ in FE colleges, national standards (FENTO, 2002) for ILT (Information and Learning Technology) to be applied alongside quality inspection frameworks, and a call for research and investment into ICT adoption in the FE sector. FE colleges subsequently began to look like very different places compared to how they used to be.

The Higginson Report further identified the need for independent centres of support, research, and guidance to carry out some of these new activities. This subsequently led to the creation of Regional Support Centres (RSCs) under the aegis of the Joint Information Systems Committee (JISC) and the British Educational Communications and Technology Agency (BECTA). These very influential agencies were allocated large amounts of funds to provide this residual support to all educational sectors.

Following the drive towards ICT in colleges, a series of surveys of its implementation and use in FE were carried out by the BECTA between 2003-2011 (e.g. BECTA, 2009; LSN, 2008; Sero, 2009). These surveys used mostly online questionnaires and other remote electronic methods, and found that most colleges have a robust ICT infrastructure with a relatively high level of technological maturity, investment, and integration into teaching and learning activities. BECTA was a government agency funded by the *Department for Children, Schools and Families* and was the key agency for research and consultancy in the development and use of ICT in education in the UK, until its disbandment in April 2011 following a spending review. Notably, BECTA’s £80 million budget (Lepkowska, 2010) also consisted of a FE focus as part of its work. According to its 2006 survey, levels of investment into ICT equipment were stated to be such that many FE colleges’ whole computer stocks could be replaced every five years (BECTA, 2006). Additionally, the pressure of offering a quality learning experience despite a reduced budget and support prompted FE colleges to

consider how digital technologies could help them achieve more with less. To this end, between 2003 and 2011 the Joint Information Systems Committee (JISC) funded over a hundred projects that involved technology-enhanced learning solutions in FE colleges (JISC, 2011).

One of BECTA's final reports before its disbandment in April 2011, suggested that over 65% of FE colleges were not sufficiently equipped to "make the most effective use of technology for teaching and learning" (Harrison, 2012). Following the demise of BECTA, concerns about what seemed like an unpromising return on the investments, and a subsequent lull in government involvement in directly promoting ICTs in FE, emerged a project known as the Further Education Learning Technology Action Group (FELTAG) in January 2013. At the time of its launch a related and cross-departmental initiative was also set up to explore educational technologies across all the sectors of the education system. This was called the Education Technology Action Group, or, 'ETAG'.

At the time of writing this thesis, FELTAG published a report (FELTAG, 2013) which sets out strong recommendations for the digital future of FE provisions, and spells out challenges faced by the sector in implementing educationally fruitful digital initiatives. The report recommends that "learners must be empowered to fully exploit their own understanding of, and familiarity with digital technology for their own learning" (p. 5). The report's research and recommendations consistently refer to the "under-exploitation of learners' skills, devices and technical knowledge" in their own learning practices, and that "[m]ore effort needs to be made to engage and empower learners' use of digital technology – and the use of their own devices – in the learning process" (FELTAG, 2013: p. 5).

Notably, the impact of the FELTAG ‘conversation’ is what led to the formation of the later ETAG initiative, which ended up having more of a cross-disciplinary remit for learning technology implementation. Taking the work of the FELTAG report further, ETAG (which consists of academics and technology industry leaders) aims to identify obstacles to the effective use of technology for learning, to ‘horizon scan’ for ICT developments of educational interest, and to provide pointers to government and policy makers.

But the BECTA surveys, JISC projects, FELTAG conversations, and other related research inquiries do not either attempt, or go far enough, to theorise the nature of the impacts of cyberspace on literacy activities, and what these impacts mean for educational practice and the resultant dynamic and distributed nature of learning more generally. Moreover, how learners are able to – as the FELTAG report suggests – exploit their current knowledge base of Internet activity, digital media use, and practices of digital literacy and then *mobilise* these into some sort of effective pedagogic use, is an area also under-addressed. How learners embrace or avoid imposed technologies, and an exploration of their practices with digital literacy, are key to understanding and informing an institutional digital learning strategy. These concerns form the bases of this PhD research. In doing this I use an assignment writing scenario as a characteristic and empirical basis in which to explore these kinds of practices and potential instances of mobilisation.

Drawing on the conceptual framework of ‘literacy events’ and ‘literacy practices’ (discussed in detail in Chapter 2), this research examines the nature of the particular digital literacy practices arising when FE learners complete writing assignments for a course. Using a case-study strategy, I investigate if their use of digital tools in their personal and professional lives transforms their classroom practice, through a study of the characteristics of their digital literacy practices as unfolding in the writing of their course assignments. This would include

questioning the relationship between, and placement of, practices of digital literacy deemed as belonging to the sphere of the 'everyday' (Ivanič et al., 2009) and how these interact with those practices which are more acceptable in the classroom. In this respect I explore discrepancies between the way students carry out work and the requirements and expectations of the course and, more broadly, the college.

This research is therefore supportive of wider debates on how formal/informal spaces are conceptualised in social theories (Latour, 2005; Tuomi-Gröhn and Engeström, 2003) and subsequently in literacy research (Edwards and Fowler, 2007), and in the enactment of people's digital practices across online-offline spaces (Leander et al., 2010). Later in this thesis, I propose that such practices across home and school domains are a multilayered and 'messy' reality, and therefore well captured through the type of methodology that I propose in this study. Drawing upon reflections upon these methods and advancements in digital technologies for data collection, I propose more advanced methods to take this kind of research further (Chapter 7 Section 7.5; Chapter 8 Section 8.4.2).

In addition, the new digital materials, I argue, contribute to new social and material ('sociomaterial') arrangements (Johri, 2011; Orlikowski, 2010; Sørensen, 2010) in classrooms; a new ensemble of artefacts and social practices, the exploration and elucidation of which is a key tenet of this research and is outlined in a later section of the thesis (see Chapter 2 Section 2.5). This research therefore asks: What are these new sociomaterial arrangements? What types of literacy events arise from them? And how do these influence and subsequently improve educational, social, and professional practice? These concerns form the basis of the specific research questions outlined in Section 2.9.

1.3 Situating the research and research motivations

Whilst there exists some research in Higher Education (HE) which explores intersections of learners' digital literacy practices against the digital demands of programmes of study (e.g. Jones and Lea, 2008) and in school contexts (e.g. Bulfin and Koutsogiannis, 2012; Bulfin and North, 2007), the sector of FE is the most appropriate arena in which to carry out this particular research. This is primarily due to the unique nature, diversity, and intersectionality of FE provisions and learners. FE courses consist of young people undergoing second-chance school courses, those attending HE programmes, and a plethora of vocational courses. Consequently, a learner in an FE college can be on a programme of study anywhere from pre-entry level up to University degree or even Master's level.

According to Ivanič et al. (2009: p. 17), young people tend to go to college for a variety of reasons, including: a freer college environment over that of schools, the need to re-take school examinations, the need to augment existing qualifications for access to HE or work, and the desire to undertake vocational programmes. FE colleges are, consequently, diverse and contested arenas of literacy practices, yet remain, according to Ivanič et al. (2009: p. 16), "the poor relation" in terms of literacy research activity. Addressing this under-representation, Ecclesfield (2013) calls for efforts to promote more practitioner-research activities in FE, particularly research efforts which focus on technological innovation. Doing so, he argues can help support FE based professionals to become more reflexive in exploring their own contexts and the impact of the sector's activities, especially in relation to digital innovations.

In this vein, Edwards and Smith (2005) alert us to the fact that FE learners engage in a wide variety of sophisticated and complex literacy practices outside of college which are not usually considered nor valued in college-related activities. Edwards and Smith's was an early publication in the project of Ivanič et al. (2009), which sought to uncover these rather

discounted, vernacular, and under-represented literacy practices, and how they can – and should – be a resource in classroom learning and assessment for the attainment of qualifications. A more extensive account of Ivanič et al.’s research is outlined in Section 1.4 (in this chapter) and Chapter 2 Section 2.2 wherein I discuss its role as one of a number of foundations upon which this PhD study builds.

Additionally, today’s FE learners come to their institutions with diverse prior experience with digital technologies, and differing expectations and assumptions about where, when, and how digital tools may be used within their courses of study (JISC, 2009b). According to the Joint Information Systems Committee (JISC, 2009a, 2011) some of main transformations brought about by the investment of digital tools into classrooms include: new types of relationships between learners and their teachers through greater connectivity, 24/7 access to resources, more freedom to choose mode of study (part-time, distance-based, etc.), and more opportunity for learner autonomy.

More broadly, colleges and schools have a long history of teaching and learning practices and procedures which form part of what the sociologist and actor-network theorist John Law refers to as ‘hinterlands’:

The hinterland produces specific and more or less routinised realities and statements about those realities... The hinterland also defines an overall geography—a topography of reality-possibilities. Some classes of possibilities are made thinkable and real. Some are made less thinkable and less real. And yet others are rendered completely unthinkable and completely unreal.

(Law, 2004: pp. 33-34)

Some of the ‘thinkables’ and ‘unthinkables’ related to classroom literacy have their origins in a particular and normative conception of it. This conception is perpetuated by the quotidian practices of a typical college regime which can consist of things such as quality assurance inspections, timetables, lesson plans, assessment procedures, ICT policies and good practice guides, and specific kinds of literacy practices bound up with these agencies. Hamilton (2001) in her paper on the theoretical utility of actor-network theory (ANT) in literacy research also argues that such agencies engender “certain kinds of knowing” (p. 178) which require examination. These aspects are explored in more detail later in this thesis, as I connect them to practices with digital media and their “disruptive” affordances (Hedberg, 2011) when deployed in conventional classrooms, and how they alter the pace and pattern of interaction, organisation, and spatial dynamics of knowledge creation (Sutherland and Robertson, 2009).

As digital environments are invoked in classroom literacy events, something very interesting occurs: subsequent digital practices are not bounded by the apparent haven of the classroom. Jewitt (2008), for example, explores a similar phenomenon in her image of the “porous classroom” with reference to multimodality in schools, and how a classroom curriculum is permeable to the ‘outside world’. Such are the kinds of phenomena that this research seeks to investigate, and how they are instantiated by digital literacy practices in assignment writing scenarios in classrooms. This study is therefore aligned with those of current critiques and trends in the Literacy Studies paradigm (see Chapter 2 Sections 2-3), technology-enhanced learning, and multimodality as heuristic methodology.

1.4 Assignments as controversies

The porousness of the modern classroom creates a confluence of interests which converge in the FE sector and affect all aspects of its teaching and learning provisions. Assignment tasks as part of assessment processes, and the practices through which they are characterised and

accomplished, become key moments not just in the lives of learners as they navigate their way through a course, but also for teachers and managers who also have a stake in their successful completion. In this respect, assignment practices are bound up in different texts and a multitude of discourses, such as economic imperatives, managerial efficiency, and quality assurance procedures (Tummons, 2010). These agencies give rise to a particular dominant conception of what an assignment task *is* and how it *should* be completed; that is, through the valourised schooled literacies (see Section 2.1) that it is designed to assess. The role of an assignment writing task, as a research focus, is therefore one of a practical controversy which requires a deep exploration of its constituent practices which then give an assignment its character and enable its successful achievement for student, teacher, line manager, head of department, parents, and all those either directly or indirectly involved in the ‘assemblage’ (see Section 2.5).

This particular focus of research inquiry becomes even more fascinating, controversial and textually rich as more complex actors become involved in the practices of assignment design, completion, and assessment. This is because academic content is but one aspect of assignment completion; their situational practices are shaped by wider enterprises and actors such as policy goals which shape a certain social order in the day-to-day life of the FE classroom (Hamilton, 2009). It is within this framing that a focus on assignment writing within the learning process, and its role within the regulatory frameworks of assessment and quality in FE, is a fruitful basis of inquiry for this study. One of the primary reasons for this is that among the complex actors at play during assignment writing are those which emerge through the ‘literacies’ of learners’ many life worlds and the role that these practices play in the completion of academic tasks (see Section 2.1). These aspects form a key part of this study’s rationale and its contributions.

1.5 Rationale and contribution

Literacy—how it is construed, assessed, and taught—is at the heart of many cross-curricula policy issues in FE such as learner retention, achievement, and progression (DfES, 2003a; Moser, 1999). It has been singled out through the various ‘basic’, ‘functional’, ‘core’ and ‘key’ skills agendas over the years, which have arisen from a policy discourse which construes literacy as something which can be taught, measured, and assessed. With this view, ‘literacy’ is used in the singular and refers to a decontextualised and disembodied set of skills which are taught by prescription, considered as measurable, and as ‘transferable’ unproblematically from one domain to another (Hannon, 2000). My research begins with a critique of this policy discourse which has often resulted in teachers having to cast aside their learners’ *vernacular* literacies of home, community and work as potential resources, and give prominence to curricular literacy practices in the daily workings of a classroom (Smith, 2005). Regarding this disjuncture, Street (1997: p. 48) claims that “[i]f literacy is seen as simply a universal technical skill, the same everywhere, then the particular form being taught in school [and by extension college] gets to be treated as the only kind”.

Street (1984) further conceptualises this traditional type of literacy as an ‘autonomous model’ of literacy. Briefly put, the autonomous model holds that literacy is a technical skill, autonomous from the social acts in which it occurs, neutral in that it has no relation to the power struggles of its contexts, and characteristic of the psychology of the individual reader/writer. He juxtaposes this with his ‘ideological model’ of literacy in which literacy is “always embedded in socially constructed epistemological principles” (Street, 2009: p. 29). Hence, to engage with literacy becomes a form of social inquiry as it is shaped by the multitude of communicative contexts in which it occurs. The wider ‘ideological model’ sees literacy as shaped by a socio-cultural environment and tied directly to a social order. It is by no means a neutral activity, as those who are in socio-political control determine who has access to certain literacies through educational and policy decisions. This forms the basis of

the ‘social practice’ approach to literacy, which heavily critiqued but also complemented earlier views of literacy that focus on more individualistic-cognitive or psychological approaches to language, and fail to take into account social phenomena and what is beyond the classroom. This study draws from this ‘social practice’ view of literacy, in line with Street’s contentions outlined above, in the study of classroom *digital* literacy events, germane to which is a focus on what people actually do with digital texts, how they are used to get things done, and invites careful and ethnographic attention to social acts of meaning ascribed to them (Barton, 2007; Baynham, 1995).

What counts as literacy in a ‘social practice’ perspective, therefore, depends on the social institutions in which it is embedded, the processes through which it is acquired, and the practices through which it is enacted. It is, therefore, a matter of *literacies* rather than a singularly conceived literacy. This forms the basis of the ‘social practice’ approach to literacy and is further elaborated in Chapter 2 of this thesis, as part of a literature review.

Addressing these *other* literacies, research recently carried out in the UK FE sector by Ivanič et al. (2009), as part of the Teaching and Learning Research Programme (TLRP) (Nash et al., 2008), investigated the literacy practices of learners across social-college contexts. The *Literacies for Learning in Further Education* project (LlLFE, see Chapter 2 Section 2 for a more detailed discussion) explored the disjuncture between the literacy demands of FE college courses and students’ preferences in outside-college contexts. Ivanič et al. (2009) contend that taking account of learners’ vernacular literacy practices in improving college learning remains something yet to be acknowledged in FE contexts and that we would do well to recognise and acknowledge learners’ social literacy practices in order to improve educational success. In outside of classroom environments learners utilise an abundance of “unmapped literacies” that have the potential to be “brought into play for their life in the

classroom” (Nash et al., 2008: p. 6). As participation in FE has widened, so has the student body diversified, and the disconnect between personal and curricular literacies is one of key importance in literacy studies. This disconnect can be more of a problem for learners in vocational courses over academic ones. Childcare students, for example, need to address a wide variety of audiences through their textual products: in college lessons, assessments, logbooks for colleagues and parents in the workplace, and children (Smith et al., 2008).

The LfLFE research explored such FE learners’ ‘everyday’ literacies and how these might be tapped in to, harnessed, and adapted to help students with their learning and success at college. The final phase of this research project involved tutors altering the practice of the classroom to align more with the literacy practices (or particular aspects thereof, e.g. their collaborative nature) of learners’ homes and work. The insights and findings gained from this project are directly relevant to the type of educational practice I am investigating in this thesis; it is a characteristic example of the kinds of research which uses a literacy studies framing and also have demonstrable pedagogic implications. The project, extensively elaborated on by Ivanič et al. (2009), challenges the widespread assumption that a simple ‘lack’ of literacy holds learners back, and that the richness and complexity of their everyday literacy practices can—and should—be a source of effective teaching and learning.

My research builds on the premise of the LfLFE project by examining how learners tap in to and mobilise these personal literacy practices *themselves*, making their own unsolicited alterations of classroom literacy events through, among other things but most notably, practices through the connectivity of cyberspace. My research contributes to these lines of research first by showing empirically the diversity and richness of learners’ personal digital literacy practices, and how these are brought into play to support learning in classroom digital literacy events (namely in the writing of assignments). It follows, then, that my research is

valuable to educators and practitioners who are interested in how best to utilise digital tools and the ‘funds of knowledge’ (González et al., 2004) that learners bring to classrooms, in order to fulfil their curricular goals.

The aims of this research are also consistent with the argument put forward by the FELTAG report which states the need for learners to be “empowered to fully exploit their own understanding of, and familiarity with digital technology for their own learning” (p. 5). In addition to offering a complementary perspective to Ivanič et al.’s (2009) study, which was a wholesale exploration of FE learners’ literacy practices, this thesis also aligns with studies which have taken concrete situational encounters (e.g. the ‘literacy event’), as the unit of analysis. As Prinsloo and Baynham (2008: pp. 3-4) make clear:

Typically researchers have observed or recorded particular literacy events at their site of research and then tried to understand the wider discursive framings and social practices that cause such events to take their particular form and shape. “Literacy events” have thus provided the empirical units of analysis in the study of literacy, whereas “literacy practices” have provided an analytical frame that includes both activities and conceptualisations of reading and writing.

A more detailed discussion of ‘literacy events’ and ‘literacy practices’ in this thesis is found in Chapter 2 Section 2.1.5. My focus on a *particular* digital literacy event, and the saturation of digital literacy practices through it, is an important point of departure from similar recent research in literacy studies. Employment of the terms ‘digital literacy event’ and ‘digital literacy practice’ in this thesis are also consistent with the terms ‘literacy event’ and ‘literacy practice’, but reflect the focus of the research on digital environments in which the phenomena of interest occur (Chapter 2 Section 2.4.2 for a more detailed discussion).

1.6 Potential implications of the study

This PhD study contributes to the current body of knowledge in demonstrating how and why learners' skills, past trajectories, future aspirations, and attitudes associated with digital literacies do (or do not) transfer effectively into classroom digital literacy events. For practitioners seeking to develop pedagogies that capitalise on the affordances of new technologies, this research will support a greater consideration towards how learners experience digital literacy practices across different domains of their lives. Allowing learners' personal digital literacy practices to be mobilised as resources (either explicitly by them or encouraged and guided by pedagogical approaches) can, the findings of Ivanič et al. suggest, be supportive to learning. And failure to do so can, as Knobel and Lankshear (2004) warn, widen the gulf between curricular and personal digital practices, and their respective cultures of use. The importance of learners' existing funds of knowledge, and how to successfully exploit them for learning, is a recent theme consistent across literacy research (e.g. Ivanič et al.'s) and research in FE innovation (e.g. FELTAG's).

This doctoral study therefore speaks to debates about digital literacy practices and their contested and controversial place in curricula and personal lives. It provides a complementary perspective to other research in e-learning (Conole et al., 2006; JISC, 2009a, 2009b) and disruptive pedagogies (Hedberg, 2011; Mitra, 2003), which often foreground digital technologies and a descriptive account of their affordances, rather than examining the wider sociomaterial mediation which gives them meaning. This research also complements studies on the effects of multimodality in classrooms (e.g. Jewitt, 2008), ethnographic accounts of how learners negotiate online and offline spaces in their lives (e.g. Leander et al., 2010), and how these digital practices can – and currently are – re-shaping traditional assignments as didactic tools for instruction and assessment. This study also presents a methodological contribution which draws from current trends in video analysis (e.g. Heath et al., 2010) and digital methods in the social sciences more generally (e.g. Snee et al., forthcoming).

As digital ubiquity alters the nature of literacy as well as educational practice, then explanations of how learners' personal digital literacy practices transfer effectively to classrooms address, according to Warschauer (2009), one of the "shortcomings of digital literacies research" (p. 134): that it is caught in its context of situation and whilst it may often critique established pedagogies, relatively little of it actually takes place in institutional settings. This attempt to distance literacy studies from any attempt to measure the outcomes of literacy instruction is somewhat understandable according to Warschauer (2009):

[G]iven the emphasis of our field on literacy as a social process that is understood through its texts and practices rather than as a unitary skill measurable by examination

(Warschauer, 2009: p. 135)

The aims of my own research are consistent with Warschauer's contentions, his description of this research paradigm, and where he feels it should head in the future. The idea that technologies, through their investment and instalment, are a panacea to educational problems is analogous to the idea that literacy—itsself a technology—does the same. This is the genesis of an autonomous model of literacy (see Chapter 2 Section 2.1).

In these introductory sections I have briefly outlined what is meant by a social practice view of literacy. In the following sections I further elaborate and develop this conceptual framing to take account of the analysis of literacy events in digital environments (or *digital literacy events*). I also visit the notion of *sociomateriality* as an ontology, and how I see it playing a crucial role in how digital literacies could be envisaged. These concerns are then crystallised into research questions in Chapter 2 Section 2.9.

This research, therefore, will have implications for researchers in that it complements a cross-disciplinary evaluation of current practices in digitally inspired pedagogies and research-led evidence for creative shifts in the education sector (Gee, 2010). Contrasting digital literacies as social—and materially shaped—practices across domains is a useful starting point for doing this. I therefore hope that this thesis will be a significant, timely contribution to the field.

1.7 Thesis outline

The thesis is structured in three parts. Part I, which includes this introduction (Chapter 1), surveys the context for digital innovation in FE followed by a review of the relevant literatures, its theoretical foundations and bases, and a discussion of important concepts pertinent to this PhD study (Chapter 2). Following this synthesis of the various literatures and traditions that will be drawn upon, this chapter of the thesis ends with a rationale for the PhD study, the research questions, and the approach adopted.

Chapter 3 develops the analytical resources used to conceptualise the study and brings them to bear on the specific methodology employed in the study. The methodology used is therefore discussed in light of the theoretical resources outlined in the previous chapter, with a review of other studies that have employed similar methods. This is alongside a discussion of the appropriateness of the case-study research design and strategy employed.

Part II presents and examines the cases investigated in this PhD research, and the findings of the study. These consist of case-study 1 (Chapter 4), case-study 2 (Chapter 5), and case-study 3 (Chapter 6). The findings of each case-study are presented and examined individually as a unique and separate account, followed by an overview discussion and broader analysis in the next part of the thesis.

In Part III I further explore and problematise findings across all three case-studies and highlight themes which deserve a broader discussion as well as explore future areas for investigation. In Chapter 7 I present a detailed account of these themes and discuss the contributions of this PhD study. The final chapter (Chapter 8) concludes the analysis and the aims of the overall thesis, and makes recommendations for future research.

Chapter 2: Literature Review

Theory thus become instruments, not answers to enigmas, in which we can rest. We don't lie back upon them, we move forward, and, on occasion, make nature over again by their aid.

(James, 1907: p. 46)

The first sub-section of this chapter discusses the perspectives of the so-called 'literacy hypothesis', which charted a particular course in how literacy is thought about, and the social and cognitive effects of its acquisition. The origins of this hypothesis can be traced to the works of Russian psychologists Luria and Vygotsky whose mediational framework and empirical studies on the effects of literacy acquisition came under later critique. This is followed by a discussion of the counter hypothesis of Scribner and Cole, and later the more anthropologically inspired approaches to literacy research and the New Literacy Studies (NLS), which form the basis of this PhD study.

Drawing on recent advancements in NLS approaches and the scholarly conversation surrounding *digital literacy*, I then propose the notion of a *digital literacy event* to explore the assignment writing scenarios for this PhD study. Following this, I extend the discussion of digital literacies with a section on computers in classrooms and digital curation. This is alongside a review of *sociomateriality* as an ontology and *actor-network theory* (ANT) as theoretical resources which can be used to explore and better understand the unique character of digital literacies, and how assignment writing is carried out.

2.1 Perspectives on ‘Literacy’

2.1.1 Cognitive consequences

What does it mean to be literate? If to answer this question the criteria are simply the abilities to read and write, or in a psycholinguistic sense, to ‘decode’ and ‘encode’, then this assumes three things: 1) That literacy is a matter of ability, or cognitive skills; 2) That these skills are to be applied the same anywhere reading and writing is required; and 3) That such abilities will likely be attained through an instructional environment. Such a view is what McKay (1996: p. 423) describes as an “isolated individual skill” perspective, and essentially draws from the idea that literacy, as a set of skills to be acquired, brings about specific cognitive changes. This view, elaborated upon below, has a strong historical backstory and its predominant assumption is that there is a direct and consequential link between cognitive processes and abilities, social enhancement, and the acquisition of literacy skills. From this skills perspective, lower levels of literacy are a necessary antecedent to less developed cognitive skills and ultimately resulting in a lower level of societal, democratic, and economic participation. This is the genesis of the notion of ‘functional literacy’ which, as Holme (2004) points out, focuses on the “*basic skills* that the individual needs to fulfil their economic and social potential” (Holme, 2004: p. 12 emphasis added). A functional literacy perspective also entails recognising that “people will master the skills of literacy to different degrees” (ibid: p. 17). Critiques of this position therefore begin by problematising the notion of literacy as a set of *skills* to be acquired.

The word ‘skill’ originates from an Old Norse word which means ‘to separate’. In educational practices skills can be hierarchically represented as discrete and ordered components, or ‘sub-skills’, and ‘accessed’ through training and such activities (see Curzon, 2004: pp. 291-305). The notion of literacy as a set of skills in this way still holds a great deal of influence in educational practice and has been reinvigorated in the UK’s FE sector through the adult literacy policy, which formed the policy context to the ‘Skills for Life’ (Department for

Education and Skills, 2001) agenda of the New Labour Government.

According to Barton (2007) in this approach:

Literacy is seen as a psychological variable which can be measured and assessed. Skills are treated as things which people own or possess; some are *transferable skills*, some are not. Learning to read becomes a technical problem and the successful reader is a *skilled* reader. As a school-based definition of literacy, this view is very powerful, and it is one which spills over into the rest of society.

(Barton, 2007: p. 11)

Barton further argues that a literacy as ‘skills’ approach suggests that individually possessed “neutral techniques” can be “located somewhere inside the person ... are the same across all situations, and ... can be added to piecemeal” (ibid: p. 163). This view of literacy is presented by Barton as somewhat reductionist yet widespread across society, shaping media narratives around literacy, everyday perceptions about what it means to be ‘literate’, and politicians’ policy formulations regarding what to do about a ‘lack’ of literacy. Later in this review I will visit this powerful narrative in more detail, drawing upon the work of Brian Street and others who argue that this perspective to literacy does not take into account social contexts and wider historical factors; it is, therefore, ‘autonomous’ and assumes that societies which have engaged in formal schooling of their populations through long-established and developed writing systems have produced people with superior cognitive development. This is otherwise known as a ‘great-divide’ between societies with exclusively oral traditions and those with literate traditions (Goody and Watt, 1968).

Debates examining the development of literacy and its social and cognitive effects are by no

means new: this issue has been debated for centuries, with early Egyptian documents stating that literacy (or, rather, the technology of ‘writing’) is a route to intellectual power and heightened cognitive functions, and Socrates arguing the contrary view in Plato’s Phaedrus (Jowett, 2008). In the case of the latter, Socrates and Plato were mainly concerned with what they thought as the deleterious effects of writing on memory.

A more contemporary example of this ancient debate, of the alleged link between literacy and cognitive abilities, emerged through the empirical investigations of A. R. Luria (Luria, 1976) at the behest of Lev Vygotsky in the early 1930s. Luria’s investigations were among peasant communities in Uzbekistan and rooted in experimental psychology. They confirmed that the material conditions of culture, and the way that social groups live out their realities, ultimately shapes cognitive structures. Luria and Vygotsky (who himself did not attend the expedition to Uzbekistan) set out to test their ideas of the ‘historical nature’ of psychological processes by conducting a series of tests on two groups of peasants: the first of which had never been to school and had only experienced the agrarian lifestyle of the region, and the second being an ‘educated’ group who had undergone a basic literacy education. His questioning was along these lines (Luria, 1976: p. 111):

Q: In the Far North, where there is snow, all bears are white. Novaya Zemlya is in the Far North and there is always snow there. What color are the bears there?

A: I don’t know what color the bears there are, I never saw them.

Q: But what do you think?

A: Once I saw a bear in a museum, but that’s all.

And another example (Luria, 1976: p. 109):

A: We always speak of what we see; we don’t talk about what we haven’t seen...

Based on how the research subjects informed interpreting the syllogisms, Luria’s results

revealed that schooled peasants were able to engage in reasoning and conclusions beyond first-hand experience. The unschooled peasants however, as shown in the indicative responses above, were unwilling to infer novel conclusions based on propositions about which they lacked personal experience, thereby not engaging with the logic of the syllogism.

Luria's research apparently points to a mechanistic relationship between literacy and cognitive development and became the frame for subsequent thinking and research on the consequences of literacy. This view apparently converged with a school of thought which held that literacy acquisition brings with it certain 'cognitive consequences' (Goody, 1977; Goody and Watt, 1968; Havelock, 1982; Olson, 1977; Ong, 1982), a school of thought which came to be known as the *literacy hypothesis*, and developed through the work of the *Toronto School of Communication*. Proponents of this range of perspectives differ slightly in their conception; some hold that literacy, and its acquisition process, is an engine of radical cognitive change regardless of its content or context. Less radically, Ong (1982) argues that "all conceptual thinking is to a degree abstract" (p. 48), including the more situational nature of oral consciousness, as seen in Luria's responses above.

Furthermore, the development and diffusion of literacy causes a restructuring of psychological life and an enhanced ability to think critically, in more abstract terms, and detached from a person's situational life world – the very limitations to limit a non-literate's conceptualisations. Harold Innis (1951), one of the founders and proponents of this perspective investigated the medium-specific cognitive and social effects of communicative tools, and how major shifts in history correspond with – and are actually attributable to – changes in the media and technologies of literacy and communication. Literacy remained a very popular field of study during the 1950s and in the ensuing decades, especially in terms of the perceived consequences (such as greater awareness of language and the ability to

logicise outside of one's context) that come with the introduction of literacy into the life of a person or community.

Following Innis's work in the 1950s, and inspired by the Toronto School, other medium-related researchers and theorists (e.g. Goody and Watt, 1968; Havelock, 1963) postulated that Western civilisation was born as a result of the introduction of the phonetic writing system in Ancient Greece. According to these theorists, Western civilization (its literate societies, democracies, technical and scientific advancements, etc.) were directly attributable to the Greeks adopting a phonetic writing system and literate culture. These literacy theorists argued that the very acquisition of textual literacy skills is therefore responsible for the development of profound cultural and psychological consequences (e.g. abstract thought and syllogistic reasoning). This resonated with the mediational framework of Vygotsky and Luria despite their work being unavailable in the West until the 1970, largely due to its politically controversial nature and Russian isolationism at the time.

A criticism, however, of Luria's conclusions (and, by extension, the literacy hypothesis view) was that it left open the question of whether or not it was literacy *per se* or education (that is, formal schooling) that influenced performance among the 'literate' and 'semi-literate'. Furthermore, Barton (2007) argues that other cultures, such as that of Korea, attained high levels of abstraction with a writing system that is not alphabetic (Barton, 2007: p. 120). This, and similar arguments, form the basis of a line of research enquiries which sought to take account of these wider social factors, in better understanding how literacy is understood and practiced by people in day-to-day situations.

2.1.2 Scribner and Cole's counter-thesis

Amongst the critiques of this thesis to literacy was the one advanced by Sylvia Scribner (a developmental psychologist) and Michael Cole (a cultural psychologist) in their landmark book 'The Psychology of Literacy'. Their research (Scribner and Cole, 1981) set out to discover whether it is literacy or formal schooling that affects mental functioning, and if it is possible to distinguish between the effects of forms of literacy used for different functions in the life of an individual or a community. They used the Vai-speaking community in Liberia as the base for this investigation; a society where literacy was not *necessarily* associated with formal schooling. For the Vai, English is used and written in school, whereas outside school the Vai use their indigenous language which is written using a non-Roman script. It is largely used for day-to-day and interpersonal matters such as letter writing. This is not a schooled literacy and is sometimes learnt in adulthood. It is a Muslim society so the Koran is visibly and audibly part of everyday life, with many of the Vai able to recite in Arabic, with much of this knowledge gained by memorisation. The Vai therefore have one, two, and in some cases all three of these forms of literacy. Scribner and Cole state their approach to their research, and their emphasis on 'practice' (a notion explored further in Section 1.1.4), as follows:

The notion of *practice* guides the way we seek to understand literacy. Instead of focusing exclusively on the technology of a writing system and its reputed consequences ("alphabet literacy fosters abstraction" for example) we approach literacy as a set of socially organized practices which make use of a symbol system and a technology for producing and disseminating it. Literacy is not simply knowing how to read and write a particular script but applying this knowledge for specific purposes in specific contexts of use.

(Scribner and Cole, 1981: p. 236)

In psychological tests literates formally schooled in English performed better than other groups. Scribner and Cole (1981) thereby concluded that literacy, independent of formal schooling, does not result in the generalised cognitive effects assumed by Luria and theorists

of the literacy hypothesis. However, even among the schooled literates those who had been out of school for a longer period were noticeably weaker on the tests than those who had more recently left school. The counter-thesis proposed by Scribner and Cole indicates that the educational process of *schooling* is what leads to the cognitive effects already discussed, and not learning to read and write *per se* (although these effects deteriorate if not used after school), as Havelock, Goody, Watt and others had claimed. Subjects with no formal schooling continuously made errors on the syllogistic reasoning tasks, and relied on empirical observations in order to reach conclusions. The counter-thesis is one primarily of *causality*; that literacy (*sensu* the skills of reading and writing) is a sufficient cause of particular cognitive effects (higher order reason, etc.). Notably, Goody (1968) himself acknowledged the weakness of the 'causation' argument in the introduction of his book, and precursor to his chapter 'The Consequences of Literacy': "In the study of behavior there are few, if any, 'sufficient causes'; we are interested in the potentialities of literate communication" (Goody, 1968: p. 4).

There were also other findings in Scribner and Cole's research. The literates, both formally schooled and otherwise, were better than non-literates meta-linguistically; that is, they were better at understanding and explaining the formal features of written and spoken language. This was the case even if they ended up performing equal to the non-literates in other of the psychological tests. Whilst apparently this shows us that formally schooled literates are better able to use and describe language in certain ways, subjects who were literate in Vai only (and not formally schooled) showed similar abilities when talking about correct language in letter writing in Vai. This work was, therefore, seminal as it shows us that literacy is associated with, and realised through, 'social practices' rather than a formally schooled understanding of correct language.

This implies that formal schooling leads to rather specific abilities that are valued and rewarded in institutional contexts but which in fact constitute only one form of literacy among other possible ‘literacies’ that people in a given society may be socialised into. Scribner and Cole (1981) concluded that:

Literacy is not simply knowing how to read and write a particular script, but applying this knowledge for specific purposes in specific contexts of use. The nature of these practices, including of course their technological aspects, will determine the kind of skills (‘consequences’) associated with literacy.

(Scribner and Cole, 1981: p. 236)

Researchers have since moved away from the view that literacy has direct “consequences”, in terms of superior cognitive skills, to a view which recognises that there are different purposes and ways in which literacy is used. Gee (2008) comments as follows:

The Scribner and Cole research clearly indicates that what matters is not ‘literacy’ as some decontextualised ‘ability’ to write or read, but the social practices into which people are apprenticed as part of a social group.

(Gee, 2008: p. 80)

Furthermore, Gee (ibid: p.50) brings this as evidence to confirm Graff’s notion of that “literacy myth” (Graff, 1979, 1987) and warns against replacing it with a “schools myth”: a myth that widespread schooling necessarily leads to the good effects associated with literacy, such as a ‘civilised’ and democratic society. Graff’s work, echoing Scribner and Cole’s, shows that literacy learning is not enough to lead to the types of profound transformations that the literacy hypothesis theorists claimed, and that institutional, political, and economic factors play as much a part:

What is needed is a broader view of reading and writing that integrates and emphasizes the many human abilities in a context of a changing world that requires their development and use. Paths to learning individual literacy by the young must be made less rigid; more attention must be paid to different sequences and structures of learning; and more sensitivity must be shown toward cultural and class influences. New, empirical, and conceptual understandings of literacy must be gained, beyond the context of persisting inequalities and the dominance of the 'literacy myth'.

(Graff, 1987: p. 397)

Brian Street further critiqued the literacy hypothesis of Goody, Ong, Havelock, etc. Although they are not entirely united in their views (see Section 2.1.1 for discussion of this range of perspectives), he achieves this critique by characterising its conception as an 'autonomous' model of literacy, one which sees literacy as an autonomous engine of social and cultural change. He argued that literacy hypothesis theorists failed to theorise the conceptual bases for understanding and meaning-making in the societies which lacked written literacy culture (Street, 1984), thereby discrediting their generalisations especially in relation to making cross-cultural comparisons. In making this critique, he contrasts the 'autonomous' model of literacy with an 'ideological' model, outlined in more depth in the next section. Through this framing, Street (1984, 1995) illustrates, building on the work of Scribner, Cole, Graff and others, that literacy is historically and culturally situated and attached to the values, practices and politics of particular communities. Literacy, therefore, is defined, and upheld by specific communities (or sectors of communities) who may have a stake in maintaining a particular notion of 'literacy' and a particular set of values, practices and politics commensurate with that notion: one which legitimises a certain distribution of power, resources and socioeconomic structures.

As this review of the literature progresses, I draw upon bodies of work exploring literacy in

digital environments, and notions of ‘digital literacy’ which echo the skills-based approach discussed above. As students work on their assignments in classrooms they are subject to many forces shaping the literacies which emerge including institutional and organisational imperatives. I therefore draw upon a theory of literacy which stimulates me to the socially embedded ‘doing’ and ‘being’ involved in digitally mediated literacy. These ideas are further elaborated below.

2.1.3 Acknowledgement of the social

These arguments brought researchers to an acknowledgement of the social, and how experimental approaches which assume literacy to be quantified, measured, and assessed independently of context are quite simply not enough to understand language phenomena, and literacy in particular. In the wake of Scribner and Cole’s (1981) seminal study are a host of ethnographic studies which sought to explore the real life embeddedness of reading and writing in people’s lives. Two notable early studies worth mentioning are that of Scollon and Scollon (1981), and Heath (1983).

The Scollons studied the discourse practices of the Athabaskan community in Alaska on the premise that the acquisition of a new literacy and the consequent changes in an individual’s discourse patterns may involve a change of identity. To describe literacy in mainstream European-based education and, in this case Anglo-Canadian and American mainstream culture they use the term “essay-text literacy” as it is based on the essayist prose writing style highly valued in Western literate cultures. Gee (2008) thus explains:

In essayist prose, the important relationships to be signaled are those between sentence and sentence, not those between speakers, nor those between sentence and speaker. For a reader, this requires a constant monitoring of grammatical and lexical information. With the heightened emphasis on truth

value rather than social or rhetorical conditions, comes the necessity to be explicit about logical implications.

A further significant aspect of essayist prose style is the fictionalisation of both the audience and the author. The 'reader' of an essayist text is not an ordinary human being, but an idealization, a rational mind formed by the rational body of knowledge of which the essay is part. By the same token, the author is a fiction, since the process of writing and editing essayist texts leads to the effacement of the individual and idiosyncratic identity.

(Gee, 2008: p. 79)

According to the Scollons, in Athabaskan culture the above presents a number of problems. Namely, in order to engage in the displays of knowledge required in essayist prose, Athabaskans would need to know the audience and be in a position of dominance; yet, this relationship is obscured as both author and reader are fictionalised and the text decontextualised. Athabaskans prefer to refrain from communication under these conditions because cultural values and patterns of discourse are mutually exclusive. Essay-text literacy represents a challenge to cultural and ethnic identity. As Gee (ibid: p.78) puts it:

[T]he acquisition of this sort of literacy [essayist prose] is not simply a matter of learning a new technology: it involves complicity with values, social practices and ways of knowing that conflict.

(Gee, 2008: p. 78)

Heath's (1983) focus was on the way children in poor, black and white working-class communities in the US acquire language and literacy in the process of becoming socialised into the norms and values of their communities. There were two concerns: the implications of this for the acquisition of other literacies; how literacy is nurtured in pre-school years and how this reflects the social practices associated with literacy and ways of knowing in the

family and community.

The working-class white community studied by Heath was fundamentalist in religious orientation, and instruction centred on reading and memorisation, with very little oral interaction/dialogue around the texts that the children read. Children had, as a consequence, difficulty in decontextualising and fictionalising in school because little value was placed on these in the home literacy context. In the working-class black community, parents did not tutor children or read to them; instead, children learned and acquired language by watching, doing and participating in literacy practices with adults. Reading was not an individual act but done in groups and meanings interpreted socially with negotiation among those involved. There is plenty of imaginative talk but it is heavily contextualised. Children were socialised into approaches to literacy and the use of texts in different ways as a result of the *social practices* they were exposed to. Heath's work has been extremely influential for literacy researchers and educators by focusing on the socio-cultural factors which shape language practices and formal educational attainment.

Notably, children from both communities were unsuccessful in elementary school because neither of the socialisation experiences within their communities prepared them for the norms and practices of mainstream educational (including essayist prose) literacy. Both working-class communities value an experiential, orally mediated, empirically founded, and non-analytical view of learning not central to school-based practices. These children lacked the foundational components of a particular type of literacy which would likely get them far in academic contexts. Farr (1993) sums up the implications of essayist literacy for formal education as follows:

Those students who are relative 'newcomers' to the academic community and its discourse do not arrive as 'blank slates': They bring with them

knowledge from the sociolinguistic repertoires of their home communities. Those not from middle-class, mainstream communities bring knowledge of discourse conventions that differ from those expected in school, especially those expected in written texts. The consequences of this asymmetrical situation for those whose discourse is ‘different’ can include (a) negative evaluation of language use, including both written and oral performances (e.g. essays, research papers, reading aloud, oral discussions and presentations); and (b) assignment to lower ability groups and classes, and thus exclusion from more advanced instruction and learning, often throughout the entire school experience.

(Farr, 1993: p. 6)

2.1.4 The New Literacy Studies

This brings us to the notion that literacy is always associated with some sort of social activities; they are socially situated, and practised within various communicative networks. This social stance on literacy studies has theoretical foundations in several disciplines including anthropology and – later on – in the Bakhtinian notion of language as dialogic, socially constructed, and thereby subject to contextual forces (Bakhtin, 1986). Volosinov (1986) argues that “signs [e.g. words] emerge...only in the process of interaction between one individual consciousness and another” (Voloshinov, 1986: p. 11); they are, as such, “inter-individual” (Bakhtin, 1986: p. 121). As a result of this theoretical view of language as primarily social, social perspectives on literacy practices take context as their starting point, and indeed, main focus of enquiry.

Baynham and Prinsloo (2009) in their introduction to ‘The Future of Literacy Studies’ outline this approach to literacy studies, sometimes referred to as the ‘New Literacy Studies’ (NLS, although no longer ‘new’). This approach, according to them, draws upon two previous ‘generations’ of works in the area over the last twenty years. Among them are the works of Heath (1983), discussed earlier in Section 2.1.3, and Street (1984), which shifted the focus of literacy research wider, and into society. In her volume ‘Ways with Words’ Heath (1983)

contends that children's language acquisition is "dependent on the ways in which each community structured their families, defined the roles [of community members], and played out concepts that guided child socialization" (Heath, 1983: p. 11). NLS drew inspiration from a range of 'social turn' movements of the latter half of the twentieth century (Gee, 2000), and is based on the view that literacy practices only make sense when they studied through a sociocultural lens.

Anthropologist Brian Street's research in Iranian villages also demonstrated the "multiple literacies" (Street, 1984) evident in the different contexts and domains of his study. The varying forms literacy can take, depending on different contexts and purposes, is a key notion in a 'social practice' perspective on literacy. Street's ethnographic research was conducted in the 1970s in North East Iranian villages on the border with Afghanistan. He discovered various literacy activities undertaken on a daily basis by people who were described as 'illiterate' by literacy campaigners in the region at the time. These literacies, however, were not the ones taught and valorised in educational settings, they remained marginalised to the everyday social and informal realms of society. Additionally, there was literacy practiced in Koranic schools in the region, which also contained a certain amount of complexity and sophistication in how it was performed, handled, and passed on. Again, this literacy was not deemed as 'proper' literacy from a dominant and normative perspective. This led Street to reflect that "[i]f these complex variations in literacy which were happening in one small locale were characterised by outside agencies - State education, UNESCO, literacy campaigns - as 'illiterate', might this also be the case in other situations too?" (Street, 2001: p. 6). Street's subsequent proposed new understanding stimulates literacy researchers to be sensitive to the richness, variety, and complexity of everyday literacy, especially amongst those people conventionally classified as 'illiterate'. Such classifications are based on a version of literacy, they are 'ideological', and should be contested due to the plurality of literacies in everyday societal practices.

Given this multiplicity, Street works from the “ideological model of literacy” (Street, 1984). According to this model, he sees literacy as a ‘social practice’; not a purely technical or cognitive skill, which is characteristic of the psychology of the individual reader/writer, but one which is “always embedded in socially constructed epistemological principles” (Street, 2009: p. 29). Hence, to engage with literacy is in itself a “social act” (Ibid), and is shaped by the multitude of communicative contexts we find ourselves in. This is contrasted with his notion of the more traditional “autonomous” model, which views literacy as a discrete set of skills that can be taught in isolation regardless of context. It is germane to the notion of ‘functional literacy’ and the cognitive consequences conception of literacy outlined earlier. For Street, to be labelled as ‘literate’ or ‘illiterate’ is an ideological criterion, an asocial binary, which upholds the ‘great-divide’ perspective.

The wider ideological model sees literacy as shaped by a socio-cultural environment and tied directly to a social order. It is by no means a neutral activity, as those who are in socio-political control determine who has access to certain literacies through educational and policy decisions. For if literacy practices are so ideologically charged, then any claims for ‘consequences’ of literacy, according to Street, “will not so easily be disguised as universal truths” (Street, 1984: p. 29).

This forms the basis of the critique of earlier views of literacy which assumed more cognitive or psychological approaches to language, failing to take into account social phenomena and what is beyond the literacy classroom. In this way, the ideological model of literacy *subsumes* the autonomous model, in the way that Street has conceptualised them. What counts as literacy, therefore, depends on the social institutions in which it is embedded, the processes through which it is acquired, and the practices through which it is enacted. This is in contrast

to literacy being understood solely as an autonomous technology that everyone has the same chance of attaining or acquiring. Furthermore, he asserts that even the autonomous model (of Goody, Havelock, Watts, etc.) is actually ideological at its core in that it “disguises the cultural and ideological assumptions that underpin it and that can then be presented as though they are neutral and universal” (Street and Leftsein, 2007: p. 41).

In order to explore some of these ‘cultural and ideological assumptions’ Baynham (1995) provides a useful set of questions: *Why does this exist/happen? What is its purpose? Whose interests does it serve? Whose interests does it frustrate? How does it operate? Need it operate like this or could it be done differently?* (ibid: p. 2). Identifying literacy as *social practice* must therefore entail seeing it through a critical lens, drawing from a combination of cross-disciplinary areas such as linguistics, anthropology, educational and social theory.

For Baynham, therefore, like other NLS scholars, literacy is primarily a socio-political and educational construct rather than a purely linguistic one. In this vein, the following definitions also conceptualise literacy in terms of its social reality:

- Literacy is “a set of social practices associated with particular symbol systems and their related technologies” (Barton, 2007: p. 32).
- Literacy is “an ideological practice, implicated in power relations and embedded in specific cultural meaning and practices” (Street, 1995: p. 2).
- Literacy is about “being able to participate effectively in social processes by working with written language” (Halliday, 1996: p. 367).
- Literacy is “not a technology made up of a set of transferable cognitive skills, but a constellation of practices which differ from one social setting to another” (Ivanič, 1998: p. 65).

Barton and Hamilton (2000) posit six tenets which outline the nature of literacy, as a starting point for understanding literacy as a social practice; those being that:

- Literacy is best understood as a set of social practices; these can be inferred from events which are mediated by written texts.
- There are different literacies associated with different domains of life.
- Literacy practices are patterned by social institutions and power relationships, and some literacies are more dominant visible and influential than others.
- Literacy practices are purposeful and embedded in broader social goals and cultural practices.
- Literacy is historically situated.
- Literacy practices change and new ones are frequently acquired through processes of informal learning and sense making (Barton and Hamilton, 2000: p. 8).

More recently, Hamilton and Hillier (2006) further advise literacy researchers to direct their attention away from a deficit view in which people lack literacy, towards the uses, meanings and values of reading and writing in everyday activities, and the multitude of ways through which people engage with literacy.

2.1.5 Literacy events and practices

To describe and investigate the literacies of particular contexts, NLS researchers employ a construct known as 'literacy practices', evidence of which can be derived from Heath's (1983) notion of a 'literacy event' and subsequently developed in a number of studies (Heath, 1983; Scribner and Cole, 1981; Street, 1984, 1993, 2009). This study is underpinned by the conceptualisation of the 'literacy event' and the ensuing 'literacy practices' in a way which complements and subsumes traditional 'skills set' notions of literacy, outlined in previous sections.

In analysis researchers begin with a literacy event as an empirical occasion involving interaction around a written text, from which they then infer the sometimes more abstract literacy practices which are often attained through other sources in addition to recording and documentation of literacy events, such as participant interviews. Notably, a key and empirical definition of ‘practice’ is that of Scribner and Cole’s (1981: p.236) who defined it as “a recurrent, goal-directed sequence of activities using a particular technology and particular systems of knowledge”. Thus quite action oriented. But another related but more abstract construct of ‘practice’ as “a combination of action and reflection” (Baynham and Prinsloo, 2009: p. 5) owes its origins, via the work of Bourdieu, to Karl Marx’s theses on Feuerbach:

The principal defect of all materialism up to now — including that of Feuerbach — is that the external object, reality, the sensible world is grasped only in the form of an object or an intuition; but not as concrete human activity, as practice, in a subjective way.

(Marx’s Theses on Feuerbach, in epigraph to Bourdieu’s Outline of a Theory of Practice (1977: p. vi))

Literacy practices, then, involve the literacy activity, its texts, the ideologies and patterns of behaviour surrounding it, attitudes and values that inform it, and ultimately its broader ethnographic detail (Tusting et al., 2000: p. 213). In their exploration there necessitates the need to ask *who* is doing *what*, *to whom*, *why*, *for whom*, *where*, *when*, and moreover, *who benefits?* Drawing from the field of sociolinguistics, and using aspects of the toolkit of *linguistic ethnography*, what is central in the capture and analysis of literacy events therefore is the “configuration of action, talk and text” (Prinsloo and Baynham, 2008: p. 4). Schieffelin and Gilmore (1986) justify this ethnographic approach to the study of literacy as follows:

Literacy, viewed as a cultural phenomenon that interacts with certain social process, is best studied by adopting an ethnographic perspective. By

ethnographic we mean descriptions that take into account the perspectives of members of a social group, including the beliefs and values that underlie and organize the activities and utterances. An ethnographic perspective allows the researcher to find out meaning of events for those who are involved in them. This entails investigating the contexts of the uses of literacy, the meanings of literacy, and the forms of literate communication as it is organized and plays a role in organizing particular social interactions in them.

(Schieffelin and Gilmore, 1986: p. viii).

Later in this chapter (Section 1.4) I will outline a notion of practice to complement and extend the one above; one which draws from the sociology of ‘actor-network theory’, also known as ‘material-semiotics’.

2.2 The Literacies for Learning in Further Education (LlLFE) project

The insights and findings gained from the LlLFE project (mentioned in earlier in Chapter 1) are directly relevant to the type of educational practice I am investigating in this thesis, and are an example of the kinds of research which uses a NLS framing and also have demonstrable pedagogic implications. The project ran from 2004 to 2007 and explored the disconnects between the literacy practices of students’ everyday lives and the literacy demands of their courses of study. Using four FE colleges (two in England and two in Scotland) as sites for the research and one hundred students (across sixteen modules of a wide variety of course subjects), Ivanič et al. (2009) showed that their participants engaged in an abundance of complex and sophisticated literacy practices outside of their formal spheres of learning; yet, these very students were deemed – by the college – as having ‘problems’ with literacy. The purpose of the project, therefore, was to locate, recognise, and better understand these *other* literacies and then work with teachers to develop pedagogic approaches which harness them as resources in curricular work.

Importantly, many of the student participants were undertaking vocational courses and also had part-time jobs. This meant that the added dimension of ‘work-based’ literacy practices was relevant in uncovering and exploring the many discounted types of engagement with texts the students practiced, alongside the ‘home-based’ and ‘college-based’ literacies. In this vein, Satchwell et al. (2013) write:

One of the most obvious differences that emerged from our data was the prevalence of *digital* literacy practices in students’ everyday lives, and the prevalence of *paper-based* practices on their courses. However, this was not the only difference, and we came to realize that we needed to analyse the whole range of aspects of any literacy practice in order to identify particular elements that could travel across boundaries.

(Satchwell et al., 2013: pp. 45-46, emphasis in original)

This research showed that students can be effective communicators and sophisticated users of (often digital) texts outside of college contexts, whether at home or at work; therefore challenging the assumption that a simple ‘lack’ of literacy holds learners back. The researchers of this project therefore argue that the richness and complexity of the FE students’ everyday literacy practices can—and should—be a source (and a resource) for effective teaching and learning.

This PhD study builds on research such as that of the LfLFE project by further examining the mobilisation and harnessing of discounted and under-valued *personal* literacy practices, many of which are digital in nature (c.f. Satchwell et al., 2013); practices which otherwise may not have a place in traditional curricular activities or formal learning environments. Extending the work of Ivanič et al., and others (see next section on ‘digital literacy’), I explore how learners make these mobilisations themselves via the connectivity of cyberspace in an

assignment writing scenario, conceptualised as a ‘literacy event’, rather than a wholesale exploration of literacy practices. Attuning my research to the practical – as well as abstract – actions in key ‘events’ echoes the discourse analysis research of Roberts (2011) which is also events-focussed in that it focusses on job interview recordings, a key point of departure from much work in the NLS (see Section 2.4.2 for more on how eventness is applied in this study). As Prinsloo and Baynham (2008: pp. 3-4) make clear:

Typically researchers have observed or recorded particular literacy events at their site of research and then tried to understand the wider discursive framings and social practices that cause such events to take their particular form and shape. ‘Literacy events’ have thus provided the empirical units of analysis in the study of literacy, whereas ‘literacy practices’ have provided an analytical frame that includes both activities and conceptualisations of reading and writing.

2.3 Further developments in Literacy Studies

Theoretical perspectives towards literacy, especially in the arena of NLS, have diversified and grown since the foundational counter-hypothesis of Scribner and Cole, and the anthropological works of Heath, Street, and Graff. This is acknowledged explicitly by Baynham and Prinsloo (2001) who regard the *social practice* perspective to literacy as a:

network of inter-related theoretical interests, differently emphasised and inflected in the work of different researchers, but nevertheless permitting the continuation of an ongoing theoretical conversation

(Baynham and Prinsloo, 2001: p. 84).

Examples of the kinds of ‘ongoing theoretical conversation’ taking place within the broad remit of NLS include Brandt and Clinton’s (2002) critique of *localism*, Clarke’s (2002) case for actor-network theory (ANT) approaches to literacy, Kell’s (2006) advancing the notion of

transcontextuality, and Gourlay and Oliver's (2013) call for *sociomaterial* perspectives to better understand the "day to day engagements with texts ... in conjunction with digital devices" (Gourlay and Oliver, 2013: p. 81). This PhD thesis contributes to these lines of thought and builds on their endeavours to continue and push forward the NLS tradition as it attempts to apply its ethnographic power and critical lens to the study of literacy in digitally mediated environments and subsequently "generate ever widening conceptions of literacy events and practices" (Clarke, 2008: p. 152). Below I explore these further developments in literacy studies with the notion of *sociomateriality* fully explored in Section 2.5 where I discuss how this construct, as an ontology, can illuminate the 'day to day engagements' with texts and digital media that Gourlay and Oliver instruct literacy researchers to focus on.

In their position paper in the *Journal of Literacy Research*, Brandt and Clinton (2002) argue that the ethnographic *localism* of NLS has failed to take into account wider, or more distant, agencies which impinge on a situational context of interest like a literacy event. Even technologically, local forms of communication are entwined with global networks and systems. It becomes impossible, therefore, to conceptualise and describe literacy without sensitivity to both:

[I]f reading and writing are means by which people reach – and are reached by – other contexts, then more is going on locally than just local practice ... incorporating individual agents and their locales into larger enterprises that play out away from the immediate scene.

(Brandt and Clinton, 2002: p. 338)

An example of the kinds of global agencies at play in local literacy events and practices that Brandt and Clinton alert us to can be found in the work of Martin-Jones (2009). They explored how the bilingual literacy practices of farmers locally situated in North Wales were bound up with global regulations in their industry. As administrative powers were accorded to Brussels via the EU (European Union) the farmers were required to engage in – and be proficient with

– a host of new literacy practices that had now ‘infiltrated’ their local context.

Brandt and Clinton also argue for consideration of the material dimensions to literacy, and how their material agencies are enacted in literacy practices. They argue that the “material forms” of literacies and their “technological apparatus” (Brandt and Clinton, 2002: p. 344) are often ignored by a social practice concept of literacy, and that this theoretical ‘blind spot’ is due in large part to an over-reactive rejection of a deterministic and autonomous view of literacy.

Building on some of the contentions raised by Brandt and Clinton, Clarke (2002, 2008) advances a case for drawing on ANT in her research of government policies and strategies to adult literacy and numeracy. Drawing on Latour, and echoing Brandt and Clinton, she claims that ANT sensibilities stimulate ethnographic researchers to pay closer attention to the “far more disparate and often discordant array of entities than those that have been deployed in the social sciences to both describe and explain phenomena” (Clarke, 2008: p. 157). She outlines how through these theoretical sensibilities, literacy researchers are able to uncover the configuration of actors/actants that stabilise established ways of ‘doing’ literacy under the UK government’s ‘Skills for Life’ policy.

Another, similar, approach was adopted by Hamilton (2001, 2009, 2011) in her analysis of the International Adult Literacy Survey. To Hamilton, through using ANT as a theoretical resource, the material artefacts of documents maintained a certain structuring agency and lead to “certain kinds of knowing” (Hamilton, 2001: p. 178). A certain ‘kind of literacy’ is, therefore, defined and upheld by those who may have a stake in maintaining a particular notion of it and a particular set of values, practices and broader social order commensurate with that notion.

However, in both of these cases the researchers focussed on the generalised structuring agency of policy artefacts and not on how these forces can shape and give rise to certain types of literacy practices in a given scenario such as an assignment (through the lens of a literacy event), as in the focus of this study. In this vein Gourlay and Oliver's (2013) work, by drawing on elements of posthuman theory (cf. Hayles, 1999), takes us closer to the actual 'doing' of day-to-day practices with texts (both print and digital) in a University campus context. Their study explores the situated and emergent nature of students' daily practices with digital media. Through focus groups and multimodal journaling, they found that students' engagement with digital devices occurred across a range of time/space realms and often beyond the archetypal 'University' spaces (lecture rooms, libraries, VLE, etc.). Highlighting areas for the possible improvement of institutional provision, their work also reveals the fascinating "resilience, initiative, and ingenuity with which students work around problems – by enrolling other people, places, and things in their practices" (Gourlay and Oliver, 2013: p. 94). Building on Gourlay and Oliver's theoretical contentions, sociomateriality is a notion central to this study and further discussed in Section 1.4 of this chapter.

Also drawing on Brandt and Clinton, Cathy Kell's (2006, 2009) work in South Africa similarly explores literacy as it is enacted across space and time. Presented as a 'transcontextual' approach, she interrogates the notions of 'locality' and 'localism' in literacy ethnographies, and the limitations of framing ethnographic accounts of literacy practices as bounded within an ostensible site or 'context'. To do so is problematic to Kell (2006), as literacy events spill over across various social spaces and time frames. She (2006) argues that "[m]odes and media of communication carry meanings within the streams and flows that make up the texture of the contemporary world" (p. 147).

In her transcontextual analysis of literacy practices, Kell (2009) adopts a long-term participant observation methodology across multiple sites to model the flows, cross-overs, and text trajectories of literacy activities associated with house building projects in the Khayaletu township of South Africa and in a shanty-town called Masiphumelele (also in South Africa). She found that in both cases literacy activities associated with bureaucratic policies and procedures did not remain consistent in their applications when they shifted from context to context. Literacy practices related to such things as *working through agenda items*, *meetings procedures*, and *ordering building materials* were not always tied to the essentialised notions of literacy events explored by a place-bounded ethnography. Drawing on Latour, Kell argues that literacy practices have a life beyond such notions of an ‘event’ and that researchers ought to move “beyond the single instance” (Kell, 2009: p. 86) to witness their trajectories and to get a fuller picture of the temporal and spatial fluidity of meaning-making. This, she argues, is because “[i]t is in the process of *recontextualization*, of shifting from [one] context to the next, that other entities such as *power* become thrown into relief” (ibid: p. 86)

Recent work in the area of ‘digital literacy’ has attempted to expand NLS inflected ethnographies, in the ways Brandt, Clinton, and Clarke, etc. advise, by drawing on sociomateriality and actor-network theory (cf. Gourlay et al., 2014). This thesis is situated within this emerging theoretical space, as the field of literacy studies attempts to apply its ethnographic power and critical edge to literacy in digital environments and follow Clarke’s injunction to “continue to generate ever widening conceptions of literacy events and practices” (Clarke, 2008: p. 152). In this respect, and going back to the quotation at the start of this chapter, Pragmatist philosopher William James asserts that:

Theory thus become instruments, not answers to enigmas, in which we can rest. We don’t lie back upon them, we move forward, and, on occasion, make nature over again by their aid.

(James, 1907: p. 46)

In order to situate my research, its arguments and findings, I build on and develop the aforementioned critiques. This is made more explicit in the coming sections of this literature review wherein I extend the discussion of ‘literacy/literacies’ into the realm of the ‘digital’ and provide further justification for the conceptualisation of my approach as I seek to problematise the complexity of literacy practices in and around digital environments. In a later section of this chapter, and drawing from recent digital literacy theories, I advance the notion of a ‘digital literacy event’ (Section 1.3.2) and outline how my approach takes into account *sociomateriality* and *actor-network theory* as theoretical grounding for my empirical work (Section 1.4). Through these framings I then conceptualise the ‘event’ and its constituent ‘practices’ in an assignment writing scenario. These theoretical sensibilities, I argue, serve a useful interpretative function and can augment and enhance current ethnographic studies of literacy, particularly in digital environments. Moreover, in the methodology chapter (Chapter 3) I will also outline how sociomaterial theory guides the construction of knowledge through shaping the design of the study and transforming the digital literacy events as I attempt to capture and present them to the readers of the thesis. In this vein, the ‘life’ of the assignments extends into this very thesis, as methodologies are not merely innocent tools of representation.

2.4 Perspectives on ‘digital’ literacy/literacies

In this section I explore some of the recent literature around ‘digital literacy/literacies’ and relate this to the constructs of literacy practices, literacy events and sociomateriality, from which I have further conceptualised and operationalised this study. As has already been discussed in previous sections, the concept of ‘literacy’ is contested, malleable, and entwined with cultural and political discourses. Contributions to the scholarly conversation around digital literacy similarly bring different foci and perspectives to their conceptualisations of literacy in a digital environment. The following sections survey some of these main

contentions in this area which, when considered together, form a grounding to this thesis.

2.4.1 Literacies and the digital

Over the last two decades there has been an escalation of use of the descriptive prefix ‘digital’ in educational research, reflecting the wide ranging impacts digital media utilisation has had across the entire spectrum of institutional activities. These are from the day-to-day practicalities of learning and teaching (e.g. Virtual Learning Environment adoption) to the ICT-intensive administrations and management systems now in place, and the appropriation of digital platforms for professional communities (e.g. twitter and Facebook for networking activities). From this have emerged notions such as ‘the digital University’ (e.g. Goodfellow and Lea, 2013; Hazemi et al., 1998), ‘the digital divide’ (e.g. Norris, 2001), the ‘digital scholar’ (e.g. Weller, 2011) and ‘the digital age’ (e.g. Borgman, 2007; Selwyn, 2011). In each of these fashionable and rhetorical usages of the term ‘digital’ the implied significance has been the discrete importance of new ICTs to whatever issue, context or subject being discussed.

Given its use against the term ‘literacy’ as discussed above, the concept of ‘digital literacy’ becomes even more complex and fascinating, with shifts in definitions and application, encapsulating a range of trans- and inter-disciplinary research agendas (Gee, 2010). This is not least due to an evolution of terminology from an early vision of ‘digital literacy’ (Gilster, 1997), to ‘electronic literacy’ (Warschauer, 1999), to ‘silicon literacy’ (Snyder, 2002), then ‘twenty-first century literacy’ (The New Media Consortium, 2005), and ‘media-literacy’ (Buckingham, 2003). The advent of Web 2.0 technologies, at around the turn of the millennium, brought with it an emergence of scholarly interest in ‘digital literacies’ and permutations of it related to the types of skills-set required to operate and exploit Web 2.0 environments effectively. According to Dudeney et al. (2013), Web 2.0 is “a new generation of web-based tools like blogs, wikis, and social networking sites, which focus on

communication, sharing and collaboration, thus turning ordinary web users from passive consumers of information to active contributors to a shared culture” (Dudeney et al., 2013: p. 3).

This ‘suite’ of digital literacies therefore required in Web 2.0 environments include such things as ‘remix literacy’ (Lessig, 2008), ‘attention literacy’ (Rheingold, 2010), ‘network literacy’ (Pegrum, 2010), ‘mobile literacy’ (Parry, 2011), and ‘Web literacy’ (Belshaw, 2014) etc. Each of the aforementioned notions has set out to problematise, in different but overlapping ways and with different trajectories in the literatures, the multifaceted relationship between literacy and digital media.

Each type of ‘literacy’ above subsequently relates to the suite of skills required to engage with digital technologies effectively. This is in order to, as Dudeney et al. (2013) contend:

effectively locate resources, communicate ideas ... build collaborations across personal, social, economic, political and cultural boundaries ... engage fully in social networks, gain employment in postindustrial economies, and assume roles as global citizens.

(Dudeney et al., 2013: p. 2)

Recent conceptualisations and broad consensual use of the term ‘digital literacy’ (e.g. Bawden, 2008; Chase and Laufenberg, 2011) hearken back to early theoretical formulations of this term (c.f. Gilster, 1997) which focused solely on a person’s skills and competencies related to the requirements of ICT use. A ‘digital literacy’ which relates to a technical and procedural mindset, or palette of cognitive skills, that allows one to solve problems and perform effectively in digital environments (Gilster, 1997; Inoue et al., 1997; Kanter and Kanter, 1992; Oxbrow, 1998). This grew out of an earlier notion of ‘vision literacy’ as vision

competencies, put forward by John Debes in the 1960s (Avgerinou and Ericson, 1997: p.281), which emerged with the advent of computers and television and the salience of texts contained within these media. These metaphorical extensions of literacy depict something as learnable, somehow essential or core, with an organised system of meanings and practices.

Through this framing, digital literacy is often perceived as the requirement – in a digital environment – of being able to function effectively and utilise digital platforms, devices, and communications systems. This perspective is often reflected in policy discourses and its adoption often results in initiatives to ‘upskill’ and ‘train’ staff and students in educational institutions in how to develop more digital literacy (Hargittai, 2005, 2009; Paynton, 2012). It is this juxtaposition of ‘literacy’ as a popular metaphor for ‘competency’ which has endured, the development of which has been placed alongside the ‘3 Rs’ as a basic and ‘functional’ (see Section 2.1.1) skill. It is important to note that this notion of *digital literacy* inevitably carries with it the notion of digital *illiteracy* (Warschauer, 2003), as such notions focus on the “technical stuff” (Wilber, 2010: p. 2) or the affordances of new technology, what they allow us to do, and the ability of humans to exploit that.

These ideas, somewhat technicist and skills oriented, still persist but are now complemented with a number of other overlapping perspectives related to the multimodal aspects of the new forms of reading now encountered in digital environments, one of which is a change in disposition towards an image of writers as “designers” (Kress, 2003), as learners mobilise and utilise the multimodal ensemble at their disposal in the creation of text. A similar notion of ‘reading as design’ is advanced by Goldhaber (1997) who argues that in the new multimodal ‘attention economy’ a writer’s purpose shifts from *telling* to *showing* the reader, who must then select for relevance amidst the multimodal ensemble before them (as cited by Jones, 2013a).

In this vein, the work of the New London Group (1996, 2000), of which Kress was a member, further stresses the different modes of communication in digital environments. From this has emerged a body of work which some have dubbed ‘multiliteracies’ (e.g. Cope and Kalantzis 1999; Gee, Hull and Lankshear 1996) and which has played a key role in further programmatically exploring the diversity of semiotic modes and resources available in digital environments, and identifying and explaining their *grammar* in different interactions. That is, new forms of ‘semiotic work’ in different digital environments call for a new meta-language needed to understand and support critical analyses and the diversity of forms of meaning-making in digital environments.

Following this broadening of the conceptualisation of digital literacy, there has been a wave of studies exploring how people use the connectivity of cyberspace to further their personal, social, and professional goals in Web 2.0 environments. This research has focussed on activities such as gaming (Gee, 2004; Steinkuehler, 2007), online writing communities (e.g. Fanfiction.net) (Black, 2008), and dealing with its participatory culture more generally (Jenkins et al., 2006). This strand of work has tended to focus on school contexts and the plethora of multimodal formats through which texts are created and used.

In the Higher Education (HE) sector, the term *digital literacy* has been used with reference to the day-to-day work with VLEs, assessment, and ICT administration systems (Williams, 2013), an entitlement agenda (Littlejohn et al., 2013), and (for those working within the NLS traditions) evolving academic practices (Lea, 2013). In light of the latter perspectives to digital literacies, Mills (2010) provides a review of NLS inflected studies to digital literacy, and argues that:

[t]he most recent, significant shift in this field has been what could be called the ‘digital turn’—that is, the increased attention to new literacy practices in digital environments across a variety of social contexts, such as workplaces and educational, economic, and recreational sites. The digital turn...in literacy research is a consequence of globalization and the growing range of technologies for communication.

(Mills, 2010: pp. 246-274)

Mills use of the expression ‘digital turn’ is a play on the ‘social turn’ in literacy studies (c.f. Gee, 2000), discussed in a previous part of this chapter. The digital turn in NLS has inspired notable writings and research endeavours to emerge which focus on an expansive notion of the term ‘digital literacies’ (note the plural) (e.g. Bawden, 2008; Gillen and Barton, 2010; Lankshear and Knobel, 2008; Martin and Grudziecki, 2007). These studies have sought to uncover the complex social, cultural, and technical practices emerging through literacy in digital environments. These investigations and critiques take us beyond Gilster’s (1997) early vision of ‘digital literacy’ (note the singular) as simply a set of information management skills and the competencies involved in operating digital media generally. Lankshear and Knobel’s (2008) pluralisation of the term echoes earlier visions of an expanded notion of ‘literacies’ (c.f. Barton and Hamilton, Scribner and Cole, Street, etc.) that goes beyond the competencies of the individual. Their conceptualisation of ‘digital literacies’ therefore encompasses “digital codification” and “enculturations” (Lankshear and Knobel, 2008: pp. 5-7) that relate to the myriad of meaning-making practices evoked across different settings, communities, and identities in digital environments. The convergence of the multiplicity of competencies in being digitally ‘literate’ is reflected in Martin and Gudziecki’s definition of digital literacy as:

the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations.

(Martin and Gudziecki, 2007: p. 255)

The conflation of skills and attributes in this way has paved the way for such things as digital literacy ‘frameworks’ such as the Open University’s (Reedy and Goodfellow, 2012), the ‘Seven Pillars’ model of the Society of College, National and University Libraries (SCONUL, 2011), and Belshaw’s (2012) ‘Essential Elements of Digital Literacy’.

Such generic frameworks and models are based on slightly different conceptualisations and points of focus. For example, Littlejohn et al.’s (2013) understanding of digital literacies reflects an “entitlement agenda” (p. 126) in UK Further and Higher Education. Digital literacies for them relate to foundational capabilities “essential for participation within society” (ibid). The SCONUL model overviews the key considerations and guidance, primarily for librarians and teaching staff, to identify the (re)usage, sharing, and remixing of ‘Open Educational Resources’. Belshaw’s *Essential Elements* refer primarily to eight quintessential and idealised attributes of a user of technologies, reflecting goals to be attained and a discourse akin to that of ‘employability’ echoing more general trends in educational settings (Yorke, 2004); that is the construction of digital literacy as aspired ‘achievement’ and ‘potential’. Such idealised notions however do not take into account practice communities’ differences and the ethnographic rootedness of digital literacies, and therefore once again hark back to the ‘ideological model’ critique of autonomous constructions of literacy.

A slightly more complex and nuanced picture of digitally mediated literacies comes to light through the work of Beetham et al. (2009, 2010) who investigated 44 cases of learning and teaching practice in UK FE colleges and Universities. Their study reveals different conceptualisations of ‘literacy’ across different practice-communities within and across institutions as they develop frameworks to respond to the various digital literacy agendas they

are subjected to. A distinction, therefore, is drawn between ‘academic literacies’, ‘information literacies’ and ‘communication and collaboration skills’ (p. 43) each conceptualised somewhat differently based on the requirements of a practice-community. This is in contrast to Lankshear and Knobel’s all-encompassing term ‘digital literacies’ to describe all such practices which are “mediated by texts that are produced, received, distributed, exchanged, etc., via digital codification” (Lankshear and Knobel 2008: p. 5) and “digital enculturation” (p. 7).

Gillen (2014) further advances a perspective on digital literacies which is founded on the sociocultural and ethnographic commitments of the NLS. Her work primarily draws from a dialogic tradition to language and literacy which has its theoretical foundations in the Bakhtinian notion of language as dialogic, socially constructed, and subject to contextual and ‘inter-individual’ forces (Bakhtin, 1986; Voloshinov, 1986). Drawing from this and the foundational *cultural historical activity theory* (CHAT) of Leontiev (1981), Gillen views digital literacies as existing through dynamic and entwined relationships between their actualisation in practices and their broader mediating contexts, that is, their tools of use, cultural norms, historical patterns of use and understandings, etc. This theoretical perspective, for Gillen, is combined with a commitment to ethnography, consistent with established practices in the NLS tradition, which she then applies to the Shome Park project which explored the complexity and creativity of literacy practices in a three-dimensional virtual world, using a “virtual literacy ethnography” methodology (Gillen, 2009). Data drawn on chat logs, the project wiki and group forum, and show that the young people’s participation in the virtual world is an intensely literate activity, contrary to an overly dichotomised view of ‘new’ literacies and more valorised established ones.

In an earlier work, Gillen and Barton (2010) offer a broad definition of digital literacies: “the

constantly changing practices through which people make traceable meanings using digital technologies” (Gillen and Barton, 2010: p. 9). This definition, they argue, allows the specificities of digital literacy practices to be explored whilst retaining sensitivity and attention to broader social processes, thereby ensuring a continuity to the body of work in the NLS. In this vein, they contend that a “social practice view of digital literacy possesses continuities with a social practice view of literacy in general. This is one which starts from what people do, the meanings they ascribe to their activities and the ways they use reading and writing in their broadest senses to achieve their purposes” (ibid: p. 9).

Also following a broader, more sociocultural focus to digital literacies, a recent ESRC (Economic & Social Research Council) funded project ‘Digital Literacies in Higher Education’ (Lea, 2009; Lea and Goodfellow, 2009) ethnographically explored the digital literacy practices of undergraduate students. Drawing from thirty-four interviews over six months, the project revealed how students creatively employed a range of technologies which were not always institutionally mandated yet remained central to vital processes such as accessing resources and communications. Lea and Goodfellow show that digital media have the potential to disrupt traditional literacy practices in University settings, but that a traditional and authoritarian model of literacy practices still regulates the kinds of written genres involved in assessed student work. This culture of knowledge production in the academy (which draws on academic concepts such as ‘analytical approach’, ‘rationale’, ‘critical evaluation’, etc.) is regulated by such things as assignment cover sheets, learning outcomes, assessment criteria, etc. (Lea and Goodfellow, 2009: p. 2).

The project paid close attention to the social practices around digital media use in academic contexts, and provides a basis for the kinds of research that can critique the validity and applicability of generic and transferable models of digital literacy mentioned earlier. A more

comprehensive account of the actual *doing* of student work in situated contexts, as has been carried out in this PhD study, would extend and complement the insights of Lea and Goodfellow's research.

Further and more recent critiques of digital literacy models and frameworks, emerging from researchers applying the ethnographic framing of NLS to digital environments, include Gourlay et al. (2014). They argue that much recent rhetorical usage of the term digital literacy/literacies promotes competency-based agendas which reflect and promote the interests of institutional and organisational imperatives. They present a framing of the issues around digital literacies to “maintain what we should consider to be an essential research and development focus on the situated, political, day-to-day ‘doing’ and ‘being’ involved in digitally mediated engagement with texts” (Gourlay et al., 2014). And furthermore that “[w]ithout such a framing, the danger is that there will be no challenge to the strongly normative perspective on academic practice which we argue is encapsulated in the present use of ‘digital literacy/ies’ to signal general competency and skill” (ibid). Echoing this position, Gillen (2014) claims that the:

[d]iversity of experience and the consequent inevitability of variation in understandings, values and dispositions are a strong obstacle in the path of those who think it possible to adopt any standardised, stand-alone perspectives on digital literacies and impose them on people with equal effects.

(Gillen, 2014: p. 10)

Such expanding and unresolved definitions and conceptualisations of digital literacy/literacies have led to what Chase and Laufenberg (2011) refer to as its “inherent squishiness” (p. 535), with evolving and emerging technologies to shape both what digital literacies represents *and* how we go about examining them. NLS certainly provides a useful critique frame through its

reconceptualisation of digital literacies from a disembodied skills set to embodied social practice; but in so doing, echoing Brandt and Clinton's warning, it may have de-emphasised the problem of 'context' and its materialities. These aspects are therefore further explored in Section 1.4 of this review chapter, after the notion of *digital literacy event* is presented below.

2.4.2 The digital literacy event

Literacy events, as mentioned previously, are the central empirical occasions where literacy has a role. Far from being isolated instances of reading and/or writing, literacy events form part of highly contextualised encounters, such as religious rituals (Besnier, 1995) and bedtime stories (Heath 1982). As a unit of analysis they yield snapshots of the social and cultural order in which literacy activities are institutionally and organisationally mediated (Prinsloo and Baynham, 2008), yet also remain intimately tied to material culture (Brandt and Clinton, 2002).

In this research I begin with cases of 'digital literacy events', and the empirical activities around the production of assignments. In exploring the wide ranging and protean digital literacy practices which constitute classroom writing, I focus on particular events, classroom assignments, which learners at a FE college must complete as part of their assessed work. Success in programmes of study depends on learners being able to negotiate and manage a variety of digital literacy practices commensurate to the literacy demands of their course and, more broadly, the college. The notion of 'event' as conceptualised by Heath forms a useful heuristic lens from which to explore such assignments tasks.

Drawing from this notion of 'event' and Lankshear and Knobel's (2008) framing above, 'digital literacy events' are observable occasions in which digital text is central and where meanings are "mediated by texts that are produced, received, distributed, exchanged, etc., via

digital codification” (Lankshear and Knobel 2008: p. 5) and “digital enculturation” (p. 7). Examples in today’s digitally-infused classroom spaces include such things as designing and delivering presentations, the writing of assignments, and Web-based research for projects. For researchers, the significance in terms of elucidating *digital literacy practices* arises from the repeated observation of the *digital literacy events*, and the rituals and relationships involved. Doing so can expose things like how institutional inequalities are enacted in situational encounters in particular settings. See Section 2.1.5 for a fuller discussion of literacy events and practices which form the bases of these concepts as I have applied them.

The *literacy event* as a unit of analysis has been somewhat underplayed in much NLS research (Baynham and Prinsloo, 2009) since Heath’s initial conceptualisation which focused empirically on “the occasions in which written language is integral to the nature of participants’ interactions and their interpretive processes and strategies” (Heath, 1982: p. 50). This PhD thesis attempts to redress this imbalance and takes digital literacy events as a main unit of analysis. But in considering the *digital literacy event* as a unit of analysis throws up a possible set of ambiguities. What, for example does a *digital literacy event* look like? How is it captured, in its entirety? In a digitally mediated text saturated world, does it exist in a spatially hermetic here and now? My particular research methods intend to capture elements of these very phenomena, of the temporal and spatial discontinuities of the digital literacy event that I wish to explore. In doing so, making the literacy event a focus of my analysis, is a point of departure from much recent work in NLS which has focused on the literacy practices of people, rather than a literacy event primarily. Furthermore, Warschauer (2009), echoing Blommaert (2007) on ‘scale’, insists on an attention to the widest context of the individual digital literacy event. Warschauer advocates an appreciation of hegemonic structures worldwide, e.g. global capitalism (Warschauer 2009: p. 128). This is further justification for, and helps to sharpen the conceptualisation of, my own approach which sees the literacy event as entangled and assembled with wider contexts.

In this respect, I hold that a single digital literacy event is shaped by outside forces and multiple contexts: the classroom, the everyday, the institutional, and the global. Such contexts, and the individual participants (social and material) involved in the event, must therefore be understood and explored as part of the proposed study. This approach takes the focus of digital literacies research as being *the investigation of the patterned regularly occurring ways of doing things with texts in digital spaces; the habits, values, taken-for-granted knowledge, expectations, and relations of power which are all inscribed in a given digital literacy event*. The analytical approach I wish to adopt allows me to observe digital literacy practices operating at a greater degree of abstraction and contextual richness than would be possible through analysing people's digital literacy as a set of competencies, and a wholesale exploration of practices alone.

In focusing on classroom based digital literacy events, this study is building on a research tradition within the NLS paradigm which initially turned researchers away from the pedagogic domain, as literacy began to be seen as not just confined to the school environment. As such, NLS turned our attention to the vernacular practices of people in their everyday lives in our conceptualisation of 'literacies'. However it is important to remember that the problems experienced in the 'everyday sphere' entail, Ivanič (2009) contends, a need to *return* to the pedagogic sphere in order to complete the process of "fine tuning literacy for learning" (Ivanič, 2009: p. 109). This research attempts to conceptualise the multilayered interface between social life and the classroom with respect to digital literacies. As Ivanič (2009) recommends, echoing Baynham (2004), research should move from the classroom to the everyday in order to move—with great improvements—back to the classroom again, proposing that much can be gained by "bringing the lens of literacy studies [back] to bear on learning and teaching" (Ivanič, 2009: p. 101).

Digital literacy events are of course also *multimodal*. They cannot be thought of as only linguistic, especially as modes of communicating grow and intermix (Jewitt, 2008; Kress, 2003; Lemke, 2002). Multimodality as a synthesising construct allows us to better understand how digital literacy is done with its focus on the inter-dependent layers of communicatory modes. Multimodal interactions, therefore, in as much as they are integral to digital literacy events, necessitate the generation and analysis of data from multiple modes and often requiring a range of analytic tools, including conversation analysis (Deppermann, 2013).

2.5 Materialising digital literacies

Material and semiotic artefacts (computers, compasses, algorithms, number systems, etc.) are both part of our cultural inheritance and mediating factors in our cognition. Our cognition therefore is not simply in our own heads nor is it simply our own. Thinking and cognition are inseparable from the materiality of their milieu (Hutchins, 1995). Therefore, to understand digital literacy practices, the entirety of the interactional context—human and non-human, online and offline—needs to be examined. My research remains sensitive to these sociomaterial assemblages through which digital literacy practices emerge; the materiality of the classroom, the Web, and the technological artefacts of literacy (Brandt and Clinton, 2002; Johri, 2011; Latour, 2005; Orlikowski, 2010). This, therefore, causes me to go beyond the exoticisation of digital media practices and to understand them within their everyday, mundane context.

Upon designing and carrying out the pilot study, and further explorations in the literature, the materiality of classroom and online environments emerged as increasingly salient to me in understanding learning and literacy practices in digital environments in the context of this study. Following Latour (2005), Orlikowski (2010), and Johri (2011), I conceive of digital

literacy practices as taking place within a sociomaterial system, or ‘assemblage’; that is to say, in conceptualising them I encompass *material* as well *social* considerations. This is a key tenet of a set of theoretical sensibilities which have come to be known as actor-network theory (ANT, outlined later in this chapter). I believe that effective evaluation of literacy events in digital environments can be productively grounded in a strong theory which relates the potentials of technologies and artefacts in the practices of literacy and how these are enacted over apparent time/space parameters. ANT furnishes theory of this kind and the following sections outline how I will draw upon its palette of theoretical resources in my research. This will be presented firstly by a discussion of ‘sociomateriality’ as a theoretical sensibility and ontology, followed by ANT-inflected approaches and how I have applied this theory’s methodological implications.

2.5.1 Sociomateriality

Latour (2004b: p. 227) argues against a priori divisions of ‘social’ and ‘material’ elements by asking readers to envisage a battlefield with soldiers:

[A]ccount for the dynamic of a battle by imagining, first, a group of soldiers and officers stark naked; second, a heap of paraphernalia—tanks, paperwork, uniforms—and then claim that ‘of course there exists some (dialectical) relation between the two’.

[T]here exists no relation whatsoever between the material and the social world, because it is the division that is first of all a complete artefact. To abandon the division is not to “relate” the heap of naked soldiers with the heap of material stuff, it is to rethink the whole assemblage from top to bottom and from beginning to end.

(Latour, 2004b: p. 227)

Books, computers, algorithms, smart phones and other intrusions of non-human agencies, as with ‘tanks, paperwork, uniforms’ in the way Latour mentions, are inescapable in our digital literacy practices, and best understood as acquiring their characteristics through their

interpenetration with humans. Sociomateriality as a portmanteau construct takes account of this relational ontology in the world; computers, for example, can be said to mediate interlocutors, have a voice, and be interlocutors in themselves (Nicholls 2009). Material artefacts more generally are both part of our cultural inheritance and mediating factors in our cognition (Hayles, 2012; Hutchins, 1995). As Orlikowski (2007: p. 1437) contends, “there is no social that is not also material, and no material that is not also social”. Literacy, therefore, is also never separate from its technology (diSessa, 2000). Sociomateriality is therefore about re-evaluating, re-interpreting, and re-conceptualising the vitality of matter and material in social practices. The material embeddedness in digital literacy events should therefore be ‘unpacked’ as part of the new social and material world which emerges, and the often invisible and ephemeral work of ‘practices’ in its creation.

Research following a sociomaterial approach challenges the deeply taken-for-granted assumption that technology and activity should be conceptualised as discrete, and advances a view that there is an inherent inseparability between the material (the technical) and the social in all activities, including literacy. Whilst sociomaterial approaches cover these themes in slightly different ways across different theoretical spaces, including Cultural Historical Activity Theory (CHAT), spatiality theory, complexity theory, it is most notable in ANT (cf. Fenwick et al., 2011). Sociomaterial accounts highlight the political importance of non-human, as well as human, agencies in the performance of literacy, through their entanglement in literacy practices.

Edwards and Fenwick (2014) make a case for the utility of sociomaterial theory in making educational and social critique. Through an assemblage framing, they posit several critique-inspiring questions that are relevant to researchers employing sociomateriality particularly in educational research:

1. *How do material practices mobilise particular agencies?*

2. *What materials have authority and why (and, on what does their authority rest, within and outside particular systems of practice)?*
3. *How and why do certain combinations of things come together, and what particular effects do they perform?*
4. *Of what are the collectivities and collective actions made? At what sites, through what practices, and by which actors?*
5. *How is that which becomes included or excluded from collectivities determined?*

(Edwards and Fenwick, 2014: pp. 12-18)

Therefore through highlighting the political importance and agentive potential of non-human as well as human agencies in the performance of literacy, sociomateriality helps us more effectively study and understand digital literacies and the hybridised, multilayered, and tensional configurations of practices. Researching digital literacies requires tracing of the choreography of the sociomaterial practices which emerge when digital media are used for literacy activities, as they occur entangled in an array of fleeting networks and associations. This is evidently more fascinating with the connectivity of cyberspace where digital literacy practices are characterised by immediacy and hyper-connectivity (Edwards and Usher, 2008). Sociomaterial approaches have the potential to uncover complexities of how digital literacy events are enacted in assignments, as students' digital literacy practices are increasingly knit together with other agencies, and break through the boundaries of different worlds (not just worldviews). It therefore becomes important to attend to these relations theoretically and methodologically. As Waltz (2006) persuasively contends:

The disregard for material actors, the objectification of these actors and the overdetermination of them preclude more careful theoretical and empirical inquiry into the ways in which the persons and technologies are involved with one another in the construction of the social.

(Waltz, 2006: p. 58)

The current digitally-ubiquitous landscape necessitates a theoretical inquiry into the nature of the consequences of technologies on literacy practices, and vice-versa, and to bring this to bear on literacy studies more generally. This is for the advancement of it as a field of study and basis of empirical inquiry, as well as its “ongoing theoretical conversation” (Baynham and Prinsloo, 2001: p. 84).

I contend that extending my theoretical perspective to take account of the ‘material’ aspects of digital literacy events is commensurate with a ‘social practice’ view of literacy without sliding to a view which may under-theorise the potentials of technologies and artefacts (Brandt and Clinton, 2002; Chen, 2010), or indeed over-theorise them (Oliver, 2011). Our interactions with cyberspace are, therefore, neither wholly technologically determined nor are they socially determined. Petersen (2007) clarifies that:

Technological determinism argues that the internet changes everyday life as 24-hour access to the internet makes it a constant intruder which can disturb the private sphere of our lives and change the nature of this sphere sometimes against our own will. Social determinism would view technology as being neutral, as just another tool for the human will.

(Petersen, 2007: p. 82)

There is, therefore, a symmetry across social and material actors in relational activities, and any entity which ‘acts’ is an ‘actor’ (or ‘actant’), regardless of its figuration. Much research on ‘e-learning’ merely provides a descriptive account of what machines are good at, and what they soon will be good at. As properties and affordances of technology are in themselves the results of relational effects, tracing these effects—and the literacy practices which instantiate them—can help us theorise how things get to be the way they are, and how we can change them. It is through the different sociomaterial assemblages that ways of ‘being’ (and ‘doing’ literacy) are enacted. The extensive body of work inspired by ANT approaches provides a

useful set of techniques to both think about and practically explore digital literacy practices, and the sociomaterial assemblages in which they can emerge.

2.5.2 Actor network theory

ANT's theoretical lens has been used increasingly by social scientists (Callon, 1986; Latour, 2005; Law and Hassard, 1999), researchers in education (Fenwick and Edwards, 2012), technology-enhanced learning (Johri, 2011; Rowan and Bigum, 2012), and researchers in the NLS tradition (Clarke, 2002; Hamilton, 2011). Although there is no precise moment when ANT became a distinct approach to social theory, it has drawn on an intellectual backstory encompassing a range of ideas influenced by post-structuralism. Post-structuralism itself is hard to define, except as anything other than a rejection of structuralist thinking – that the whole of human experience is based on a series of underlying structure that give meaning to the world. In 1976, Foucault tried to sum up some of the central concerns of the post-structuralist movement. He argued that:

[f]or the last ten or fifteen years, the immense and proliferating criticizability of things, institutions, practices, and discourses; a sort of general feeling that the ground was crumbling beneath our feet, especially in places where it seemed most familiar, most solid, and closest to us, to our bodies, to our everyday gestures. But alongside this crumbling and the astonishing efficacy of discontinuous, particular, and local critiques, the facts were also revealing something... beneath this whole thematic, through it and even within it, we have seen what might be called the insurrection of subjugated knowledges.

(Foucault et al., 2003: pp. 6-7)

This revolutionary appeal, 'the insurrection of subjugated knowledges', has real life analogues. Following the 1968 riots in Paris, the disenchantment with the fallout of the Soviet regime, and a stark reassessment of widely held Western political and ideological belief systems, post-structuralists argued that a drastic realignment in how we thought about our

world, and how we derived meaning from it, was necessary before we could begin to adjust to that changing world. Post-structuralism therefore became any means to deny grand meta-narratives and Truths.

An innate concern of post-structuralism, therefore, is between binary oppositions. To understand any object and its implicit meanings, we must not only understand the object but also contributions to the object's creation. Foucault's influence on the development of ANT is argued by Matthewman (2013) who links Foucault's theorising of technology, power, and the industrial development of the West with later lines of thought in ANT. This is well exemplified in the following argument by Foucault on the nature of power, when looked at next to Latour's:

Power must be analysed as something which circulates, or rather as something which only functions in the form of a chain. It is never localized here or there, never in anybody's hands, never appropriated as a commodity or piece of wealth. Power is employed and exercised through a net-like organization.

(Foucault and Gordon, 1980: p. 98)

That power is an effect of a 'net-like' organisation is closely connected to Latour's conception of power as "not a property of any one of those elements but of a chain [of human and non-human actors]" (Latour, 1991: p. 110).

It is precisely within these notions of anti-binarism and 'net-like' spatial and temporal structures, which were a dominant part of the French poststructural intellectual tradition, where we can see ANT's backstory emerging. In this vein ANT is also closely connected to Deleuze and Guattari's (2004; 1987) analytic metaphor of the 'rhizome' to conceptualise the world and its spatial and temporal structures, discussed further below.

ANT eventually grew to become a family of theoretical resources which were inspired by – and derived from – poststructuralist ideas mentioned above and ethnomethodology (see Chapter 3 Section 3.4), and mostly developed through a field known as Science and Technology Studies (STS, sometimes also referred to as ‘studies of science, technology, and society’). ANT conceptualises social phenomena as occurring through a messy configuration of networks in which actions are contingent upon a shifting set of factors (or ‘actants’), animate and inanimate, and that activities such as learning are not solely psychological, nor are they entirely social, but that they are generated through the relational activities of sociomaterial networks or assemblages. Such ideas, especially that of ‘assemblage’, are very similar to Deleuze and Guattari’s (2004; 1987) analytic metaphor of the ‘rhizome’ to conceptualise the world and its spatial and temporal structures. A rhizome, in the Deleuzian sense, is a plant with an acentred root and stem structure. Searching for a theory to counter and supplant the hierarchical and binary thinking of the nineteenth century, Deleuze and Guattari advanced the notion of the rhizome structure as an antithesis to the tree structure (as advanced by structuralism), and is therefore characterised by actors’ heterogeneity, multiplicity, flow and fluidity. According to Deleuze and Guattari (2004):

[U]nlike trees or their roots, the rhizome connects any point to any other point, and its traits are not necessarily linked to traits of the same nature... The rhizome is...composed not of units but of dimensions, or rather directions in motion. It has neither beginning nor end, but always in a middle (*milieu*) from which it grows and which it overflows...(it) operates by variation, expansion, conquest, capture, offshoot...it has multiple entryways and its own lines of flight.

(Deleuze and Guattari, 2004: p. 23)

The rhizome metaphor connects closely with tenets of ANT, its intellectual successor project, by conceptualising ‘assemblages’ (a word shared by both traditions) as having no beginning

and no end, but ceaseless in their connections. With ANT's injunction to follow actors and their connections, and a focus on the mundane practices that build realities (deriving from ethnomethodology), ANT developed as a more of a method for analysing scientific and technological knowledge-building practices and as an empirical version of Deleuzian philosophy (Law, 2009).

Distinctively, ANT does away with ontological distinctions and dualisms such as micro/macro, human/material, and agency/structure through an injunction to "follow the actors themselves" (Latour, 2005: p.227) or better still to "trace the associations" (Ibid: p.207) thereby producing accounts of network relations in practice. This has resulted in ANT as a set of theoretical resources that are notoriously difficult to encapsulate or define. Law (1999) puts ANT's attack on dualisms in the following words:

Truth and falsehood. Large and small. Agency and structure. Human and non-human. Before and after. Knowledge and power. Context and content. Materiality and sociality. Activity and passivity...all of these divides have been rubbished in work undertaken in the name of actor-network theory.

(Law, 1999: p. 3)

Described not as a 'theory' (despite the endured 'T' in its acronym 'ANT') but by Law (2009: p. 142) as a "toolkit for telling interesting things about... those relations", its primary concern is a focus on the *how* rather than the *why* of relational activity and social structures, much to the dismay of its critics (Walsham, 1997). However, according to Latour (2004a) , if the descriptive account of relational activity is good enough, then the *why* of phenomena will still emerge clearly through it.

Some have differentiated between 'classic-ANT' (Callon, 1986; Callon and Latour, 1981;

Latour, 1987; Latour and Woolgar, 1986) which gave us the all-embracing heterogeneous *network* metaphor, and ‘after-ANT’ which extends this into the notion of a network as a *spatial* and *fluid* imaginary (Law and Hassard, 1999). In the latter formulation, what is *next to, above, and between* actors in an event is not defined or accounted for by metric distance or Euclidean three-dimensionality, but seen in terms of actors’ fluid patterns of relation. Actors in networks, therefore, produce and sustain their own *spatialities*. For example, through the various activities carried out through it, a computer in a classroom can: facilitate writing activities, be a community builder, maintain friendships, be a symbol of the college’s prestige and investment in technology and is photographed in glossy marketing material, and a visible presence to satisfy quality assurance observations, etc. So for Latour, no phenomenon is confined to one context, one discipline, or one way of thinking; he writes for instance that:

[t]he smallest aids virus takes you from sex to the unconscious, then to Africa, tissue cultures, DNA and San Francisco, but the analysts, thinkers, journalists and decision-makers will slice the delicate network traced by the virus for you into tidy compartments where you will find only science, only economy, only social phenomena, only sentiment, only sex.

(Latour, 1993: pp. 2-3)

Events, and other phenomena of interest, take place in such a fluid network, where ‘space’ is not hermetically conceived of as ‘classroom space’ and ‘social space’, but as a conglomeration of actors expanding and contracting constantly. These actors are not always loyal to the script set for them by humans, and Latour’s fictional account of the failed technology of Aramis (Latour, 1996) is a useful way to understand how a technology can be ‘disobedient’ or ‘disloyal’ to the interests of humans. A technology, Latour argues, does not fail (or act disobediently) because of an actor’s inherent failing, but rather due to a multitude of actors’ failures to sustain inter-dependence and a kind of compromise (p. 101). In the case of Aramis (a Personal Rapid Transit system in Paris), this was due to the number of actors not

envisaged at the beginning of the innovation project which thereby failed to *cohere* effectively and efficiently. Latour further argues that Aramis as a system failed not because of any one particular actor, but rather because the actors as a whole failed to negotiate and adapt accordingly.

Digital literacy events and the practices enmeshed in them can, therefore, be seen as such actor networks, with movements and flows of digital literacy practices in different *strata* of people's lives, and emerging through technologies that are sometimes used for purposes disloyal to their designers' intentions. Following Edwards (2009), I prefer the geological term 'strata' over 'context' as digital literacy events are not bound by institutional structures; they are "scrumbled" (Edwards et al., 2009a) with other digital literacy events, and always juxtaposed in cross-network relations. Latour suggests that in conceptualising this we must imagine a "change of topology. Instead of thinking in terms of surfaces (two dimensional) or spheres (three dimensional) one is asked to think in terms of nodes that have as many dimensions as they have connections" (Latour, 1997: p.2). More recent ANT studies have taken an 'ontological turn' (van Heur et al., 2013) in their study of social phenomena (see next section).

Drawing on an older understanding of ANT initially, we can invoke three ANT-based constructs as a basis upon which to conceptualise relational activity in a digital literacy event: 'purification' (or stabilisation), 'naturalisation', and 'translation' (Bowker and Star, 1999; Latour, 1993).

'Purification' entails the exclusion of all behaviours, practices, etc. which are not valorised in the dominant workings of a network. This can be through the setting of standards for 'digital literacy' and diktats of what is 'acceptable use' and 'good practice' for educational

technology. 'Naturalisation' is the ultimate result of this process, insofar as the object of purification becomes taken for granted or 'black-boxed' (Bowker and Star, 1999). 'Translation', however, is where "mixtures between entirely new types of beings, hybrids of nature and culture" (Latour, 1993: p. 10) are created. Translation relates to "the negotiations, intrigues, calculations, acts of persuasion and violence thanks to which an actor or force takes, or causes to be conferred to itself, authority to speak or act on behalf of another actor or force" (Callon and Latour, 1981: p. 279). Translation is therefore about mobilising actors in support of other actors, and tracing this relational interplay of practices becomes the concern of ANT-inflected ethnography.

Latour (2000) argues that modernity seeks to separate entities, spatially and temporally. Yet all contexts, especially classrooms, are fluid and created through the agentive work of actors not always in situ, with "continuous paths that lead from the local to the global" (Latour, 1993: p. 117), and mixed with cross-network digital literacy practices occurring within and through them constantly via enactments of *translation*. Such occurrences of *translation* can be pedagogically overt attempts to transform curricula such as moves towards work-based learning in Universities, recognition of prior experience as counting towards course credit (Fenwick and Edwards, 2010), but also more discreet mobilisations and translations of personal digital literacy practices in classroom literacy events, made possible by the connectivity of cyberspace (such is the focus of this study).

Counter to this are attempts to *stabilise* or *purify* a context which can be through the formulation and implementation of standards which attempt to standardise what we know to be 'Literacy' and how we define who is literate. More explicitly, purification is enacted through the value attached to, for example, essay writing over texting and textbooks over magazines. Purification, therefore, is about attempts to exclude those literacy practices which

are not considered standard and in doing so lead to constructs – and contexts – deemed “black-boxed” (Latour, 1987) and thereby treated as a monolith. Black-boxing, in this way, is about how a construct becomes privileged, unquestioned, and taken for granted through a kind of reification.

2.5.3 ‘After ANT’ and the ‘ontological turn’

More recent ANT-inflected studies have taken an ‘ontological turn’ (van Heur et al., 2013) in the study of phenomena, and take the view that through the diversity of sociomaterial assemblages a diversity of realities are subsequently enacted. These studies draw from a perspective on ANT which holds that there are no independently existing entities (or ‘realities’) except that they materialise and attain different qualities through their particular relations and configurations over different spatialities and temporalities. Realities therefore can be ‘collateral’ (Law, 2012) and ‘multiple’ (Mol, 2003), rather than singular or coherent, and inseparable from – and assembled by – the practices which emerge at a scene of interest. This relates to a ‘performativity of practice’ (Law, 2012: p. 161) and means we have to carefully attend to the ecology of practices (and their contestations, impasses, breakthroughs, etc.) upholding a network such as a digital literacy event to see how they hold up realities such as class ‘work’, ‘assignments’, etc.

This notion of performativity is slightly different to other uses of the same word in other areas of thought and research traditions, for example by interactional sociolinguist Erving Goffman. Goffman (1990) presents ‘performance’ as a theatrical metaphor relating to the sense and presentation of self, emerging from the an interactional scene. Consistent with this metaphor, what lies ‘back-stage’ is also vital to producing and sustaining the ‘front-stage’ performance. In the ANT inflected sense, performance is about enacting “different versions of the ‘real’, of which there is no original, but only such different versions” (Sørensen, 2010: p. 16). If a particular version is more dominant or preferred, then we need to explore the sociomaterial relations which render it so. It is for this reason that Mol (2002) prefers the term ‘enactment’

to performance in her work (see below). An assemblage framing renders performance “an involved process [between and across actors] rather than a single act” (p. 16), an effect therefore of a sociomaterial assemblage. In the conception of performance adopted for this PhD study, what is ‘behind the scenes’ is also deemed as part of the performance as much as the ‘front-stage’ in the Goffmanian sense, as the forces and agencies which render some realities to be elided and less visible (or even totally hidden) are the result of assemblage activity and of equal interest.

In her innovative and seminal “ethnography of disease” Mol (2002) explores performativity (or rather, her preferred term ‘enactment’) in the diverse sociomaterial practices through which multiple versions of a disease (atherosclerosis) are enacted. Tracing the coordination and trajectory of the practices reveals how the disease was enacted in different parts of a Dutch hospital: the consulting room, the outpatient clinic, in radiology, the operating theatre, etc. In each of these locations a different version of atherosclerosis was produced, and it is by following the different practices, including such things as the patient’s pain upon taking steps, does the single atherosclerosis actually become multiple, and enacted – or assembled – by a multitude of coordinated sociomaterial practices. This is the basis of what she dubs as a ‘praxiographic’ approach. One which “allows and requires one to take objects and events of all kinds into consideration when trying to understand the world. No phenomenon can be ignored on the grounds that it belongs to another discipline” (Mol, 2002: p. 158). The operative word here is ‘practice’, taking us beyond the traditional notion of ‘ethnography’. Mol argues “we learn that in different sites, different atheroscleroses are enacted” (p. 119, note the plural) through “a study of the enactment of reality in *practice*” (p. ix, emphasis added). Every performance thereby creates, or re-enacts, its own world. Mol’s coinage is meant to stimulate researchers to focus not just on human actors of social order, and their stories, but practices with and between social and material actors.

Another, related, perspective on the ‘performativity of practice’ that is relevant to the way a digital literacy event is conceptualised in this research is John Law’s notion of ‘collateral realities’ (Law, 2012). This is the idea that realities are only ostensibly coherent and stable, and are actually held together – sometimes quite precariously – by fractal and disparate practices. These practices sometimes hail from different spatial and temporal locations and with different goals and realities attached to them, but have a role to play in the scene of analytic interest. These forces then produce an ostensible unity and singularity of an event and through an exploration of their practices can we see where and how powerful actors do their work. As some realities ‘tell’ others what to do, push them out of the way, and how and why this happens is dubbed ‘ontological politics’ (Mol, 1999). The choice of which reality ‘wins’, according to Mol (1999), depends on four factors: 1) Where are the options? 2) What is at stake? 3) Are there really options? 4) How to choose (Mol, 1999: p. 79).

Using Mol’s guidelines, through the enactment of practices multiple worlds are brought into play. By tracing the co-ordination of these practices, we can see how they can cross, circulate, block and breakthrough the boundaries of other competing worlds (not just worldviews) in a given event, and the ontological politics which can ensue. The writing of assignments, as explored in this PhD study, is a heavily political act with importance attached at every level of its completion. The various realities it manifests are each performed by a choreography of literacy practices around it.

In this respect, Law further instructs sociologists to attend to the choreography of practices, even if in so doing we are lead beyond the site of interest. He provides a useful set of techniques to achieve this:

First attend to practices. Look to see what is being done. In particular, attend empirically to how it is being done: how the relations are being assembled

and ordered to produce objects, subjects and appropriate locations. Second, wash away the assumption that there is a reality out there beyond practice that is independent, definite, singular, coherent, and prior to that practice. Ask, instead, how it is that such a world is done in practice, and how it manages to hold steady. Third, ask how this process works to delete the way in which this sense of a definite exterior world is being done, to wash away the practices and turn representations into windows on the world. Four, remember that wherever you look whether this is a meeting hall, a talk, a laboratory, or a survey, there is no escape from practice. It is practices all the way down, contested or otherwise. Five, look for the gaps, the aporias and the tensions between the practices and their realities – for if you go looking for differences you will discover them.

(Law, 2012: p. 171)

What is made clear through an examination of the various levels of practice involved in using digital media to inform a piece of work (such as an assignment), is that the number of networks engaged becomes enormous and, as Law writes, “once we turn up the magnification we quickly find that there isn’t an independent, prior, definite, singular and coherent real out there upon which the various reports of reality are based” (Law, 2009: p. 12). The dominant ontology of what digital literacy actually is – or should be – may not correlate with the actual practices of students writing assignments especially as they employ a range of personal and institutional digital media to support their work. A call for research which attends to these very practices as an explanatory programme is required. ANT therefore could be described as a species of social constructionism, albeit with a morphed view of what ‘social’ means (Latour, 2005). This will provide me with a practical theory of the practices of assignment writing, and not just an explanatory account or method.

The philosophical underpinnings of this approach to sociology, according to Law, lie in Deleuze’s work on the philosopher and mathematician Gottfried Wilhelm Leibniz:

Every portion of matter can be thought of as a garden full of plants, or as a pond full of fish. But every branch of the plant, every part of the animal, and every drop of its vital fluids, is another such garden, or another such pond.

(von Leibniz et al., 1998: p. 277)

This philosophical sensibility suggests that the entire world lies within the minutiae of the practices performed in the phenomena of interest, through a kind of Baroque complexity (Kwa, 2002) which forces us to look ‘down’ at the fractal and inter-relational elements in motion in an event, rather than to look ‘up’ from a homogenous abstraction of it (Hillier, 2007). Law draws us to the analogy of the Mobius band to further explain this, which folds and twists such that the inside and the outside are part of the same band worn on the wrist.

With reference to the notion of a digital literacy event, outlined earlier in this chapter, applying the ‘performativity of practice’ (Law 2012: p. 161) means we have to carefully attend to the ecology of practices (and their contestations, impasses, breakthroughs, etc.) to see how sociomaterial relations are assembled and their realities (such as class ‘work’, ‘assignments’, etc.) are done. In other words, an assemblage of competing and disparate practices holds the cultural order of the digital literacy event together. This is a ‘performative’ conceptualisation of digital literacies; that digital literacy practices, their pre-existing realities and texts, perform the reality of the classroom, the assignment, the game-play, etc. According to Gourlay and Oliver (2013) this perspective is a useful expansion to the view of literacy as an embodied ‘social practice’ (c.f. Barton and Hamilton, Scribner and Cole, Street, etc.) already discussed in a previous section. The notion of ‘performativity’ is also discussed with reference to the study’s methodology (in Chapter 3) as I outline how my capturing of the data and the methods used are not innocent and ‘reassemble’ a new set of realities of the observed phenomena.

2.6 Computers in classrooms

From the above theoretical discussion, we can view technologies that are available in classrooms as opening up possibilities for the reconfiguration of the space-time geometries of digital literacy events. The distributive nature of the practices of digital spaces, through hyper-connectivity, forces us to problematise the reconfiguration of a learning and teaching 'context' as we have traditionally understood it to be (Edwards et al., 2009b; Edwards and Usher, 2008). Petersen's (2007) work is relevant in addressing this question: he suggests that online environments create "a weakening of the usual structure of everyday life differentiated into different zones of work, study and recreation" (p. 86), thereby leading to a re-structuring of life and activities. Applying this to digital literacy events, a learner could surf the Web whilst boiling an egg, check a course-related email whilst in a nightclub, or work across several windows (or tabs, programs, etc.) for various purposes; all as they conflate their mundane uses of digital tools with their curricular activities. It is, therefore, in the tracing of the networks in which these occur that we are able to identify the ways in which a digital literacy event is enacted. Notably, in Peterson's (2007) study of mundane internet use in the home, more things are likely to 'disappear' the more the Internet is used. CDs and hi-fi systems replaced by mp3 files and multimedia gadgets, newspapers, recipe books, and phonebooks are all redundant as people access online sources to obtain the same information in the 'remediation', 'rematerialisation', and 'restructuring', brought about by the invocation of cyberspace.

The view that literacy is embedded in sociomaterial practices is consistent with these tenets of ANT, and allows us to view the world as a network of relations "in which all kinds of constantly shifting spaces can co-exist, overlap and hybridise, move together, move apart" (Bingham and Thrift, 2000: p. 299). Digital literacy events, therefore, echoing Kell's (2009) argument to move "beyond the single instance" (p. 86) in literacy studies (see Chapter 2 Section 2.3), are seen more generatively if their space/place is conceptualised relationally in

this way.

2.6.1 Disruptive technologies

Enthusiasts, protagonists and theorists of ‘e-learning’ or ‘technology-enhanced learning’ (e.g. Bonk and Graham, 2006; Salmon, 2004; Vrasidas and Glass, 2005) have critiqued how modes of instruction in classrooms where digital media is utilised can often have little, or no, tangible pedagogic benefits. In this vein, based on their review of teacher professional development, Vrasidas and Glass (2005) posit the following obstacles to integrating ICTs effectively into classrooms:

- The conservative nature of the traditional culture of schooling and classroom instruction
- Teachers’ resistance to changing their traditional teaching approaches
- Lack of time for teachers to learn how to use and integrate ICT in their teaching
- Lack of technology infrastructure
- Lack of specific technologies that address the specific needs of teachers and students
- Lack of ongoing support
- Lack of released time and incentives for teacher innovators
- Incompatibility of traditional teaching with the constructivist framework fostered by ICT
- Need for teachers to unlearn traditional teaching beliefs and practices
- Lack of training in how to integrate ICT into learning within teacher preparation programs
- Need for policy, curriculum and assessment reform

(Vrasidas and Glass, 2005: p. 8)

This list is a useful general diagnostic checklist for ICT integration, but has a number of

limitations; the above 'obstacles', for example, do not address the wider institutional implications that an ICT-intensive educational administration can have on learning and teaching activities. For example, access to the new networks of communities and support, and coping with new organisational structures that are brought about by the installation of ICTs and utilisation of digital media. Following this, Hedberg (2006; 2011) explores some of these broader impacts of digital media, and does so by drawing upon the notion of "disruptive innovation" (Christensen et al., 2011) as a framework, discussed below.

The notion of a 'disruptive' technology was initially proposed by Christensen (1997), and is a framework to understand the effects new technologies have on activities and infrastructures. Christensen (1997) claimed (see also Christensen et al., 2011) that a disruptive innovation (or technology) is one that eventually replaces a previous way of carrying out activities, or a hitherto dominant technology in a particular context or market. New ways of doing things eventually replace older methods and technologies, subsequently leading to radically reshaped societies and the emergence of new social practices. A salient example is that of photography and methods of capturing photographic imagery: from the established norm of acetate, to the immediacy of Polaroid, to the emergence of digital (from analogue) and its manipulability and ease of sharing. Each revolution was caused by disruptive technologies and radically transformed the social practice of photography.

Disruption brought about by new technologies is also discussed by Marvin (1988) in her work 'When Old Technologies Were New'. She argues that there is a kind of re-organisation of relationships brought about by the instalment and utilisation of new technologies. These then reshape power structures and bring new tensions to the fore; these tensions are at their most pronounced when old ways of doing things are carried out alongside newer ways. Writing primarily about electrical communication (early telephone, phonograph, etc.), she states this

relationship as follows:

Electrical and other media precipitated new kinds of social encounters long before their incarnation in fixed institutional form. In their institutionally inchoate manifestations, they inspired energetic efforts to keep outsiders out and insiders under the control of the proper people... Classes, families, and professional communities struggled to come to terms with novel acoustic and visual devices that made possible communication in real time without real presence, so that some people were suddenly too close and others much too far away. New kinds of encounters collided with old ways of determining trust and reliability, and with old notions about the world and one's place in it: about the relation of men and women, rich and poor, black and white, European and non-European, experts and publics.

(Marvin, 1988: pp. 5-6)

More recent formulations of 'disruptive pedagogy' (Hedberg, 2011) have widened these ideas to look specifically at the impacts of technologies on education (Christensen et al., 2011). 'Disruption' in this case relates to how new technologies affect institutional structures and traditional learning and teaching procedures. Disruptive pedagogies, therefore, represent a way to understand how traditional and hitherto dominant methods and tools can become dislodged by the incorporation of a new technologies and innovative educational practices which stem from them. It is often hoped by proponents of digital media in education that incorporation of technologies in this way can radically transform education and alleviate educational disadvantage through such disruptive practices and innovations.

However, Hedberg (2006) argues that much previous and current e-learning practice remains "characterized by transfer and driven by the teacher" (p. 8). He furthermore suggests pedagogies which allow learners to "transcend" conventional tools and institutional strategies of ICT adoption, to transform the role of the learner "from a passive participant to an active engaged constructor of their own experience" (ibid). Disruptive pedagogies are therefore

about aligning pedagogic practices with the potentials offered by digital media tools. This framing, however, does not problematise how disruption or transcendence occur: it is not enough to say that technologies instigate disruptive pedagogies.

In this vein, Haxell (2012) in her PhD thesis on the practices of text counselling further critiques the notion of disruption. She argues that to refer to new technologies as ‘disruptive’ is a “retrospective ... and positioned naming” (Haxell, 2012: p. 242) and limited to the perspective of “those whose experience is disrupted” (ibid). If a certain a priori social order is to be maintained then precisely “who is disruptive, manipulative, resistant, troublesome, or obliging, cooperative, or willing, very much depends on whose reality is being expressed” (ibid). For those who prolifically text, use social networks, etc. their use of these media during the writing of assignments is their usual way of doing things, it is hardly disruptive to them.

Furthermore, according to Haythornthwaite (2013), ‘e-learning’ as field of research has primarily been defined by the use of technologies (HEFCE, 2009), and not the wider and practices of ‘e-learners’. Her recent work (Haythornethwaite, 2013) has attempted to reconceptualise this technology-inflected view of e-learning to encompass the diversity and construction of practice – including literate practice – around learning and technology. This PhD study supports this currently emerging line of work in e-learning which places the constantly emerging literate practices of ‘e-learners’ as the locus of research inquiry.

I therefore adopt a position which seeks to explore the actual doing of work with digital media in the classroom and taking the learners’ digital literacy practices as the locus of inquiry in an assignment writing scenario. The disruption which ensues when digital media are used in learning and teaching spaces is elucidated with the theoretical language of ANT and explored

using the heuristic tools of literacy studies. What emerges, therefore, by attending to the ecology and flows of the constituent practices of the event (and their differentials, contestations, impasses, etc.), is a notion better described, I propose later, as *irruption*, as students write their assignments using whatever tools (and literacies) at their disposal. This notion, and others emerging from the study, is advanced and further explored in the analysis to the PhD study in Chapter 7.

This will be achieved by tracing and tracking the sociomaterial workings of an assignment in a college classroom whilst it is being written. The digital literacy practices may not necessarily exist in a coherent way, despite their ostensible connection; some may be capricious, others stealthily done, rehearsed behaviours, surreptitious work-arounds, and possible circumventions of institutional policies as a learner assumes the role of “an engaged constructor”. The issue is how these digital literacy practices are enacted and how they interact with each other as part of the teleological aim of completing the assignment.

2.7 Digital curation

According to the information theorist Edward Tufte (1990), people are able to thrive in what he describes as “information thick worlds” (p. 50) primarily due to their:

[M]arvelous and everyday capacities to select, edit, single out, structure, highlight, group, pair, merge, harmonize, synthesize, focus, organize, condense, reduce, boil down, choose, categorize, catalog, classify, list, abstract, scan, look into, idealize, isolate, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synthesize, winnow the wheat from the chaff, and separate the sheep from the goats.

(Tufte, 1990: p. 50)

These processes of anthologising content to produce new content, elaborately outlined by Tufte, can be characteristically dubbed as ‘curation’ (Antonio et al., 2012; White, 2012). The word ‘curation’ derives from the Latin root *curare*, meaning ‘to cure’ or ‘to take care of’ and historically relates to any processes of organisation, collation, judicious selection for presentation purposes, and even curing and preserving. The term has conventionally been applied to such work usually carried out in museum settings, and has now evolved to describe what is often done in digital environments and online social, personal, educational, and commercial spaces (Rosenbaum, 2011).

Recently emerged and now pervasive ‘digital curation’ practices have created a need to understand and problematise how such processes can be best harnessed for educational, commercial, and professional gain. Examples of such practices include retweeting, liking on Facebook, collating tweets and other updates into thematic collections (e.g. Storify), the rewriting or rehashing of digitally archived previous text for new purposes, etc. In this respect, prolific Web users have often made themselves effective digital curators by searching and locating information, then creating a new experience by *re-contextualising* it (Good, 2014). A currently famous example is the curation work of Maria Popova, and her periodic blog (Popova, 2014) updates. Her curation filter practices are summarised in the below diagram (Kaganskiy, 2012):

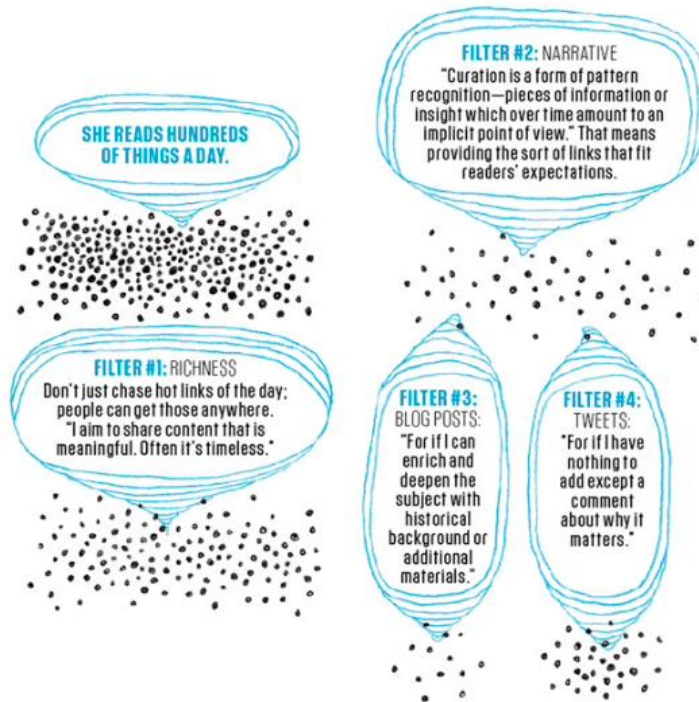


Figure 1: The curation practices of Maria Popova (from Kaganskiy, 2012)

Digital curation therefore is not just about finding relevant material, although that is a significant part of it, but is also about creating a specific and unique experience by utilising the resulting materials which then become *recontextualised* within a new space. A curator, therefore, whether she is journalist-by-proxy such as Popova or a student completing an assignment in a classroom, not only collects and interprets, but also houses that work to create a new experience. In this respect, curation is characteristically a process of “problem solving” (Mihailidis and Cohen, 2013), *re-assembling*, *re-creating*, and *stewardship* of other people’s texts.

Theorising curation beyond textual work, Potter (2012) explores the roots of the processes of multimodal curation (or what he terms ‘curatorship’) and argues for its inclusion as “a new literacy practice ... one that subsumes other forms and modes [of literacy]” (Potter, 2012: p. xvii). For Potter, his multimodal conception of curatorship is “more complex than authorship”

and is better understood as “a form of metaauthorship” which brings together an understanding of “moving image, still image, print, and more” (p. xvi).

Another definition of the specific type of curation which occurs in digital environments is proposed by Antonio et al (2012) who describe ‘digital curation’ as:

[A]n active process whereby content/artefacts are purposely selected to be preserved for future access. In the digital environment, additional elements can be leveraged, such as the inclusion of social media to disseminate collected content, the ability for other users to suggest content or leave comments and the critical evaluation and selection of aggregated content. This latter part especially is important in defining this as an active process.

(Antonio et al., 2012: p. 1)

This kind of digital curation process, when applied to academic writing scenarios, can be divided into five main processes (White, 2012):

1. *Thinking*. This involves deep thinking regarding how the elements being curated are connected, a synthesis and evaluation of them, and a consideration of how the act of collecting adds to the question or task at hand (e.g. a course assignment). In order for curated materials to have added value the researched contents should be synthesised and deeply evaluated instead of just being categorised.
2. *Processing*. The second requirement is the process of selection, setting aside, and finally interpreting to tell a story of the curated materials. The higher the number of rejected materials the more ‘cherry-picked’ the remaining materials will be, thus providing a higher quality of content. In order for this operation to be successful a curator should obtain a deeper understanding of the materials they are curating.
3. *Organising*. Organising the gathered data is another important part of content curation that adds value to the final content. The order in which materials are organised and placed together can easily lead to knowledge creation, based on a thematic, chronological, or contextual understanding.

4. *Value*. Curation is a two-way improvement activity by a mutual reciprocity of value and benefit for the person doing the curation and the one who experiences the final curated product.
5. *Audience*. Finally curation is about reaching others and enhancing their understanding through the publishing and promoting of the curated object.

(Adapted from White 2012)

Leary (2012) argues that curation processes form a crucial part of writing strategies right from the very early years of composition. As children learn to read and write, Leary argues, through becoming proficient in using letters, words and sentences (thus being able to create content ‘from scratch’). Afterwards they learn to steadily hone the capacity for ‘macro-composition’; what he describes as “a form of writing in which chunks of text are copied and moved into a different context or a new document – because stewardship of other people’s writing has become a ‘basic skill’ on the Web” (Leary 2012: p. 1). Using anthologising – or curating – processes in his writing composition classes, he found that “students who manipulate other composers’ texts are more likely to enter the conversations that those texts are a part of” (Leary, 2012: p. 5). Curation, therefore, is a practice central to literacy events from the early stages of life.

Digital curation remains under-addressed in the fields of literacy studies and the learning sciences with respect to how its processes precipitate new forms of assignment writing. This thesis will provide a warrant for its inclusion as an area to be further problematised both as an emerging digital literacy practice and student writing strategy worthy of admitting into traditional forms of writing pedagogy.

2.8 Overview

This literature review has clarified the ways in which my research is conceptualised, and has also provided further justification for its aims and theoretical influences. This PhD research is theoretically aligned with studies in the NLS tradition and augmented with several further key concepts: current trends in digital literacy theory, digital literacy ‘events’ and ‘practices’ (and the ‘everyday’ digital literacy practices which instantiate classroom events), sociomateriality as an ontology, multimodal and ethnomethodological studies of interaction (see Methodology, Chapter 3), the ‘practice turn’ in STS, disruptive pedagogies, and the notion of digital content curation. This review therefore shows the ways in which my research will both profitably draw upon, and fruitfully contribute to, a developing multidisciplinary agenda in the NLS paradigm, and technology-enhanced learning, in exploring how digital spaces reshape the situatedness of traditional classroom-based literacy events and thereby provide a grounding for new perspectives to digital literacies.

In sum, and in light of the literature discussed, I believe that this PhD study is a timely contribution to the field and addresses a lacuna in the research literature for the following summarised reasons:

1. Scholars in the field of NLS have called for more research to be carried out in classroom contexts and for it to have direct implications on curricular practices. A limitation of much research in the NLS is its evasion of concrete suggestions for literacy practitioners. In light of massive ICT investments in FE, this research is ever more pertinent.
2. The limited research which exists on literacy in FE and HE contexts focuses on the wholesale study of learners’ literacy practices, whilst this study takes complex and multimodal capturings of a digital literacy *events* (through real time assignment writing scenarios) in the situational context of a classroom as the main unit of analysis.
3. This study will explicate the fluid and multi-layered nature of digital literacy events,

and thereby complement current research on 'e-learning' which manages to *describe* what is taking place in digital environments, through foregrounding the affordances of technologies and the ensuing 'disruption', but not actually theorise it in terms of literacy practices permeating events, and the related activities of learners more broadly. Therefore, I believe that the conceptual framing of the NLS supported by the palette of ANT's theoretical resources has a lot to offer this very current arena of research, as well as provide a basis for further empirical investigation.

4. Current critiques and developments in literacy research, particularly those which attempt to apply NLS approaches in digital environments, have attempted to expand conceptions of literacy events and practices, and how these are enacted over apparent time and space co-ordinates. This thesis is situated within this emerging theoretical space.
5. New forms of digital writing and curation remain unproblematised and under-theorised in literacy studies and the learning sciences. Through an empirical exploration of assignment writing in practice, this study will uncover the kinds of practices currently labelled as 'curation', the role they play in student writing tasks, and what this can tell educators about writing pedagogy and assignment strategies more generally.

The areas identified in this chapter provide a stimulus to the research aims and objectives which are crystallised into research questions in the next section. This research therefore promotes the development of inquiry into digital literacies and explores new theories related to its classroom application, subsequently to inform pedagogic practices.

2.9 Research questions

On the basis of theoretical and methodological interests outlined above, I raise the following research questions:

- 1. What are the digital literacy practices of adult learners emerging as they work on writing assignments, in a classroom setting?**
- 2. How do these digital literacy practices relate to the learners' everyday digital literacy practices and habits?**
- 3. Are there any discrepancies between the way students carry out work and the requirements and expectations of the course and, more broadly, the college?**

Johri (2011) uses the expression “sociomaterial bricolage” to capture the dynamic and habitualised learning practices which occur through learners successfully leveraging the tools and artefacts available to them. Building on the theoretical discussion in the previous section, I believe that there is scope to explore digital literacy practices through the same framing, in order to help explicate the relationship between technology and literacy practices – a perspective currently in need of further examination through the NLS paradigm.

The research questions posed therefore support the analytical move from digital literacy events to digital literacy practices (and back again) to yield a greater degree of abstraction, and richer insights, than analysing people's digital literacy skills as a set of competencies. This study was carried out as a phased ethnographic case-study, based on already completed pilot research (Chapter 3 Section 3.8), as I endeavour to make visible the discounted and invisible digital literacy practices of students in an FE college. The methodology employed in the pilot has been replicated as multiple case-studies, providing for a type of “thick description” (Geertz, 1973) and ‘thick interpretation’, as I trace and interrogate the

sociomaterial practices emerging as learners complete assignments invoking cyberspace and utilising digital media to aid and supplement their class work.

Chapter 3: Methodology

When you wish to discover the new unexpected actors that have more recently popped up and which are not yet bona fide members of 'society', you have to travel somewhere else and with very different kinds of gear.

(Latour, 2005: p. 22)

Having thus far established the research background, conceptual foundations, and research questions, it is necessary to focus on the methodological framing of the study immediately before the accounts of the case-studies are presented. This is outlined in detail in the coming twelve sections to this chapter. Following the introductory section, sections 3.2 to 3.3 outline how textual practices and literacy activities in digital environments necessitate an evaluation and evolution of methods to explore the new 'black boxes' of digital literacy. This aspect is further discussed in the discussion section to the thesis (Chapter 7), and presents one of a number of contributions offered by this study to the field of literacy studies, educational technology, and the learning sciences.

This is followed by a discussion of the processes I adopted in conducting this PhD project, including the methodological decisions made when approaching this research (in sections 3.4 to 3.5). This aspect, among other things, consists of a detailed review of how and why I have drawn from current trends in ethnomethodology, approaches to video analysis, and multimodal methods of interaction analysis.

Sections 3.7 to 3.9 then outline the methodology, including the data collection methods, access, and ethical issues encountered during the data gathering and evidence preparation. Following this, in Section 3.10, is a reflexive discussion of the agencies of the 'apparatus' in my research, and how the tools and data management decisions have serious epistemological

and ontological implications as I ‘transform’ the captured phenomena being studied. This acknowledgement, I argue, is a kind of ‘reflexivity’ which honours the researcher’s entanglement with the researched phenomenon. The chapter ends with a justification and rationale for the case-study strategy deployed in this study, followed by a preface to the next part of the thesis summarising the main ideas prior to the presentation of the cases.

3.1 Introduction

This study aims to problematise the interaction of personal and non-curricular digital literacy practices in classroom spaces, their mobilisations as resources in curricular work, and how cyberspace is invoked as a conduit for this conflation. I adopt a phased multi-method ethnographic and ethnomethodological approach involving screen recordings with embedded video recordings in a screen-in-screen format, in order to capture computer writing assignment activities in practice. Data are augmented by classroom observations noting organisational behaviour and embeddedness of digital media, and interviews to analyse the participants’ applications of digital literacy in daily life and how such practices interact with the demands of class work and assignments.

This research is therefore aligned with existing studies advocating ethnographic analyses of classroom and home-based digital literacies. Ethnographic techniques can be valuable tools for examining digital literacy issues, and the relevance of ethnographic research in digital literacy environments has been the subject of several recent research projects. These include research into in-school settings (Damico and Riddle, 2006; Morrell, 2002), out-of-school contexts (Ito, 2010; Yi, 2008), afterschool settings (Barab et al., 2005; Brass, 2008; Hull, 2003; Hull and Schultz, 2002), and multisite studies exploring the connections between literacy practices across home and school (Bulfin and North, 2007; Pahl, 2007).

In addition to the ethnographic element, this research also at times draws from ethnomethodological (further described in Section 3.4 of this chapter) approaches to video analysis and multimodal methods of interactional analysis which use the latest advancements in qualitative data analysis software. This latter aspect is an emerging methodological approach for digital literacy research as advanced by this PhD (see Chapter 7 Section 7.5). But in presenting its contribution, it requires a justificatory review in light of new challenges brought about by researching literacy in digital environments. Such a review is presented below in the following sections before the methodology itself is outlined.

3.2 An evolution in methods

[S]ocial-and-physical changes in the world are – and need to be – paralleled by changes in the methods of social inquiry. The social sciences need to re-imagine themselves, their methods, and indeed their ‘worlds’ if they are to work productively in the twenty-first century.

(Law and Urry, 2004: p. 390)

Law and Urry in the above cited paper argue that modern social inquiry needs a re-evaluation of its methodological approaches, to reflect the “fleeting, ephemeral, geographically distributed and the suddenly proximate” (Ibid: p. 403) character of modern social phenomena. Research methods, they further argue, are *never innocent*, and *enact*, describe *into*, and *interfere* with the realities which they ostensibly represent. The question then becomes not just one of which methods to employ, but the *kinds of realities* that are ultimately being enacted through the use of a particular method. This is due to the *performativity* of method; that is the notion that methods “have effects; they make differences; they enact realities; and they can help to bring into being what they also discover” (Law and Urry, 2004: p. 393). These concerns, and their relation to this study and to phenomena of digital literacies, are discussed in the below sections, and also re-emerge in a later part of the thesis.

Digital literacy activities which emerge through prolific Internet use, and other digital media tools, bring new research challenges and subsequently relevant research techniques to overcome them (Halverson et al., 2012). This is largely due to the unique character of digital literacies and the kinds of practices that go into student work, or as Bigum et al. (2014) dub “secret learner business”. They argue that an exploration of such “secret learner business” can make public “the fuzzy, pragmatic and messy business of learning” (Bigum et al., 2014: p. 1). In exploring the doing of learning, and how much is glossed in final products of student work, they draw parallels with work in STS on the doing of science (Latour, 1987; Latour and Woolgar, 1986), and how end products of scientific work often gloss “the messiness, noncoherence and fuzziness of what went on in the laboratory” (Bigum et al., 2014: p. 1).

Applying this sociological lens to my accounts of students’ assignment writing raises issues of appropriate analytic methodologies and data collection techniques and instruments in my endeavour to explore ‘the messiness, noncoherence and fuzziness’ of how assignments got written. As the objective in each case is to trace the sociomaterial workings of assignment writing, I have drawn from ethnomethodological (Garfinkel, 1967) and praxiographic (Mol, 2002) methodological influences. Ethnomethodology is the study of the everyday methods, practices, and processes which hold up and maintain a particular social order and ontological character to a phenomenon. In other words how the students (and teachers) make sense of the assignments, and its practical achievement, given the choreography of practices around it. This is achieved in this study through a particular iteration of ethnomethodology which draws from the field of video analysis (outlined in detail in sections 3.4 to 3.5 below). A praxiographic approach is one which “allows and requires one to take objects and events of all kinds into consideration when trying to understand the world. No phenomenon can be ignored on the grounds that it belongs to another discipline” (Mol, 2002: p. 158). The operative word here being ‘practice’. In tracing the sociomaterial workings of the disease, atherosclerosis (note the singular), Mol argues “we learn that in different sites, different

atheroscleroses [note the plural] are enacted” (p. 119). But only through “a study of the enactment of reality in *practice*” (p. ix, emphasis added).

3.3 New literacies, new methods

As literacy practices become transformed by new digital media and subsequently reinterpreted by new understandings of literacy, research methodologies must also evolve to meet these new challenges. The evolutions in literacy and methods which have occurred, however, have been to a large extent parallel rather than dialectical, with insights from one doing little to illuminate the other. The digital revolution has doubtless transformed the way we think about literacy, with turns to visual (Mitchell, 1994), social (Gee, 1996), multimodal (Jewitt, 2009), and posthuman (Hayles, 1999) inflections to studies of semiotic exchange. This, in turn, has resulted in a drastic re-evaluation of the constitutive factors involved in meaning-making to include consideration of an increasingly complex array of actants, modes, and semiotic systems in acts of literacy. However, when it comes to how new social interactions, and literacies in particular, are examined the evolution has not been as radical (Caperton, 2010; Heath and Luff, 2000). This section of the methodology chapter highlights an evolution in methods to examine the phenomena of new digital literacies. Following this, the particular methodological contribution offered by this study is fully outlined in Chapter 7 Section 7.5.

Addressing this need for an evolution in methods, and drawing on Gee’s theorisation of video-game based literacy practices, Caperton (2010) argues that researchers need to explore and refine innovative methodological approaches for observing and capturing the unique forms of learning and literacy in digital gaming environments. Echoing Gee and Caperton, in this PhD study I found the need to enhance traditional methods of data collection and analysis with more advanced “bleeding edge” (Woods and Dempster, 2011) techniques that combine advances in digital technology with a rigorous methodological framing. The complex and

distributed nature of learning and literacy in digital environments theorised in much recent literature necessitate tools and techniques to open up the new educational ‘black-boxes’ in order to scrutinise how such things as student work, game-play, and learning are done, through a rich account of their practical action. In other words, as Latour argues in the quote at the start of this chapter: “you have to travel somewhere else and with very different kinds of gear” (Latour, 2005: p. 22).

In this respect, I am guided by ethnomethodological (e.g. Garfinkel, 1967) approaches that prioritise seeking an emic/insider perspective. In other words, focus remains on empirically observable events, ‘digital literacy events’, and their constitutive practices and interactions as they happen, including their shaping, trajectories, impasses, breakthroughs, and enactment through sociomaterial work. This study therefore uses sociomateriality to extend ethnomethodological approaches to research (discussed below) and thereby contributes to developing agendas in both video analysis (cf. Luff and Heath, 2012) and recent literacy research (cf. Gourlay et al., 2014). The former sociological tradition, and its relation to my study and its methodology, is discussed in the below sections.

3.4 Ethnomethodology

The broad field of social inquiry known as *ethnomethodology* is fundamentally concerned with the everyday methods, practices, and processes that people use for the production of social order and the character of the world (Garfinkel, 1967, 2002). In other words how the students make sense of their assignments, and its practical achievement, given the tools and resources in front of them. The social order of realities such as ‘the classroom’, ‘the lesson’, ‘the assignment’ etc. are all held together by social actors’ practices, rules, and processes. The problem of ‘social order’ is the chief concern of ethnomethodology and the cultivation of what ethnomethodologist Heap (1990) refers to as a “local rationality” of an event or encounter through the practices of all the actors in the assemblage. In this study, this problem

is addressed through a particular iteration of ethnomethodology which draws from the field of video analysis, as outlined in detail in this chapter of the thesis.

Ethnomethodology is a useful lens in this research, as constructs such as assignments and learning are nebulous, contested and emerge through a kind of ‘secret business’ (Bigum et al., 2014) of practices. Ethnomethodology stimulates researchers to move from a psychology-based understanding of these constructs, to a focus on the “socially organized artful practices” (Garfinkel, 1967: p. 32) which give them their character. This echoes the notion of ‘practices all the way down’ found in Leibniz’s *monadology*, and Law (2012) provides a useful set of techniques when exploring them:

First attend to practices. Look to see what is being done. In particular, attend empirically to how it is being done: how the relations are being assembled and ordered to produce objects, subjects and appropriate locations. Ask... how it is that such a world is done in practice, and how it manages to hold steady. [W]herever you look whether this is a meeting hall, a talk, a laboratory, or a survey, there is *no escape from practice*. It is practices all the way down, contested or otherwise... [L]ook for the gaps, the aporias and the tensions between the practices and their realities – for if you go looking for differences you will discover them.”

(Law, 2012: p. 171. See Section 2.5.3 for a fuller discussion)

The forces, agencies and practices which brings the assignments’ practical accomplishment is the locus of inquiry; the ‘rules’ that may not be explicitly stated, but remain part of the dramaturgy of the assignment writing process and its context, and of course the aporias, or that which breaches those ‘rules’.

A number of methodological approaches have emerged from ethnomethodological inquiry. Perhaps the most famous of these is conversation analysis (Atkinson and Heritage, 1984),

followed by later advancements in video analysis (Koschmann et al., 2007). According to Koschmann et al.'s manifesto for video analysts, video-based studies which are ethnomethodological in nature are a departure from traditional conversational analyses as they expand the province of interest to include: “embodied aspects of interaction and the ways in which interaction depends upon and employs the material environment in which it is produced” (Koschmann et al., 2007: p. 134). This forms the basis of my interest in using video analysis to better understand the work of assignment writing, and importantly to augment its use with a crucial enhancement: the deployment of screen recording. But first a justification of the foundational use of video analysis is necessary.

3.5 Video analysis

Video analysis is currently a popular methodology within qualitative research approaches (Knoblauch, 2012). It has also been successfully integrated with other methodologies (e.g. Deppermann, 2013; Fields and Kafai, 2009; Garcez, 1995) and, as it coalesces as an approach, there remains an acceleration of its use and development throughout social research. In this PhD thesis I draw attention to its particular ability to capture elements increasingly salient in digital literacy theory (see Chapter 2 Section 2.4) as it becomes more important to examine interactions and contemporaneous practices around, through and with computers during digital literacy events. Video analysis methodologies also hold great promise for research into learning technologies and the Learning Sciences more generally. Its successful use in this PhD study, however, requires overcoming both technological and methodological issues, including the relationship between theory and methodology, and how the researcher, the research apparatus, and the researched phenomena are all epistemologically and ontologically entangled in one assemblage.

In adopting video analysis methodologies, this study captured on-screen composition and online activities as digital recordings alongside embedded video recordings of students' real

time interactions around the tasks. This provided a rich multimodal rendition of the activities on- and off-screen, which were then written up into video logs of the events (see Appendix A), excerpts of which were then transcribed in ways that capture the complexity of the data in a format amenable to analysis. These data were augmented by data from ethnographic methods such as observation notes, interviews, and collected student work (see Section 3.7 of this chapter). An appropriate CAQDAS² (Lewins and Silver, 2007) tool (i.e. ELAN) was then used to manage, transcribe, code, and analyse the data. The combination of research techniques was adopted in order to explore what participants see, say, and do in relation to what they write in the classroom. This provided me with insights through a composite picture of classroom interaction and a detailed, dynamic rendition of digital literacy activities.

3.6 Methodological background

Video-based research has been employed by researchers for decades (e.g. Goodwin, 1994, 2000; Heath et al., 2010; Leeuwen and Jewitt, 2000) as have predominantly audio-based methods for conversation analysis (Psathas, 1995), and think-aloud techniques (Ericsson and Simon, 1993). New elements for this PhD study include a combination of methods that already exist, their use in novel ways to permit multimodal analyses, and utilising the latest advances in qualitative research software tools. This is discussed in the sections below.

3.6.1 Video recorded data

Video data afford flexibility and crucial contextual information over solely handwritten (or typed) observation notes and audio recordings (Edwards and Westgate, 1994), and also allow for retrospective coding and analysis. The relative ease with which video file data can be manipulated (segmented, slowed down, etc.) also allows for new levels and combinations of qualitative and quantitative analyses (Jacobs et al., 1999; McLarty and Gibson, 2000). In this

² Computer Assisted Qualitative Data Analysis Software.

respect, ethnomethodologically inspired studies of workplace interaction have been influential in incorporating the rigour of linguistic transcription with multimodal sensibilities on the detail of how technologies feature in day to day conduct and interactions (e.g. Heath et al., 2000; Luff et al., 2000; Suchman, 1987). Among them are studies of doctor-patient-interaction (Greatbatch et al., 1995; Heath, 1986; Pasquandrea, 2011), journalists' writing strategies (Van Hout et al., 2011), and the role of computers in co-operative work (Heath et al., 2002).

Ethnomethodology and conversation analysis, as analytic orientations, have been highly influential on studies of workplace interaction, and have led to a large body of empirical works illuminating the complex character of sociomaterial interaction, and how tools and technologies feature in mundane organisational activities. Therefore like Heath et al. (2010), my choice of methodological approach emerges from a framework that “prioritises the situated and interactional accomplishments of practical action” (Heath et al., 2010: p. 1) . The perspective adopted for this study of digital literacy events and classroom composition as similarly complex and sociomaterial calls for a level of detail and temporality that video analysis can begin to provide, but when used alone is insufficient. Combining multiple views (e.g. screen capture) of participants' interaction with technologies and each other was therefore necessary to address the relational and mutually constitutive work between human and material elements involved in classroom writing.

3.6.2 Screen recording with video

This brings us to the affordances of screen recording as a method to augment video data. Screen recording software has been employed by some researchers as a tool to record the iterative processes of on-screen composition of texts (Asselin and Moayeri, 2010; Geisler and Slattery, 2007). Predominantly used by writing-process researchers, screen recordings

mitigate against the potential distortions of both think-aloud protocol data for writing research (Hayes and Flower, 1980), and keystroke logging techniques (Miller et al., 2008). This study is not the first to try to capture writers' complete interactions on- and off-screen. Notably, nearly thirty years ago, Bigum and Gilding's (1985) attempt at synchronously capturing students' writing, movements, and talk around a task required two monitors, a video mixer, a video tape recorder, and a means of splitting the computer video signal (see figure 2).



Figure 2: The data capture setup from Bigum and Gilding (1985: p. 96)

Since then studies adopting similar approaches to incorporate screen activity with video analysis in co-ordinated work are few in number. Among them are Garcez's (1995) microanalyses of students' interactions with a multimedia programme, Hindmarsh et al.'s (2000) exploration of collaborative work online (without using dedicated screen capture software), and Woulds's (forthcoming) multimodal analysis of interaction in a second language classroom. More linguistically oriented studies include explorations of journalistic writing strategies (Van Hout and Macgilchrist, 2010; Van Hout et al., 2011) and collected screen recording data of Facebook chats (Meredith and Stokoe, forthcoming). More recently, Garcez et al. (in press) provide a more up-to-date review of this type of research procedure,

its implications, and what it affords applied linguistics researchers adopting micro-ethnographic approaches.

Two very recent, yet different doctoral studies by de Roock (forthcoming) and Adams (2013), written at the time of writing this thesis, have also sought to explore digital literacy practices using a similar methodology to that of this PhD research. Adams's (2013) context investigated university students' explaining video texts to each other in a class task. The methodology needed to include spoken modes, digital text, gesture, gaze, proxemic relations between the students and other tools such as the computer mouse and pens. *ScreenFlow* screen recording software was used to record all activity on the screen as well as the computer audio, spoken audio and the web camera alongside two tripod-mounted cameras, one facing the students and one from behind. Notably, and particularly relevant to my study, presentation of data posed a particular set of problems due to the limited scope of a two-dimensional format in a printed thesis. As a result, the data could only be a representation of a specific moment, as it had undergone a transformation from social action to still images and diagrams.

De Roock's (forthcoming) study followed adolescent girls' literacy practices in a massively multiplayer online game (MOOG) in a classroom ethnography with a predominantly Latino, low-income school in the Southwest US. Screen-in-screen video and audio was captured using Blueberry Flashback Recorder on student laptops along with video and audio from an HD tripod mounted camera. Combined with researcher field notes, this generated a detailed data stream of ongoing interaction with, through, and around the student laptops on multiple computers simultaneously with a wider shot to capture higher quality audio and gestures, as well as facilitating ease of syncing.

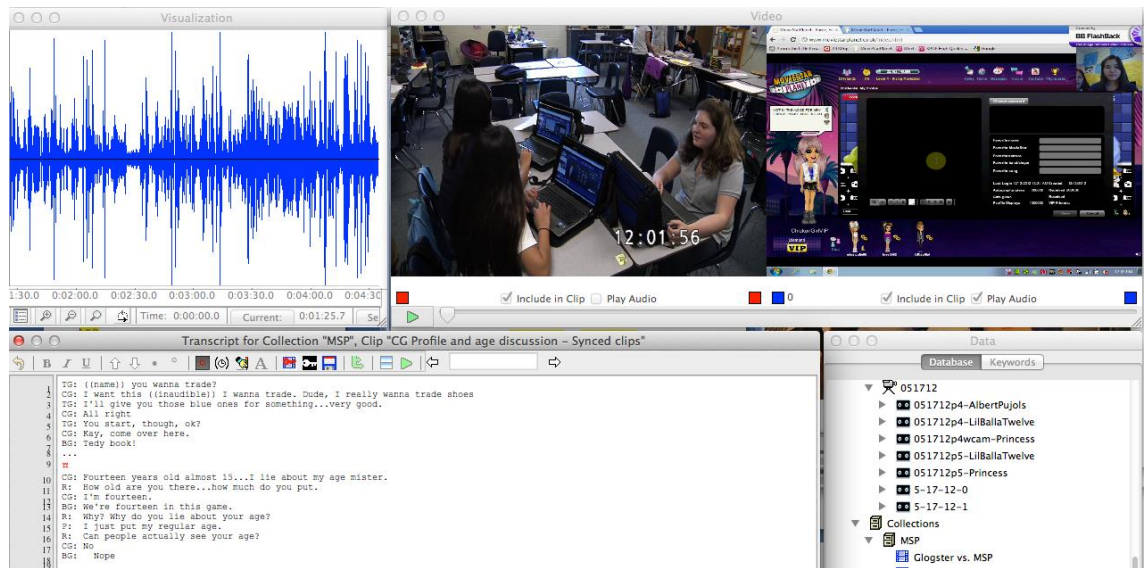


Figure 3: A screenshot from de Roock (forthcoming) shows video from a mounted camera synced with a screen recording plus a transcript.

Data were managed using Transana (see figure 3) with particular clips exported to ELAN where they were synced for multimodal transcription (Bezemer and Mavers, 2011). The kinds of methodologies and data collection and management instruments in these two studies are similar to that which is employed in this study, with the aims in each case to make ‘deep dives’ into digital literacy events.

3.7 Data collection procedure

The research adopts a phased multi-method ethnographic and ethnomethodological approach involving screen recordings with embedded video recordings, in order to capture computer writing assignment activities in practice, augmented by observations noting organisational behaviour and culture of digital media use, and interviews to analyse the participants’ applications of digital literacy in daily life. The phased methodology employed in the study is outlined below:

3.7.1 Selection of sites for observation and courses

I identified three sites for classroom and institutional observations of digital literacy and assignment writing. These three sites are located in two colleges: Abbeydale College and Woodale College³. Case-study 1 relates to Abbeydale College, and case-studies 2 and 3 relate to two geographically separate campuses of Woodale College.

Enquiries were initially sent to teachers and heads of departments by email and followed up by telephone conversations with relevant staff and college management in order to negotiate access. After permission to enter the site for the research was granted by the college management, meetings were held with the relevant teachers. Classroom observation visits and document collection began immediately from this point. A key consideration in the selection of the colleges was that they are major providers in the FE sector. Key considerations in the selection of the courses were that they have vocational elements embedded as part of them, that they are varied such that there would be significant differences in the course-related digital literacy activities of the students, assignment writing format and process, and learner types. This variation and distinctiveness of the cases was ascertained during the discussion process with the tutor when negotiating viability of the courses for observations. The vocational element was important to gain insight into the kinds of digital literacy practices influenced by, and drawn from, work spheres of participants' lives, and how these practices can emerge, interact, or compete with other practices during the writing of assignments.

3.7.2 Phase 1: fieldwork and observations

The first phase of fieldwork was observational: classroom and institutional observations were conducted in order to accurately record the organisational behaviour of students in the class,

³ The names of all the research sites have been changed.

to identify the context of the programme of study, and the place of ICTs in the workings of the college generally. The objective of this initial phase was to enable me to examine observable digital literacy processes, institutional policies of digital media use, and their culture of use in the college. The colleges were each visited weekly, for around two to four hours on each occasion. Each site was visited four times in total.

My role in the first stage involved taking field notes. The most important element of fieldwork, according to Fetterman (1998: p. 9), is “being there...to ask seemingly stupid yet insightful questions, and to write down what is seen and heard”. Insights of interest and observations were documented by photographs, video recordings, and a field note diary kept in a hand-written note book, supported by ‘Evernote’, a cloud-based note-taking application. Some texts and artefacts related to college policies and procedures were also collected as site documents.

3.7.3 Phase 2: capturing assignment writing

The second phase was of a multimodal nature, drawing from a methodological choice that is well justified by current researchers in the NLS tradition. According to Dicks et al. (2011) a multimodal approach can mean “[a]nything from research using video recorders, observation of bodily movements or analysis of material objects and environments” (p. 228). Building on the first phase, this phase involved observation and capturing of a computer writing assignment activity in practice. In this respect I am influenced also by ethnomethodological studies of workplace interaction (see Section 3.6.1) which extensively utilise video analysis as a method.



Figure 4: Data capture setup used a screen recording with embedded video recording and audio of surrounding vocalisations.

Building on the first phase, this involved screen capture with embedded video recording in a screen-in-screen format, in order to capture a computer writing assignment activity in process (figure 4). In light of the methodological review above, the software chosen for this study is Blueberry Flashback recorder, which captures the entire procedure of on-screen composition as a digital recording alongside an embedded Webcam recording of the learners' movements, with an audio recording of talk around the desk at the time of writing. This provided me with a complete multimodal rendition and in situ monitoring of the event, on- and off-screen, extracts of which were transcribed according to Jeffersonian conversation analysis (Atkinson and Heritage, 1984) and multimodal (Bezemer and Mavers, 2011) conventions where necessary, depending on salient clips gleaned from the video log (Appendix A). Data were then managed in a platform known as ELAN. Part of a family software tools known as CAQDAS (Lewins and Silver, 2007), ELAN facilitates the organisation, transcription, and analysis of multimodal data from multiple sources in a manageable interface. ELAN uniquely allows for the syncing of videos files with a horizontally depicted transcription in tiers, giving methodological flexibility with complex video data (Halverson et al., 2012). Figure 5 is an example screen shot depicting the representational system created through this technique.

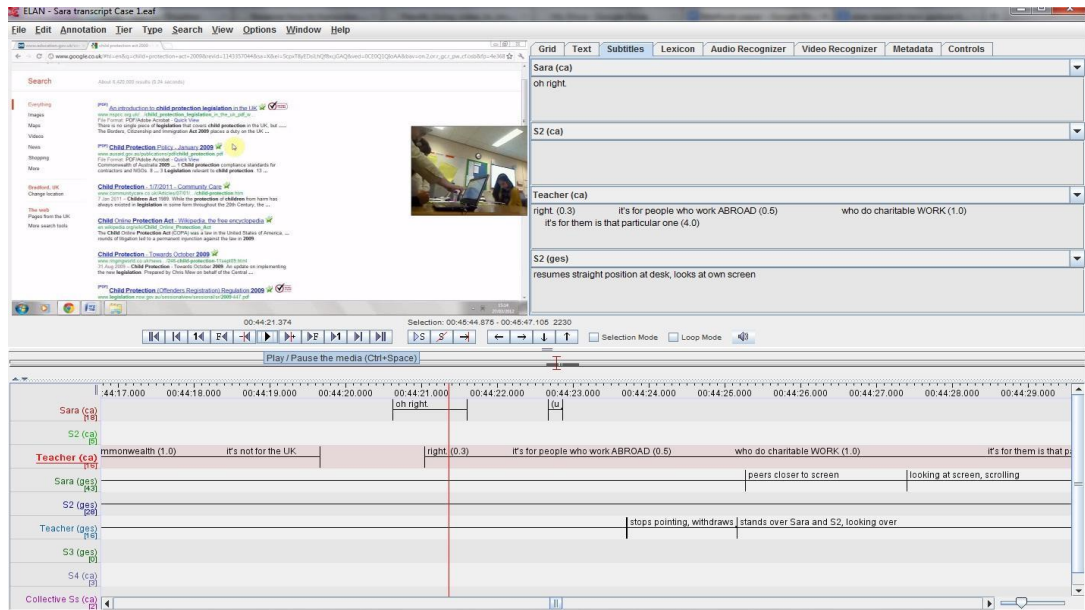


Figure 5: A transcript screenshot using ELAN from the study.

Selection of participants for this phase, and subsequently phase 3, was based on negotiation with the teacher with the following in mind: that the learner is of a median level in the class, and that he/she has had some professional experience in the vocational aspect of the course. This allowed me to discuss the kind of influences literacy practices across work, home, and class have on classroom activities, and how these can potentially interact in an assignment writing scenario.

3.7.4 Phase 3: interview and icon-mapping activity

Finally, the third phase involved here comprised of qualitative semi-structured interviews with the learners. This enabled me to understand and explore the ways in which participants perceive and practically apply digital literacy in their life both in and out of the classrooms. I was thus able to gauge the norms, values, and subjective feelings associated with their practices of digital literacy generally, and how these were played out in the recorded digital literacy event in phase 2. This enabled me to gather data that can deepen understandings and insights gained from my observed activities (phase 1), especially from the participants' perspectives, and to follow up on noteworthy issues arising in the digital recordings of

assignment writing (phase 2).

This was carried out through scrutinising the recordings for noteworthy and discernible moments and patterns of behaviour which addressed my research questions, and broader aspects of interest for other research communities. Aided by associated transcription files and field notes, I explored practices which were in contrast to dominant and imposed institutional conceptions of what an ‘assignment’ actually is and – more importantly – how it should be written by the student (see Section 1.4). This led me to themes emerging such as ‘digital content curation’ (see sections 5.7 and 7.6) and social networking practices (see Section 4.6). In some cases these are ‘unacceptable’ (Section 4.6) practices, and in other cases unexplored enough in current literatures pertaining to literacy and technologies (see sections 2.7 and 7.6), yet appear as central to the assignments’ completion.

Following a participatory ethnographic method (Emmel, 2008), this part of the research was enhanced by the incorporation of a Venn diagram activity (see figure 6) to demonstrate practices of digital literacy and tools for personal, classroom, and work use, and the ‘cross over’ between them. An interview process of this kind, involving icon mapping and diagram creation, has been substantiated in prior research (Mannion et al., 2007), but was modified and enhanced in this methodology to allow for annotation, scribbles and video recordings of the interviews. I instructed the participants to arrange the Venn diagram, but to also annotate it and show where and how practices ‘flow’ across different spheres of life activity (work, home, etc.), and how practices initiated in one sphere can infiltrate another.



Figure 6: Example of the Venn diagram component of the interview.

Dividing the study up into three phases was methodologically the optimum strategy; doing so enabled me to address the fluidity of the digital literacy event, and the conflation of interests within it, whilst appreciating and retaining its apparent ‘boundaries’. To study any event closely, especially when considering human-machine and Web-based actors’ interactions in literacy activities, can demand a certain attention to granular detail. Video analysis as deployed here is extremely useful in capturing an aspect of one particular case-study (‘Sara’), alongside elements of granularity when transcribing selected segments of the case video logs. Yet, an overall commitment to ethnography requires further ‘big picture’ actors, and these are more prominent in the other two cases wherein ELAN was not needed. The level of granularity adopted, therefore, drawing on video analysis and ethnomethodology, serves to highlight and make observable to the reader the complex interplay of actors within assemblages that emerge in a given digital literacy event. Aspects of the analyses, therefore,

are at times ‘fine-grained’, comparable to other focussed and video-based ethnographies such as those cited earlier in this chapter. But in highlighting the interactions and enactments that emerge in specific circumstances, such a level of granularity is not always necessary; supporting ethnographic data (e.g. documents, interviews, observations) as part of broader investigations also led to less ‘fine-grained’ analytic choices when following actors and their associations.

Also, as with this type of research, the themes/sub themes arising from one stage of the data collection have the potential to inform the subsequent stage (Pole and Morrison, 2003), as part of a developmental case-study design. The chief benefit of investigating this type of case-study is that its micro-scope focus of, for example, a single student or group, allows for a multi-instrumental approach to data collection such as this. This approach, if set against multiple case-studies in the PhD, will permit a complementation and a type of triangulation which will inspire a valid and emerging “thick description” (Geertz, 1973) of learners’ digital literacy practices and assignment writing strategies.

3.8 The pilot study

Prior to carrying out the research, I felt the need to test the unique combination of data collection tools and techniques through a pilot study. This allowed me to explore the practicalities and feasibility of certain components of this study, namely: the data gathering methods, the types and amounts of data these can yield, and a piloting of analytical techniques. Conducting the pilot study, and rehearsing my data collection techniques and analyses beforehand, was also vitally important to test out the proposed questions being explored in and through the PhD project. This is consistent with the arguments of Aeginitou (1993) regarding the utility of pilot studies for research projects.

Conducting a pilot study enabled me to give the research methodology a trial run under realistic conditions, helping me to find out how the field and its participants react to the whole process. I was also able to reflect on ethical considerations, difficulties with access for research in FE colleges, and selection of appropriate software for both data collection and management. Due to the success of the pilot study and the viability of its replication as a case-study model, it became integrated into the actual PhD project as part of case-study 1 (Sara: Chapter 4).

3.9 Access and ethics

As an ‘outsider’, gaining access to the research site required much negotiation with senior management, the goodwill of the teaching staff, and informed consent of the entire class. As I am not a member of the teaching staff, these were initially difficult obstacles to overcome. Nevertheless, reflecting on the pilot research, I feel that my ‘outsider’ status allowed disconnects between social digital literacy practices and those of the course (and the college) to emerge more easily in observation and interview than had I been a member of the college teaching staff. As an ‘insider’ I may have either not picked up on these, or their occurrences too surreptitious to be noticed.

Gaining institutional ethical approval was successful after two rounds of negotiations with the University of Leeds’ Faculty Research Ethics Committee. Ethics documentation and the negotiation process is outlined in extracts presented in Appendix B of this thesis. During these negotiations I was required to explain and justify any instances of ‘harm’ which could potentially be caused to the participants using the methods I proposed. Notably, questions posed by the research ethics committee centred around notions of harm that were unrelated to the kinds of methods I was using, and did not address harm as it should be construed and anticipated when 1) observing ongoing screen activity, 2) monitoring classroom interactions, and 3) discussing the intricacies of digital practices outside of college. My methods are novel,

and challenge traditional ethical processes, and subsequently require more reflection and justification than conventional tools of data collection. For example, no mention was made of what I (the researcher) would do if presented with sensitive or illegal information about the learner's Web activity either through the recordings or interview. These aspects are salient in the exploration of new digital methods and demonstrate a need for institutional processes to catch up to current trends.

In this respect, whilst the rich data of multimodal recordings are valuable for my research and for new methodologies in general, their collection in the way I achieved for this PhD research presents additional, perhaps even magnified, ethical issues. Data of screen recordings presented a detailed, ongoing look into my participants' online activities and lives (including their personal lives), and potentially unsafe or unethical behaviour that they could have carried out online, etc. As others discussing the unobtrusive yet invasive nature of screen recording as a data collection technique (e.g. Tang et al., 2006) have suggested, I was lead to implement the following measures as ethical considerations:

- Procedures of informed consent maintained that participants had the right to opt out of the research at any time.
- Participants were able to inform me if there are any sections of the recording that they want to delete. This was achieved by a review of the recording in the follow up interview (phase 3) in which the recording was discussed.
- Participants could easily pause and restart the recording during the screen capture process, using a pause/restart icon in the taskbar menu.

In order to ensure anonymity, names of the participants and the institutions in public documentation (e.g. online presentations and published work) were changed or removed.

Doing so also protected the identities of the students, staff and college management. However, with the data capture stage (phase 2), complete anonymity can be difficult to maintain, as participants' movements and screen activity are of importance for analysis and evidence preparation. Merely changing their names was not enough to assume privacy. Where necessary, and upon discussion with participants, faces were pixilated or blocked out in screenshots. Voice distortion techniques were also offered to the participants, but none of them stipulated this as a necessary condition for their participation.

3.10 Data management

In the process of data management and analysis, decisions were made that reflect issues of practicality alongside the unique “demands” of these types of data (Luff and Heath, 2012). For example, the screen capture software used (*Blueberry Flashback Recorder*) allows for the screen-in-screen format as shown in figures 4 and 5, conflating the screen recording with the webcam and audio recording. Pertinent decisions surrounding the overall apparatus of the study, and their epistemological and ontological implications, are outlined in the section below.

3.10.1 'Reassembling' the assignment

Having argued in earlier sections of this thesis (Chapter 2) that digital literacy events are entangled within assemblages of human and non-human agencies, consistent with theories of sociomateriality and performativity, I am also required to acknowledge the agencies of the very apparatus I use to capture them. Just as a version of the assignment was enacted by the awarding body issuing the assessment rubric, then by the teacher on the whiteboard as instructions and directions were issued, followed by the student in their work towards its completion, also the management of my data – its packaging and formulation for reading of it here in this thesis – also assemble, as Law (2012) makes clear, a “putative reality” (p. 156) of the assignment.

Law's term "putative reality" relates to a version of the researched phenomenon, the assignment, which is organised by – and negotiated between – my writing practices (the formats and genre of thesis data presentation, etc.) and practices of readers of this thesis. This is explained by Barad (2007) as emerging from a 'performative understanding' of knowing, one which "takes account of the fact that knowing does not come from standing at a distance and representing but rather from *a direct material engagement* with the world" (p. 49; emphasis in the original). What becomes important then for research is to explore what is "the nature of these [new] enactments", and, consistent with sociomaterial theory, that "humans are not the only ones engaged in performative enactments" (ibid). More specifically regarding the conceptualising of data and their ontological properties, Floridi (2004) contends that "[a] white sheet of paper is not just the necessary background condition for the occurrence of a black dot as a datum, it is a constitutive part of the datum itself" (Floridi, 2004: p. 43).

Barad (2003; 2007) makes this point in her work on feminist materialism by drawing on Niels Bohr's quantum-physical 'diffraction experiment'. This, primarily thought based, experiment by Bohr was to theorise if light is particle or wave. Bohr concluded that under separate conditions light behaves as either of the two (particle/wave). Barad then argues that the principle drawn from this ontological and epistemological perspective impacts other areas of thought (the Humanities, social science, etc.) as "the nature of the observed phenomenon changes with corresponding changes in the *apparatus*" (Barad, 2007: p. 106). What emerges from this line of thought is therefore a relational ontology, where epistemology and ontology are conflated into one: 'onto-epistemology'.

As a researcher, therefore, my tools of data capture along with my self are entangled in the sociomaterial assemblages and events as a form of *apparatus* in the way that Barad contends;

my involvement in them is subsequently as important as the students'. Importantly, analysis and writing can take more time than the data collection and management; yet between these stages are crucial intermediary steps. What follows in the below table is an outline of how and at what stage my involvement in the assignments (the phenomena being explored) resulted in representational work in and through the apparatus (Barad, 2003; Barad, 2007) which provides a symbolic output that transforms pieces of matter into useable documents to make better sense of the data (Latour and Woolgar, 1986: p. 51). These transformations, and their representations, can be characteristically classified as “inscriptions” (Latour, 1987) from which can emerge a multitude – or “cascade” – of more inscriptions (ibid: p. 241) depending on how they are used and in what context by readers and users of my research. According to Latour (1999b), inscriptions refer to the “types of transformations through which an entity becomes materialized into a sign, an archive, a document, a piece of paper, a trace” (p. 306). In each of the below cases, a relationship exists between an inscription and the researched phenomena, and indicates representational work taking place:

Table 1: Data management decisions surrounding the apparatus of research.

Data management decision/work	Transformation conducted
1. Setting up of video recording	Angled webcams were placed to capture the students' movements and talk around the computers. The cameras, for their part, stay obediently mounted; the webcams show one angle of this view continuously alongside simultaneous audio recording.
2. Choosing and utilising screen recording software	<i>Blueberry Flashback Recorder</i> (for screen recordings) is powerful and affordable for installing on multiple computers. It was set to record on the students' computers at the time of the assignments, then exported to appropriate video file format shortly afterwards, with files named. This process cast a wide net to gather data for later focus and yielded a

	comprehensive view of ‘what happened’ which was later viewed, scrutinised, and broken down.
3. Screen-in-screen format adopted	To make exported <i>Flashback</i> files accessible and transportable, video quality was reduced (for economy of conversion time and storage space) and the screen-in-screen image was docked in a particular place on the screen based on a judgement of least important space on screen.
4. File conversion and management	For ease of access on multiple devices, video files were password protected and stored on Web servers (the <i>Vimeo</i> video sharing platform).
5. Video logging	<p>Selecting clips to analyse was achieved through first creating a descriptive video log (see Appendix A for examples) of each recording. In line with Flewitt (2006), descriptive and text-based video logs make complex multimodal data more accessible and allow for ease of categorisation, coding, and breakdown (‘gisting’: point 6 below).</p> <p>Avoiding the risk of a type of data saturation brought about by a potentially overwhelming amount of data, consistent with Heath et al. (2010), I decided to focus on segments of a descriptive video log varying lengths (10-30 seconds), for selection and repeated viewing. Selection of what to include in video logs and categorising practices was based on a range of concerns influenced by the research questions, observational notes, and other relevant and supporting data (e.g. interviews). I therefore looked closely at the practices which made the event. These included: 1) Moments when the learners were doing what they ‘should’ be doing versus what they ‘should not’ (see point below on ‘unacceptable use’); 2) Copy-paste strategies alongside reformulations of text; 3) Information-hunting strategies (e.g. Web-searching the assignment title for information versus asking the teacher about the same information). What was important here is a detailed account of ‘what happened’.</p>
6. Gisting	This lead me to a more detailed exploration of the video-logs. Relying initially on the screen capture video, which emerged as the most useful in tracing the choreography of the assignment writing processes, I scrutinised the recordings alongside the above logs for noteworthy and discernible

moments and patterns which addressed my research questions, followed by further insights of interest for broader research communities, and followed these up in the interview (phase 3 and discussed in ‘other data sources’ below).

Gisting here therefore begins as a general “forest-wise” (Erickson, 2006) account of what happened, aided by earlier layers of data management (e.g. ‘video logging’: point 5). This means that an overall impression (forest-wise) was initially attained of the assignment writing, through careful and repeated viewing of the recordings. Following this, noteworthy moments were further scrutinised. What was perceived as ‘noteworthy’ is framed by the concerns of the research questions, concerns of prior research and areas within my field which are in need of further problematisation (outlined in Chapter 2: Literature Review). This is illustrated with the following examples:

Through detailed and repeated viewing of the screen-in-screen recording and video logging, and drawing on the sensibility to ‘follow actors’ (human and non-human), I observed that learners readily drew from other texts to complete their work, algorithmically mediated work (e.g. Web searching), and even used non-institutional technologies to perform social acts to ultimately support their curricular tasks. Considering the assignments as a whole, I noticed that these were salient to their completion, yet as practices are themselves under-examined in the literatures or under-valued in the college culture. This lead me to deem them as ‘noteworthy’, and to later theorise their occurrence into themes emerging such as ‘digital content curation’ (see sections 5.7 and 7.6) and social networking practices (see Section 4.6). In some cases these are considered as ‘unacceptable’ (Section 4.6) practices, and in other cases unexplored enough in current literatures pertaining to literacy and technologies (see sections 2.7 and 7.6), yet appear as *crucial* strategies for successful assignment completion.

This process then brought me to a “tree-wise” (Erickson, 2006) understanding in my analysis, in which analytic attention is paid to practices and their role in the greater ‘event’. *Tree-wise* and *forest-wise* analyses sensitise researchers to the rich details of visual data alongside the broader patterns within which those very details fit, and is a basis for this kind of ethnomethodological ethnographic research.

	<p>In associated transcription files (below) and prior field notes, I then extended this process by exploring practices which were in contrast to the dominant classroom conception of what an ‘assignment’ actually is and how it is – or should be – created by the student (see Section 1.4). This relates fundamentally to the valorised schooled literacies (see Section 2.1) that the assignments are designed to assess and which are implemented by force of documents such as institutional ‘acceptable use’ policies and/or the habit of classroom procedure. These latter aspects are recorded extensively in preliminary ethnographic observation accounts of the colleges and document collection at their sites.</p> <p>It is through this analytic process that I was able to arrive at notions such as ‘digital content curation’ (theorised in sections 5.7 and 7.6) and ‘irruption’ (Chapter 7), and thus able to advance arguments through the analysis.</p>
<p>7. Digital transcript preparation</p>	<p>Subsequently, certain segments of recordings were prepared for further analysis in CAQDAS (ELAN) for transcription and manipulability (slowing down, segmentation, etc.). A folder would contain the recording from a given session to more easily triangulate with field notes, audio interviews, and still photos.</p>
<p>8. Digital transcription</p>	<p>Data transcribed in ELAN is doubtless influenced by the epistemologies of software designers, as the programme forces a particular viewing arrangement on screen. ELAN favours multimodal conventions (Bezemer and Mavers, 2011) to account for the host of interrelated behaviours, including gaze, talk around the task, and interactions with non-human agencies (e.g. Google searches). Such apparent moments of ‘silence’, in a conventional transcript, appear as key moments of ‘interaction’ in the representational system adopted here; the materiality, in a sense, has a ‘voice’, in addition to the other interactions and ‘voices’ which are represented in a traditional linguistic transcription.</p> <p>The subsequent representational system depicted in figure 5 integrates, yet separately identifies, the combinative modes of sociomaterial activity and reflects my analytic attention.</p>
<p>9. Analytic vignettes</p>	<p>Textual data from the video logs, field notes and other sources are rendered into a prose to ‘tell a story’ of how the assignments were written. Points</p>

	<p>highlighted as noteworthy in step 6 above were drawn together with the data of prior intermediary steps, mentioned above. What then seems like my personal rendition of an account of an assignment actually contains other voices, albeit mediated by me. This is a transformation through interpretation primarily related to that of writing style and ease of reading for analysis presentation purposes, and allow me to examine and reflect on the developing analysis as it unfolds.</p> <p>Vignettes, once again and through further selection and deletion, transform the data glossing some of the messiness and fuzziness of the “secret business” (c.f. Bigum et al., 2014) of what came before. The wor(l)ds of the participants have become selected and contextualised into my wor(l)ds.</p>
10. Other data sources	<p>This layer of work is about how through incorporating other data sources (e.g. ethnographic notes and interviews) I was able to generate emic conceptual understandings from them, in order to – in later stages – make arguments in oral and written presentations. It is shaped by a range of concerns including research questions, notes, and supporting data which have emerged later (e.g. interviews). Whilst preliminary understandings of the context gleaned from early stages of fieldwork and field notes directed the inquiry and is based on an ongoing form of qualitative analysis in itself, this stage of data management here is shaped iteratively and stated separately as an additional layer of ethnographic inquiry and serves to extend, complicate, and/or contradict preliminary analytic findings which can emerge early on in qualitative research. This is because at this point my hitherto analysis and insights of the participants’ interactions and practices, becomes entangled alongside other data sources such as interviews, which lead to further salient aspects emerging to then generate the impetus to further seek out such instances for research attention. For example, I was able to ask directly about practices of digital media use in daily and classroom life, and how these habits of use find their way into class work.</p> <p>What is also important to note during this process, and alongside the next stage, is that as a post-graduate student I readily presented initial aspects of my findings and ideas for further analysis to research communities via supervision meetings, blogging, conference presentations etc. This allowed</p>

	me to evaluate the reliability and validity of the data and to develop my analysis upon it by engaging in a wide dialogue to receive feedback.
11. Screenshots for presentations	Taking stills of the recordings of the screencast and ELAN transcript helps to then create a tellable story of the data, with descriptions alongside, for written and oral presentation purposes. It is a format which is accessible and (re)useable for all, and helps us to illustrate the concepts and arguments explored above. The clearer the presentation (textual and visual) of the data, the better chance of receiving feedback upon it from a stimulated audience.

Through managing the research process and conducting data collection and analysis, it becomes clear how during each step's transformation—for example, turning talk into audio files and then into transcribed digital text—a chain of inscriptions was generated. Each inscription possesses its own unique properties designed to scale, normalise, and communicate the phenomenon for a particular audience. In so doing I make the observed phenomena conform to the practices of *my* communities (PhD supervisors, thesis readers, presentation audience, etc.). Each (re)presentation inevitably involves some form of simplification, and the exclusion and addition of elements in the enacting of its new realities, in order for data to be calculable and transportable for research presentation purposes and theorisation. Inscriptions therefore contain semiotic properties and are ontologically independent of what they ostensibly represent.

Therefore as a researcher, this kind of 'reflexivity' holds that I remain entangled in the researched phenomena in concert with the wider sociomaterial assemblage of other persons, texts, software, hardware, etc. Reflexivity in the social sciences has usually referred to the process of paying analytical attention to the position, cultural location, and *a priori* knowledge of the researcher/author as one of the bases of knowledge in the study being undertaken. In this way, its aim is to avoid a kind of epistemic over-reach. This notion of reflexivity,

according to Barad (2007), is “founded on representationalism” and:

takes for granted the idea that representations reflect (social or natural) reality. That is, reflexivity is based on the belief that practices of representing have no effect on the objects of investigation and that we have a kind of access to representations that we don't have to the objects themselves.

(Barad, 2007: p. 87)

A salient example of how researchers' processes of data creation and management are crucial to ultimately understanding the researched phenomenon is discussed in Latour's (1999b) account of research carried out at a site within the Amazon forest. Following his previous work on *Science in Action* (Latour, 1987), he pays close attention to the scientific work of a botanist, a pedologist, and a geographer. The standardisation of the researchers' step-by-step inscriptions of field data, the forest's soil, tree and flower samples, etc., form accessible charts, tables, and graphs which in turn link to prior research:

Here, even the walls become part of the multiple crisscrossed lines of the chart where the plants find a place that belongs to them within the taxonomy that has been standardised for many centuries. Space becomes a table chart, the table chart becomes a cabinet, the cabinet becomes a concept, and the concept becomes an institution.

(Latour, 1999b: p. 36)

Therefore, from the outset (driving to the site and setting up) to the present (publishing screenshots of recordings and vignettes) of this investigation, I engaged in a number of activities that transformed what I came to call the 'digital literacy event' into something else. In the subsequent data collection, management and analyses, I made decisions which 'reassembled' the assignments to take into account matters pertinent to my research questions, including 1) elements of classroom digital literacies which do not cohere with the dominant ontology of the 'assignment, and 2) how these contribute to the messiness and non-linearity

of what is interpreted as student 'work'. My inquiry and intervention, therefore, need to be thought of as an onto-epistemological entanglement.

A discussion of how the methodology presented in this PhD study informs research on digital literacy and educational technology is presented in Chapter 7 Section 7.5 of this thesis. This methodology, I argue, contributes to an emerging, revolutionary, and inter-disciplinary scholarly conversation around 'digital methods' in social and educational research (e.g. Snee et al., forthcoming).

3.11 Research strategy

3.11.1 Case-study as a strategy

Following the methodological discussion in earlier sections of this chapter, this section outlines the research strategy deployed in this PhD study. As already mentioned above, this study adopts a multiple case-study design with methodological and theoretical influences drawn from sociomateriality, ethnomethodology and ethnography/praxiography (c.f. Mol, 2002). What follows below is a more detailed explanation of the rationale for my chosen research strategy, and the ways in which 'case-study' as a social research method, and epistemology, has been utilised here in this PhD study.

The term 'case-study', in social research, can take a number of different shades of meaning and interpretations. These can include such interpretations of case-study as research 'strategy' (e.g. Eisenhardt, 1989), an 'approach' (e.g. Denscombe, 2010), a research 'methodology' (e.g. Yin, 2009), and research 'method' (e.g. Dyer and Wilkins, 1991). These differences are not paradigm specific, and draw from a range of philosophical underpinnings and research approaches (positivist, interpretative, etc.). The decision to adopt a case-study strategy in this

PhD study is based on Dyer and Wilkins's (1991) injunction for social researchers to "create an exemplar, that is, a story against which researchers can compare their experience and gain rich theoretical insights" (Dyer and Wilkins, 1991: p. 613). Whilst Dyer and Wilkins were advocating the 'classic' case-study method which favours in depth *single* case research, their thesis is more about cases which are characteristic of common practice in a given setting, and which require a rich account of its ephemerality, and thereby likely to escape quantitative approaches, in order to attain a more profound harvest. According to Simons (1996):

case study research is needed now more than ever before to challenge orthodox thinking, to get beneath the surface of policy implementation to reveal in-depth understanding and, most importantly, to take a quantum leap in how we come to understand complex educational situations.

(Simons, 1996: p. 231)

In this vein, Denscombe (2010) points out that qualitative case-study research emphasises a certain kind of depth over breadth, permits a flexibility of methods within a case rather than a singular method, and is focussed on the particular over the general at a site of analytic interest. Therefore, case-studies lead to a uniquely different form of generalisability; one which is gleaned from the dialectical process of theory generation between the issues identified as salient before the research, and emergent findings in the data during the research. This, Yin argues, is an "analytic generalization" (Yin, 2009: p. 39), countering the arguments of some that qualitative case-study research is 'non-scientific' on its own. In order for effective analytic generalisations to be yielded, multiple sources of data, within one case and multiple cases within one study, need to be drawn from (Yin, 2009). Doing this allows for comparison of perspectives within and across cases all as part of the same research study, and to stimulate the researcher to get beneath the surface of what is really happening in the researched phenomena and make cross-case assertions (Stake, 2006). In this way, the accumulative knowledge gained from cases, even purely descriptive phenomenological studies of everyday situations, can be a legitimate form of scientific enquiry (Flyvbjerg,

2006). These kinds of case-studies are not merely anecdotal; rather, when everyday practice is explored (as in research based on ethnomethodology: see Section 3.4), insights into how social order is produced are gained.

Seen in this way can allow for commonality across multiple cases and bind them allowing for an overall cross-cases analysis, the kind of which is presented in Chapter 7. The three cases here are also individually conducted and analysed separately allowing for their distinct features and uniqueness to emerge and to be theorised in their own right. Therefore, a multiple case-study strategy has dual benefits: the cases can be cross-examined for fuller analysis, and also individually represented and worthy of single-case status.

In this respect, there can also be a tension and a type of ‘trade-off’ between an analysis which focusses on the patterns of practices across the multiple cases and the richness and individuality of each case on its own merit. The kinds of sociological accounts attempted here in this study is designed to inspire a ‘thick description’ of the assemblages studied, of the interplay, contestations, and associations between different actors involved in the writing of assignments. In order to achieve this, a certain kind of proximity is necessary, as Flyvberg (2006) argues:

For researchers, the closeness of the case study to real-life situations and its multiple wealth of details are important in two respects. First, it is important for the development of a nuanced view of reality, including the view that human behavior cannot be meaningfully understood as simply the rule-governed acts found at the lowest levels of the learning process and in much theory. Second, cases are important for researchers’ own learning processes in developing the skills needed to do good research.

(Flyvberg, 2006: p. 223)

My aim therefore in adopting a case-study strategy is to achieve a closeness with the context-specific practices of assignment writing in FE classrooms, and produce a detailed story of their systematic production.

3.11.2 A multiple case-study approach for this PhD study

When it came, subsequently, to choosing cases for this study, a number of extrinsic characteristics needed to be common across all of them which were pertinent to the interests of the research inquiry. For example: each student is studying a vocationally-related course in a FE college; each assignment is completed during class time and on college premises (with normative institutional policies on digital media being enforced at the time of writing); each assignment being written also draws extensively on Web-based research activities and digital media usage on the part of the student. In this respect my decisions were based on the principles of “information-oriented selection” (Flyvbjerg, 2006: p. 230) which entailed that I attempted to maximise the utility and diversity of information from the cases due to their unique differences but retaining the contextual commonality mentioned above. Cases were selected on the basis of expectations about their information content.

The kinds of depth trialled in the pilot study lead me to choose three separate cases studies as a suitable number for this PhD study, as part of a developmental case-study design. The chief benefit of investigating this type of case-study is that its micro-scope focus of, in my case here, an assignment writing scenario, allows for a multi-method approach to data collection. If then set against other cases, permits a complementation and a type of triangulation which will inspire a valid and emerging “thick description” (Geertz, 1973) of learners’ digital literacy practices during assignment writing.

The presentations of the cases in the next part of the thesis begin with accounts of the background to the colleges, the courses, and the learners. In each of the cases I have attempted to follow actors and trace associations as the assignments unfolded. My deciding what to

foreground and what to leave out in the analyses is based upon this principle and method. In so doing, the cases to an extent follow their own logic in terms of structure and retain their own individual character as I attempt to highlight the salient interactions and actors that emerge in specific circumstances. These analytic choices can lead to ‘fine-grained’ analysis at times (see Section 3.7.4), and at other times a broader discussion of the contextual forces at play.

If insights emerge during the recording (phase 2) which can be further illuminated from the interview (phase 3), then interview and diagram elements have been integrated into that particular component of the case-study account. This has resulted in occasional instances in the case-study accounts where interview data emerges early on to add value and elaboration to particular digital literacy practices which emerged as salient in the assignments at a particular moment in its completion, and other instances where it is discussed at the end of an account to provide a broader picture of learners’ practices.

3.12 Concluding remarks

The immediate scenes of analytic interest for the cases in this research are UK college classrooms. These are Woodale College, and two separate campuses and centres of Abbeydale College. The goal in each case is a course assignment that needs to be completed by a student and submitted for assessment as part of a portfolio of their coursework. My task in this research, and in presenting the accounts of the case-studies, is part ethnomethodological (Garfinkel, 1967) and part praxiographic (Mol, 2003).

The unit of analysis I have employed is based on the notion of a ‘literacy event’ (Heath, 1983). These events are conceptualised as unfolding sociomaterial assemblages, are instantiated by the mobilisation of ‘digital literacy practices’, which are also likely to extend beyond the

confines of the classroom temporally and spatially. This added theoretical dimension problematises the established notion of the ‘event’, in this case the writing of assignments, as not conforming to the practices of a ‘here and now’ reality.

My analysis in the coming chapters therefore attends to the choreography of the practices drawn into the assignments: how they got written, their trajectory from apparent start to finish, the sociomaterial work that went into them and the ecology of practices (their impasses, breakthroughs, surreptitious workarounds, and bricolage). The focus is on how sociomaterial relations are assembled and their realities done, part of which involves problematising the impact of cyberspace in the classroom as students write their assignments using whatever digital media is at their disposal. The notion of ‘practices all the way down’ echoes Leibniz’s *monadology* and Law (2012) provides a useful set of techniques when exploring them (as outlined in Chapter 2 Section 2.5.3).

The “gaps ... aporias and the tensions between the practices” (Law, 2012: p. 171) are key to any understanding of the disparate and sometimes contesting realities (and practices) at play in the writing of assignments and tracing their trajectories. Law (2012) refers to these fractal and disparate elements that make up what appear to be a coherent ‘real’ as “collateral realities”, which emerge through the minutiae of practices in a given event. As well as being collateral, if we trace their trajectory further, such events have the potential to be ontologically multiple (Mol, 1999; Mol, 2002), instantiated by a bricolage (Lévi-Strauss, 1966) of practices, as part of the students’ writing tactics: practices within practices each enacting different realities and a different version of the assignment.

What follows, therefore, is an attempt at developing an ‘empirical ontology’ of three assignments, each of which is completed in a site where fractal (or ‘collateral’) realities are produced and drawn from in its creation: formal curricular literacy practices, professional,

personal/social, friendship-based, etc. These may not necessarily exist in a coherent way, despite their ostensible connection; some may be capricious, stealthily done, others rehearsed behaviours or technological workarounds. The issue in an ANT-informed account is how are these practices are *enacted* and how they *interact* with each other. The coming stories of the practices of the assignments therefore emerges from the Latourian injunction to *follow actors* as they make their own worlds.

Part II

Chapter 4: Case-study 1 ‘Sara’

4.1 Introduction

Abbeydale College is a large general further education (FE) college located in a densely populated and large multicultural city of West Yorkshire (UK). According to an inspection report published two years before the research was carried out, the college has over 19,000 enrolled students of whom around 3,000 are 16-18 years. Over half of this particular age group are enrolled as full-time students, with 31% describing themselves as belonging to a minority ethnic group and 61% from socially deprived areas of the region. This diversity remains a distinctive feature of this college’s provision and social identity as it explicitly remains committed to widening participation and recruitment from under-represented groups within its constituency.

Notably, about one-third of the college’s provision is for higher education (HE) courses as it recruits nationally to its growing HE provision and receives a proportionately higher level of funding for this from the Higher Education Funding Council for England (HEFCE) compared to other FE colleges. In terms of institutional ICT usage, the college has received overall positive inspection reviews in relation to its digital media facilities, VLE platform adoption, and engagement with students. This has been particularly positive in the college campus in which this first case-study is based (the School of Teaching, Health and Care). Inspection feedback about VLE use has been quite positive but limited, with most positive comments restricted to its use by staff for disseminating resources and student discussions.

4.2 The course

The course selected for the first case-study was the CACHE (Council for Award in Children’s Care and Education) Level 3 certificate in Childcare. The course was selected for its vocational nature, its learner age group (18-22 years), and its constituent writing project

activities, the bulk of which are completed in classroom-based workshops. The course was designed to prepare students with the knowledge and skills they require when working with children and young people, especially those who wish to work in the 'Early Years and Foundation Stage' (EYFS) sector in any occupational capacity.

Course components include practical and taught sessions, assessment by regular assignments that meet specific CACHE criteria (such as the one recorded and explored for this case-study), observations, and work placements. Students are also expected to participate in enrichment activities which form part of the course's supportive activities, such as 'drugs awareness' and fundraising for children's charities. These are seen as external to the course but essential elements of child care as a vocation, and part of the broader preparations for being a childcare specialist.

The following vignette is drawn from some field notes of an observation of the site, as I was getting to know the college, the course, and the culture of digital media use at a more general institutional level. As I entered the classroom for the first time, I was taken by the classroom wall displays which were predominantly print-rich, but with one fascinating technological exception:

The classroom is a print-rich environment with displays of issues/topics related to the course (childcare ethics, disability, leaflets on contraception as part of 'functional skills English' work, and a display of what a 'perfect student' should be like). There are also what look like dolls on display. These dolls are offered to level 2 students of the same course in order for them to take home and, through their use, learn the basics of childcare. These dolls are called 'virtual babies', and are sophisticated doll-like machines that cry and even defecate, and which the level 2 students must take home and 'look after' as if they are actual babies. This is to test their abilities to change nappies and tend to crying, etc. and also for them to have a taste of the kind of activities this line of work could entail.

At a later point I ask staff about ICT-related documentation (policies, etc.), and the teacher hands two documents over to me which she says I will be interested in. She hasn't read them properly herself, but she is convinced that they are what I am looking for. These are the colleges 'ICT acceptable use policy' and the 'Staff digital communications policy'. I am interested in knowing the extent to which they are adopted and adhered to by staff and, more importantly, the students. One of the documents clearly states that it is for staff use in relation to their Web-based interactions with students; yet the teacher has mentioned that she has not even read the document, or has merely skimmed over it at best. This is despite it being issued to her nearly a year ago. She also mentioned to me that one tutor was suspended recently for disparaging the College in a Facebook status update. Such actions are clearly stated as warranting disciplinary proceedings in the policy.

Both the students and the teachers of the college are encouraged to use ICTs for course-related activities, but their use is strictly dictated by a *staff digital communications policy* and an *ICT Acceptable Use Policy* which together spell out the purpose, scope and guidance for using digital media at –and for– the college. It provides predominantly safety guidance on the ‘phenomenal explosion’ of social media such as Facebook in everyday use, how to best appropriate its use for learning and teaching, and rules of use. Practices around the *Acceptable Use Policy* emerge later as salient in the writing of the assignment.



Figure 7: 'Virtual Babies' on display, offered to level 2 CACHE students

During initial observations of the class, I noticed that the sessions are divided into two parts: part 1 (1:30pm – 2:45pm) is a teacher-led session with her outlining and elaborating on assessment criteria and their application in a vocational setting of an EYFS practitioner. This is followed by a second session immediately after an interval break (2:45pm – 4:45pm) where the students have a lot more freedom to get on with written assignment work and projects. This is usually independent laptop facilitated work where assignments get written and the teacher moves around the room monitoring and helping individually. This is borne out in the vignette below, which is drawn from field notes of a classroom observation:

An initial, largely teacher-led, lesson lasts for around sixty minutes. This is followed by a two-hour writing workshop in which the learners work largely autonomously, on their ongoing assignments which must meet the criteria of the unit as set out in the hand-out and displayed on the whiteboard. The session I am observing focusses specifically on child protection policies and procedures.

This writing session is immediately after an interval break (2:45pm – 4:45pm) where the students have a lot more freedom to get on with written assignment work and projects. This is usually independent

laptop facilitated work where assignments get written and the teacher moves around the room monitoring and helping individually. A special trolley (known and referred to by staff and students as “the trolley”) which collectively holds, charges, and stores laptops is wheeled in during the break. A unique feature of this component of the lessons is that as soon as the trolley is pushed in and set up the whole atmosphere in the room changes, and such things as personal devices (phones, mp3 players, etc.) and the listening of music become permitted. Headphones seem to be plugged in. I assume it is music that is being listened to.

All the students get up and collect their laptops from the trolley, set up at their desks, and begin the staccato ‘pitter patter’ upon logging on, etc. This second part of the lesson brings a change in tempo, noise, talk, with the teacher monitoring and discussing more individually as she spends the entire time moving around the room. Some students are not talking at all, just typing and getting on with it. More talk around the topic and more talk on any topic including on boyfriends is going on. It seems the switch from the first component of the lesson has brought an entire shift in the mood, manner, and method of the class in the second session.

A definite and marked change of pace occurs in this writing session, compared to more lecture-like session before it. The deployment of the laptops (which are wheeled in on ‘the trolley’: see figure 8) in the second, writing-focussed, session brings with it the sudden permitted use of their smaller ‘cousins’ in the world of materiality: SMART phones, mp3 players, iPods, etc. The listening of music and other practices through them raises the question of what, precisely, is ‘off-task’ and ‘on-task’ in Sara and her peers’ classroom activities.

It is important to note that personal devices, especially when they are used in this way, are ordinarily forbidden by the acceptable use policy and general institutional culture. This norm was diligently abided by in the lecture-like session earlier. But a host of digital literacy practices have now entered the scene, and the sociomaterial work (and ‘assemblage’) of the assignment as its writing begins to unfold is radically different in manner to the kind of work

which occurred before the interim break. The wheeling in of the laptop trolley is a symbolic shift in mode, method, and culture. It is an actant which acts as a hub to connect the classroom and the work carried out within it to a multitude of other actants that are now able to *irrupt* into the scene (see Chapter 7 Section 7.2 for more on ‘irruption’ in light of other examples from the cases).



Figure 8: An ICT support person brings in ‘the trolley’ with laptops charged and ready to use

Sara’s digital literacy practices also include such things as utilising stored files on a pen drive and efficiently mobilising meticulously archived previous work into purposeful use, as will be explained later in this chapter. Sara’s also usage of additional digital artefacts, for other purposes, extends the sociomaterial assemblage into multiple spatial realms. I will discuss specific aspects of these practices in the coming sections below.

4.3 Sara’s assignment

In this account, the assignment begins as a series of bullet points on the whiteboard which displays a simplified version of the CACHE criteria issued in the previous session. This is a

version of another version of the particular criterion to be covered in this assignment (criterion E6, see vignette below and figure 10). Although the life of the assignment stretches as far back as when the criterion was written, most likely by CACHE item writers and childcare specialists. Prior to that it was drawn from other texts, locations, and experiences. But in the 'here and now' of the digital literacy event and for the purposes of this doctoral thesis chapter, Sara copies the contents of the text of the display into her notebook. This is a continuation of her practice of taking notes from the previous session, and asking questions throughout it. In the below account we see how she then draws from these various elements, and others, to commence and accomplish the writing of her assignment.

In the vignette below, which is drawn from the video log of the recording, Sara begins writing the assignment immediately upon being seated. But, with an almost perfunctory automation she sits, pulls out her USB flash drive, plugs it in, and opens up previous work:

The session begins when all the students enter the classroom, having just had their break. The teacher announces: "ladies, bags off the tables". They are quite chatty at this point, and setting themselves up for the writing session.

The current unit on the syllabus they are covering in the class is unit 18, and the criterion to be covered is E6 (Child Protection Policies). But instead of carefully reading the text of the unit, without a moment's hesitation Sara opens the assignment from the previous unit criterion (E5). USB drives get plugged in, files/folders located and opened (folders: Cache ChildCare and Education > Childcare 2nd Year > Unit 18 > E5 > filename: 'working with babies from birth to 12 months'. These are well organised folders and files mobilised immediately and perfunctorily into action.

She highlights most of the text of this previous assignment (which in its entirety is only one page), deletes it, and saves the file as 'E6' within the same folder of collected work. But she keeps the title of the previous text. The writing of the new assignment has begun.

Without a moment's hesitation Sara opens the assignment from a previous unit criterion (E5) as a basis upon which to begin her work. What is written subsequently by Sara is her own synthesis and interpretation of the two criteria. The previous assignment, as shall be discussed later, is an important part of this assemblage. Its font, layout, etc. are all a validation upon which to begin the new assignment. Previous work plays an important role in Sara's overall writing strategy for it. But in observing how the assignment takes its overall shape, analysis reveals an *ad hoc* use of material artefacts available to hand, as well interactions with other actors; ones that are not always in situ – a sociomaterial assemblage extended into multiple spatial and temporal realms constituting of elements which include:

- Dictates of a college policy, distributed to all staff and students upon induction, which spells out and limits the purpose and scope for using digital media at the college. In this policy, 'social' and 'non-educational chat' considered as 'unacceptable' activities;
- Interactions with online resources: school and government websites, personal social networking ties, and Google search suggestions;
- Capricious violations of the college policy, including contact with friends through social networking, some of which was nonetheless assignment-related;
- The utilisation of previous assignments as a template upon which to begin the current task, and reformulating text extracts from them.

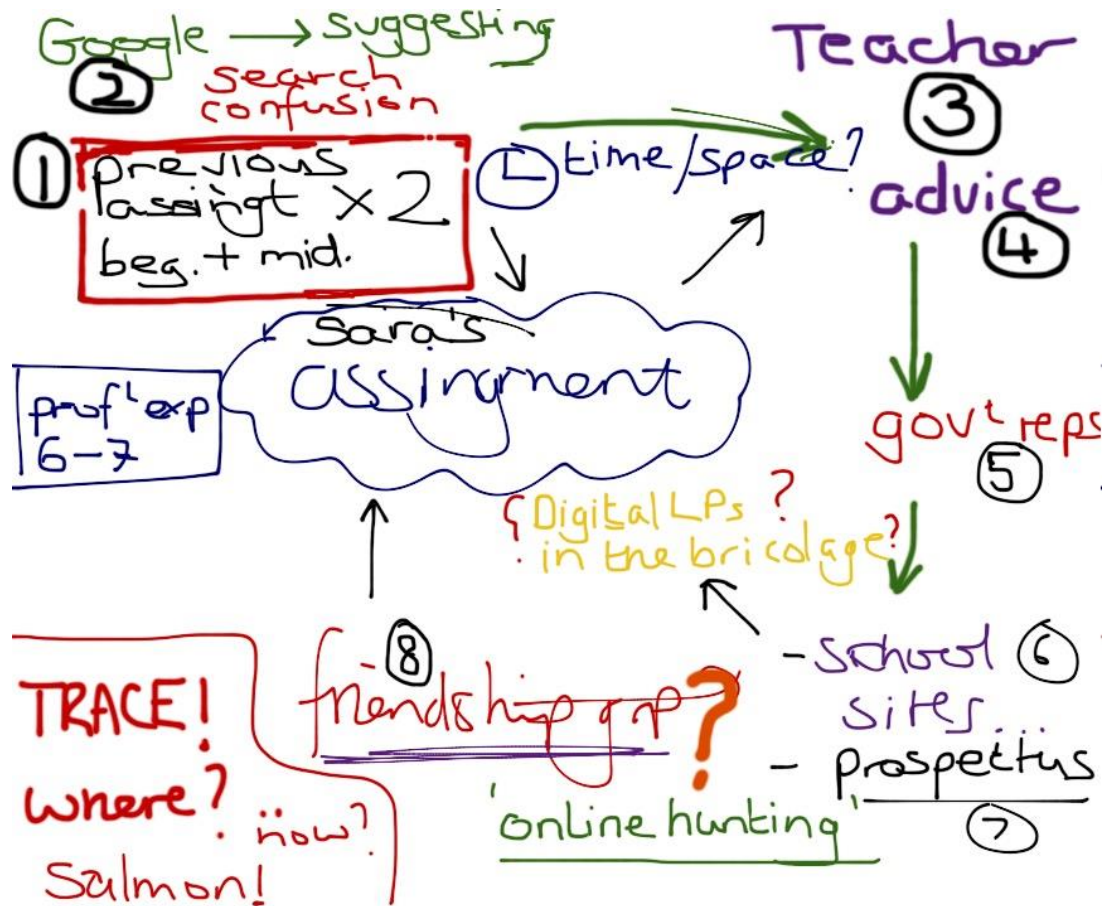


Figure 9: Diagram of Sara's assignment

These elements contributing to the assignment's construction are depicted in Figure 9. This diagram was drawn by me whilst at the site of research (as part of field notes) and shows the various factors that were part of Sara's endeavour to garner information for her writing. All of these things and more, as seen in the various vignettes in this chapter, were part of Sara's endeavour to garner information for her writing. These aspects are outlined and discussed further in the coming sections as Sara 'assembles' her assignment.

4.4 Assembling the assignment

In the recording of the assignment, we see the 'digital literacy event' beginning as a set of instructions for an assignment which is issued by the teacher and elaborated upon extensively in the previous session. The whiteboard display has remained up as the students have their

interim break before the writing workshop. These instructions are then transmitted by means of the teacher’s verbal instructions, her notes on the whiteboard in the lecture preceding the writing session, and the outline of the unit criterion relating to this assignment. The criterion being written about is E6: *Show how the child protection policy and procedures in the setting protect and safeguard the babies* (see figure 10).

Unit 18 – Working with babies from birth to 12 months		
Criteria	Grading Criteria	Guidance
E1	Summarise the factors which may influence the health and development of babies in the first year of their lives.	The main factors that affect the health and development of babies in the first year of life. This may include: physical/emotional/social/economic/ environmental factors, parenting styles, surveillance programmes, health promotion, legislation.....
E2	Describe how indoor and outdoor environments for babies can be made safe, reassuring and stimulating	Write about what needs to be considered and provided in the setting so babies are safe, stimulated and feel reassured in their environment. This may include: relevant policies and procedures, attractive, reflects those that use it, indoors/ outdoors provision, age/stage equipment/resources.....
E3	Describe the expected stage of development of babies at the chosen age and how they may be expected to develop in the next two months of life	State the chosen age group. Give information about the expected stage of overall development and identify changes which can be usually be expected in the next two months.
E4	Explain how TWO different play activities/experiences can support the overall development of the baby described in E3	Write about two play opportunities which are developmentally appropriate for the baby described in E3. These may include everyday experiences such as bath time or play activities. Identify how the overall development of the baby is helped by each experience/activity.
E5	Describe the role of the practitioner in meeting the particular needs of babies in the chosen type of setting (group care OR home - based care)	Give information about the responsibilities of the practitioner in EITHER group care OR home-based care. Responsibilities should relate to the chosen care setting and could include: establishing relationships with baby and parents, identifying and planning to meet baby’s holistic needs, observation and recording of development, supervision, resources/equipment, routines, other children.....
E6	Show how the child protection policies and procedures in the setting protect and safeguard the babies	Information about how child protection policies and procedures of the setting protect babies. This may include: observation/recording/reporting, recognising signs of abuse, confidentiality, rights of child, welfare of child, work with parents, teamwork.....
E7	Explain the importance of well planned care routines and the key worker system	Give reasons why well planned care routines and the key worker system benefit babies in early year’s settings. This may include: links with home, individual needs identified/met, security and consistency, babies learn to predict what is to happen, overall development and learning, relationships with parents, shared information, confidence and trust.....

Figure 10: The unit criteria covered for the CACHE Certificate in Childcare

In the vignette below, taken from the video log of the recording, Sara is asking lots of questions about the assignment. These questions are directed to her immediate classmates primarily, and to the teacher. The questions concern the content of the assignment (the *Children’s Act 1989*) and how they relate to the criteria, but her motives for asking are to ascertain the extent to which this content relates to the content of *previous* work. This is an important part of her strategies for tackling this assignment task and indicated in the previous vignette, and also here:

A quarter of an hour into the assignment, Sara is discussing its contents a lot, repeating the same question she asked the teacher, to her friends

beside her. There is a lot of guesswork and working out of what is required, as if that too is part of the overall assignment task. She discusses the contents of the legislation e.g. "Children's Act 1989" with Lauren [the student beside her]. Lauren says that she will "copy and paste" it, "cos it's our own words anyway, it's not like we copied from somewhere else...". The teacher hears this, and walks over to ask if anyone on the table needs any help.

Sara now opens up another previous assignment, one which related to unit 4 (we are now at unit 18), as this contains previous work on the Children's Act 1989. They are instructed to "not just copy and paste", and that this criterion only carries 5 marks and that they just need to mention the main legislation acts (e.g. The Children's Act). This is because Sara and Lauren are not sure how many and which policies, acts etc. they are supposed to write about. The teacher clarifies that it is the 'settings' which dictate this, i.e. where they have worked before or done their work placement.

Nevertheless there is some sort of an understanding between Sara and Lauren that they have discovered a 'short-cut' method of getting the assignment done. This leads to a swift movement between files already open in different windows on her laptop, judiciously stored previous work through Sara's meticulous and personal digital archiving allows her to open her files, move between them, and inter-weave the contents of a previous assignment into the current file. She does this whilst discussing 'henna' styles with Lauren.

She stops typing, and pauses upon mentioning the 'six areas of development' of the 'EYFS' (Early Years Foundations Stage), and then refers to Google.

Previous work serves an important role for Sara throughout writing this assignment, and we can draw on the notion of 'collateral realities' too better understand this. Sara draws on practices from a previous time, a different place and with a different intention – and their collateral realities; these realities also extend beyond the immediate temporal domain of her present, and into the past as she mobilises previous work into purposeful (re)use here. When

she considers how to approach the assignment and to understand what is expected of her, she thinks back and refers to the regulations and patterns that have informed her previous work – her previous assignment. This provides Sara with validation of how to work in the present: outlining the font to be used, stylistic considerations (headings, title, etc.), the appropriate style and the length of the piece.

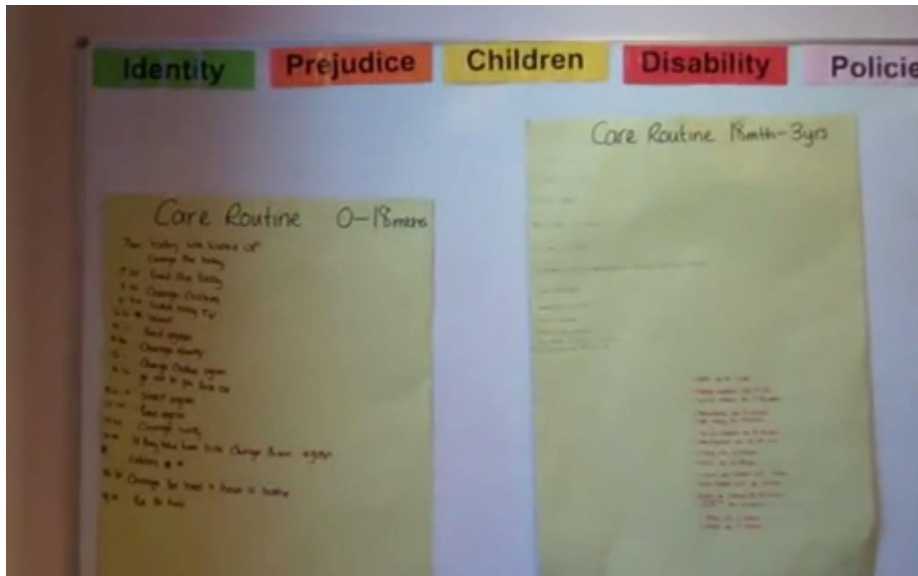


Figure 11: A classroom display reminds learners how issues such as identity, disability, etc. interface with work in childcare

This is something which occurs throughout the writing of the assignment, as Sara relies on her documents of previous work carefully organised and archived on her pen drive. Issues related to *policies, disability, identity*, etc. are recurring themes in this kind of work (see figure 11) and have emerged repeatedly in previous work. These topics are displayed on the board to remind learners of how they interface with the work of childcare. Previously written content related to these recurring themes is often retained in past assignments meticulously kept by Sara, and mobilised into action in this digital literacy event. The life of one literacy event, therefore, segues into another. This is, as she testifies later in the interview, a type of rehearsed behaviour, and part of her writing tactics. She is drawing on realities beyond her immediate practice, by informing her present situation with her own experience of acceptable prior

practices, extending the digital literacy event through temporal domains. This practice of drawing on previous work as a validation occurred throughout the writing of the assignment, and is further substantiated when she is asked about it in the interview. We were watching the recording as we spoke:

Ibrar: Did you get stuff from a previous assignment?

Sara: First when I started writing I was just blank coz the way she was explaining, like, you need to include different settings and that.

Ibrar: Ok

Sara: But later on when I looked into it and then when I looked back on the work then I clicked on that and knew what to do coz I'd done it previously.

Ibrar: So you knew something about this topic but you needed to get some background?

Sara: Yeah ...

Ibrar: How else did you get that background, from Google?

Sara: Yeah

Ibrar: Did you have an outline in your head of how you're going to do it?
... Or did it just slightly develop?

Sara: Just slightly developed as I went on ...

As Law (2012) notes, both the act of note-taking, giving a talk, and writing down a version of that talk create and describe different “putative realities”: the reality of ‘the assignment’ as understood and created by the teacher; the simplified version on the whiteboard which creates a new reality through the exclusion of a number of elements; and the reality of the reinterpretation, which exists and evolves on Sara’s screen. Each retransmission of the idea, by what it includes and excludes about the task, and how the task relates to the end purpose

of aim of meeting criterion E6 for the assignment, are enacting multiple versions of what, if we approached the matter from a representationalist perspective, appear to be the same (or a singular) thing, i.e. the doing of the assignment. Yet, all of these elements are actor-networks informing and creating their own collateral realities which are, in turn, combining and working with the other elements (actor-networks) of the classroom, and instantiated by a range of digital literacy practices. I will return to how my analysis is illuminated by non-representationalist thought in later parts of the thesis (Chapter 7).

Fifteen minutes into the session, Sara is still considering ways of how to integrate the contents of previous assignment/s into the current one. She opens a group of files and, as a tactic, scrolls through them discussing with Lauren what particular aspects of the previous files (on ‘legislation’ and ‘policies and practices’) relate to the work that needs to be done, and which aspects do not, and the amount of marks allocated. The requirements of the current assignment, at this stage, are being negotiated with the criterion, previous criteria, a previous assignment, Sara and Lauren’s prior knowledge, and guesswork between all of these elements.

Immediately prior to this Sara was busy figuring out what is required of her and asking the teacher and her immediate peer (Lauren). There is an obvious task here to be completed: an assignment. But there remain a multitude of other subsidiary tasks contained within it: to search the Web for certain Children’s Act policies, to synthesise the way these policies have been implemented in the ‘setting’ (where Sara did her placement), etc. Some of this is guesswork.

Guesswork of various sorts remains a constant theme during this process. Sara’s guessing what the teacher’s instructions entail for her, to guess what the teacher interprets from the criteria, and guessing how her setting would implement the legislation. Perhaps the teacher is

also guessing in how the assessment criteria should be addressed in her envisaged reality of the assignment, and how it is to be written (based on her previous experience). Perhaps the writers of the criteria also made guesses about the kinds of things to include in their assessment of this specialist vocational area.

Nevertheless, for Sara, to ‘copy and paste’ (i.e. from previous assignments) then becomes a suggested strategy from the student sitting next to her (Lauren). The tactics emerging therefore are both explicitly stated (such as the teacher’s instruction to Web search) and also implicit and muttered under the breath of Lauren (“just copy and paste cos it’s our own words anyway”).

4.5 Garnering information

Sara needed to garner information for her writing. We have already looked at a few sources she makes use of in order to achieve this, for example the teacher, her notes, her classmate, etc. In the vignette below, drawn from the video log, she invokes another actant for assistance:

Twenty minutes into the assignment, Sara refers to Google for details about some legislation which she needs to include in her assignment. As she types “child protection...” the algorithm’s auto-complete stops her mid-word to suggest the following:

child protection act

child protection policy

child protection plan

child protection training

child protection register

child protection procedures

Although this is not the first time the algorithm has spoken back to her,

on this occasion she pauses at the auto-complete and is stumbled, confused about what it actually is that she is looking for. She turns to Lauren to say “there it is, look, child protection act”. The teacher intervenes to clarify that “child protection” is the name of the policy, which is contained within the “children’s act”, and that there is no such “children’s act” at least within the UK.

Sara’s confusion lies in a “child protection act 1999” which she has seen and been reading about online, courtesy of the direct help of Google’s suggestions. Unbeknownst to her (yet), this piece of legislation is from Australia. This is clarified eventually as the teacher comes over to provide an explanation.

The teacher tells them about how, for the assignment, they need to explicate the policies as understood and implemented by their settings, i.e. where they worked (or did their work experience), and that they should use work-based documentation as the source. The policies for Sara’s setting are stored on the school’s website. But she decides to contact a friend on her phone (via Facebook) to check about this.

During the assignment writing, Sara used the Google search engine to search for information to include in her work. As she types into the search box, the search engine, in turn, suggests results based on Google’s powerful and complex algorithm called *PageRank*. This algorithm, as an actant, is organised by software engineers far removed from Sara’s classroom (San Jose, California); yet it has intruded, or *irrupted* (see Chapter 7 Section 7.2), into the classroom space and brought with it a whole new set of implications – and digital literacy practices – for this emerging assemblage. The algorithm is a continuously developing⁴ artificial intelligence programme which works by assigning a numerical weighting to linked sets of documents in the Web.

⁴ Google has a budget for artificial intelligence research in excess of \$24 billion.



Figure 12: A diagrammatic depiction of PageRank's linking system (source: Wikipedia, 2014)

For example, in the above graphic (figure 12) taken from Wikipedia (2014), the size of each face is proportional to the total size of the other faces which are pointing (i.e. linked) to it. Google therefore gives more credence in its search results to sites that are often linked to by influential sites, known as 'hubs'. This is part of the calculus which drives PageRank, and subsequently the drive to reach the top of the search results for Websites and marketing companies (Steiner, 2012). Its intrusion here has implications on many levels for Sara's work. Sara's choices as she navigates the interface of the search results (figure 13) are doubtless influenced by the calculus of PageRank and the agencies, financial and otherwise, which position one link above another in the list.

Sara spends a great deal of time hunting for information in this way online, and in every case there are links thrown up at her in the search results. This is the intervention of the algorithm in working out what it 'thinks' she wants or should be viewing. She often clicks the first link offered, but not always, passing through Web pages belonging to the 'Department for Education'. She later tries with the search terms "child protection ..." until she is interrupted again by the algorithm. This interruption is shown in figure 13, in which we see Sara, Lauren, the teacher, and Google differing over the issue of "child protection..." for this assignment.

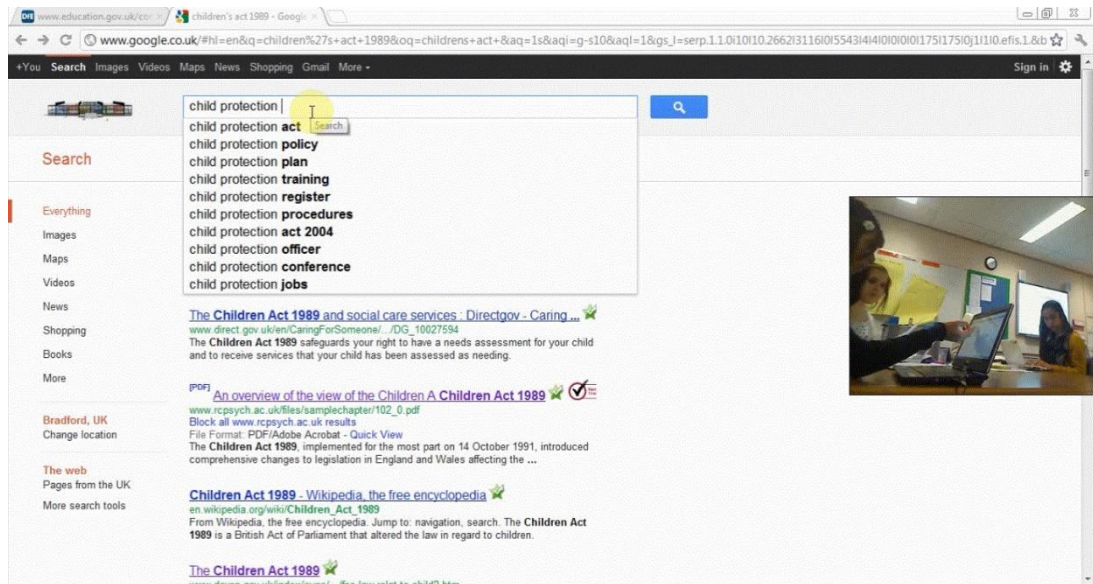


Figure 13: Sara, Lauren, the teacher, and Google differ on ‘child protection..’

Sara’s confusion in the previous vignette lay in the search for a “child protection act 1999” which she has been directed to via Google, only to be told that Google’s suggestion is incorrect as it shows legislation from another country and subsequently not relevant to her assignment. The teacher then tells them about how, for the assignment, they need to explicate the policies as understood and implemented by their *settings*, i.e. where they worked (or did their work experience), and that they should use work-based documentation as the source. The policies for Sara’s setting are stored on the school’s website. She is then directed by the teacher to access those Web sites, but Sara has another option in mind at the end of the vignette, another one of her short cut strategies in getting this work done (see Section 4.6). But for now, the algorithm’s interruptions deserve some more scrutiny in this section.

The algorithm’s interruptions and suggestions lead her far away from her original task, and the teacher was forced to intervene and get her on task again. Thus, the programming behind an algorithm is a crucial part of the assemblage as it interacts with the multiple written and oral realities of the other parts of the event’s assemblage: the teacher’s instructions (both oral and written), the friend’s advice, the acceptable use policy, the previous assignment, etc. Sara receives a clarification as to what she needs to look for, but no less than forty minutes in to

the task duration.

Another way of looking at the Google algorithm's interruption is as part of an interaction. In the multimodal transcript excerpt using ELAN below, we can see a clip of data showing Sara's interactions with Google whilst Web searching in a slightly different way to how it has been described already. Upon repeated viewing of the data clip, slowed down and expanded by the transcription of gesture and bodily movement, we observe that pauses occur between turns during Web searching and the ensuing discussion about class work, depicted by the ↴ symbol.

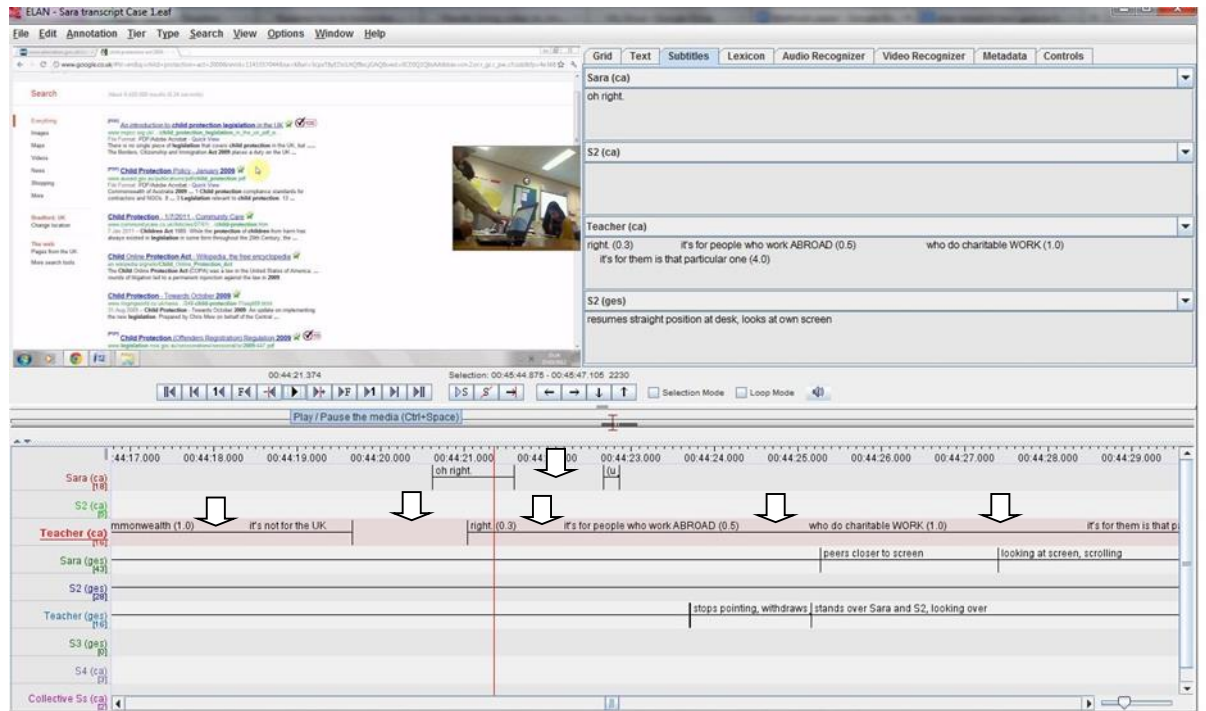


Figure 14: ELAN multimodal transcript screen shot showing pauses whilst interacting with Web pages, etc.

The pauses correspond with Sara's exchanges with Web-based, actors (websites, the Google search engine, etc.) during writing, and suggest that an algorithm's suggestions and interruptions instantiate a turn as in a 'slot' in interaction. The question of whether lexicality

is a necessary feature of a turn is important here, and the notion of the ‘material’ as interlocutor or interactant is not new in ethnomethodology and the field of human-computer interaction (e.g. Dourish and Button, 1998) and technologically inflected ANT studies (e.g. Nicholls, 2009). This research is led by the Latourian injunction to follow actors and to pursue “new unexpected actors that have more recently popped up and which are not yet bona fide members of ‘society’” (Latour, 2005: p. 22). In this vein, in the transcript screenshot, Sara’s interacting with Google’s algorithmic auto-search function would appear as apparent moments of silence, in a conventional transcript. Yet here, they appear as key moments of interaction in the representational system I propose; the materiality, in a sense, has a ‘voice’, in addition to the other interactions and ‘voices’ of this assemblage, some of which are not represented in a traditional linguistic transcription.

The next section addresses the action Sara does at the end of the last vignette. It explores the implications of her contacting a friend via Facebook to ask about an issue to do with her settings for her assignment.

4.6 ‘Unacceptable use’

As she gets well into her assignment (forty-five minutes into the task), Sara engages in specific social conventions by communicating with her friend, whilst enquiring about an aspect of the assignment. This is shown at the end of the previous vignette, and a detailed transcript of the exchange is below to show how this occurred:

Transcript extract

Following a period of Web searching on child protection legislation, T (the teacher) has walked over to Sara and Lauren (learner sitting next to Sara) and is outlining the requirements of the task as they need to include a discussion of child protection policies in their assignment. She recommends the policies as interpreted by their work placement (“setting”), but Sara is having problems locating this online. Lauren regularly glances over to Sara’s screen and

back throughout the exchange.

[start of clip]

Sara: Do you know we're doing this right?=
T: =Making sure they're actually covered by what they're actually saying.

(.)

Sara: You know where it says you have to include the (.) policies (.) do we have to look at our setting's policies?=
T: =Yeah yeah yeah↑ (1.0) or any policies that you're familiar with have you collected anything (0.2) in err (.) for your pr [*personal reflective*] diaries on policies?

(.)

T: Do you remember what you've got?
(.)

Sara: I think I still got them at home (.) I'll have to check them=
T: =Anything to do with child protection?

Sara: Cos you know↑ (0.2) the place where I'm at now (.) they said that the policies and procedures are on the internet (.) cos they said we don't have them (.) cos when I asked for them paper based (.) they said it's on internet.

(1.5)

Lauren: Can you ask anyone?
(0.2)

Sara: Yeah I'm going to ask my friend, on facebook, amarah (0.2) she's there heh heh.
((Sara then proceeds to surreptitiously contact her friend through her phone held under her desk to enquire about the policies))

[end of clip]

Key:

T: Teacher

S2: Student sitting next to Sara

(.) (1.5) Pauses are shown in tenths of a second in brackets. If pauses are shorter than one fifth of a second, a dot enclosed in brackets indicates such a "micropause"

= Talk is latched onto prior talk without any gap or lapses in between

Underline Speaker emphasis

↑ A marked rising intonational shift

↓ A marked falling intonational shift

Full stop marks that intonation falls to low, question mark indicates rise to high intonation

By using the digital artefact of her smart phone to communicate with her peers who are in other locations, Sara turns a digital artefact of her own possession into an actor itself, which, through the software and hardware governing the media being used, renders these interactions distinct in particular ways from the immediate interactions in the classroom using the college's sanctioned institutional technologies. Aside from the fact that her smart phone (and its software and hardware) are mobilised for use in this assemblage – an interesting issue in itself – every part of this scenario of using the Facebook platform presents a tension between an institutionally validated understanding of digital media use (as explicated in the college's 'acceptable use policy' in figures 15 and 16), and Sara's casual flouting and circumventing of it.

Her assignment is thereby further modified and influenced by a loop of 'personal-yet-curricular' literacy practices of her own creation by describing her task to her friend, who has then given information back. Each of these elements feed into the collateral realities of the digital literacy event, illustrating the way in which digital media in a classroom can serve as a conduit for cross-network literacy practices as her writing unfolds. For what, therefore, is exclusively *vernacular*, *social*, or *academic* in the digital literacy practices of her assignment?

Notably, personal use of social networking during class time is not approved by the college, and stated quite clearly as an 'unacceptable' activity (figure 15) for students using ICTs in the college. The college's acceptable use policy spells out the purpose, scope, and guidance for students using digital media whilst on the college premises and for curricular work. It provides predominantly safety guidance on the phenomenal explosion of social media such as Facebook in everyday use, and how to best appropriate its use for learning. What is of note is the word 'acceptable' in the title; acceptable to whom? And why? See below extract:

responsible for any claims brought against the College that result from your unauthorised use of IT Facilities.

Staff or student failure or refusal to comply with this policy constitutes a disciplinary offence, which may lead to disciplinary action, up to and including, dismissal/expulsion without notice.

If you suspect that this policy is not being adhered to by another user of the IT Facilities you must immediately report your concerns (in confidence if necessary) to your Tutor (Students) or Line Manager (Staff) who will request authorisation for an investigation.

2. Abuse of the System – What you must not do

The IT Facilities are provided to staff, students and other users for business use and for teaching and learning. Accessing Unacceptable Content and/or the pursuit of Unacceptable Activities is prohibited.

Unacceptable Content

The following is a non-exhaustive list of the type of material that the College views as Unacceptable Content i.e. material that is:

- threatening;
- offensive;
- abusive;
- libellous;
- harassing;
- pornographic;
- sexist;
- racist
- unlicensed for use on business premises (i.e. not licensed by the College for your use)

and/or which relates to:

- terrorism;
- cults;
- dating;
- controlled drugs;

- gambling;
- criminal skills (including software hacking);
- social, non-educational chat, jokes or chain mail;
- the conduct of any personal trade, service or profession; or
- that otherwise encourages violence, or unlawful conduct.

Figure 15: Extract 1 from the Acceptable Use Policy with ‘social, non-educational chat’ highlighted

In a later part of the document the following actions are among many deemed as ‘unacceptable activities’:

- failure to comply with the relevant Code of Practice for acceptable and responsible use of allocated resources;
- sending e-mails or phone messages which include Unacceptable Content;
- using another person’s identity and password to access College IT Facilities;
- visiting, viewing, forwarding or downloading Unacceptable Content;
- setting passwords and security codes for your computer, the system, or any part of it or documentation held on it other than in accordance with College policy ;
- using the College telephone system or a College mobile telephone or other hand-held

Figure 16: Extract 2 from the Acceptable Use Policy

Sara most definitely broke some of these rules in her interaction, as the policy also states that “social, non-educational chat” are deemed “unacceptable activities” alongside “using the IT Facilities for private, social or personal business purposes within work or study time”. It further states, in another part of the document, that students must not use their private/home e-mail addresses to send mail from College premises, that they must always use the e-mail address allocated by the College, and only use the Internet for “legitimate activities” associated with work or study at the College. Anything otherwise must be “kept to a minimum” and must not “interfere with work”.

It seems that the policy makes a clear distinction - quite categorically - between legitimate activities associated with work or study at the College and personal use, and that one can interfere with the other. As an actant forcing its agenda in this assemblage, it is trying to tell other actors what to do and how to do it; a salient example being the case of a college teacher (mentioned earlier in this chapter) who was disciplined by the college for disparaging comments on Facebook. Sara, on the other hand, has an assignment to get on with; her educational and professional future depend on this. The teacher, for her part, has her targets to meet and also wants this assignment completed before the next unit criterion is looked at for the following session. Both of them are under different pressures to attain the same goal: a passable and fit-for-purpose assignment.

Another thing of note in this account is that the policy mentions using Moodle, the College’s institutional Virtual Learning Environment (VLE), as a “risk free alternative” to Facebook for communicating with students. It mentions safety but doesn’t state any examples of what a potential danger is. The College apparently does not actively encourage Facebook use, but recognises that some tutors utilise it as an alternative teaching tool to improve communication and engagement with students. This practice is discouraged but not proscribed, and is subject to strict measures if misused.

When I asked Sara to elaborate on how she uses the VLE for the course generally, she spells out her responses to the Acceptable Use Policy in the following interview extract:

Ibrar: There's the VLE isn't there? Do you use Moodle at work, or at college?

Sara: What's that?

Ibrar: You have Moodle don't you for your classwork?

Sara: They told us that website and our login and password I don't even know it [Laughter]

Ibrar: How come? So how do you discuss things about your course?

Sara: You don't need to know it, people only use what they need to use. Yeah Moodle's where you login and get your work or something. We just use Facebook for all that?

Ibrar: Who?

Sara: All us lot.

Ibrar: How did that start?

Sara: I don't know. We just kept on doing it from the start. They keep telling us to use college email and that Moodle thing, but to be honest I don't even know my password! [Laughter]

Sara's embracing of social networking in her personal life has allowed its use to infiltrate into her course activities as she uses it for discussions instead of the institutionally validated and preferred Moodle site. When asked about her social networking activities, Sara mentioned them in the contexts of her home, college and work spheres. It seems that friendships initiated and maintained in personal and/or work spheres, for Sara, encouraged camaraderie in the classroom, extending to professional networking through work placements, and also

personally. She positions herself in multi-faceted ways in the classroom doing the assignment: as a seeker of information; as a student seeking assistance; as a friend asking a favour, etc. The classroom digital literacy event is therefore a multilayered and unbound phenomenon with ephemeral infiltrations of Sara's digital literacy practices that would be otherwise deemed as 'personal' or 'vernacular'.

The interview component of the study also included a Venn diagram activity, an icon mapping exercise. This is a participatory technique (Emmel, 2008) and substantiated in prior research of this kind (Mannion et al., 2007). This activity allowed me to further explore some of the themes that emerged through our discussion about her assignment and her practices of digital literacy more generally. A picture of Sara's Venn diagram is in figure 17, where she arranged the icons as we talked:

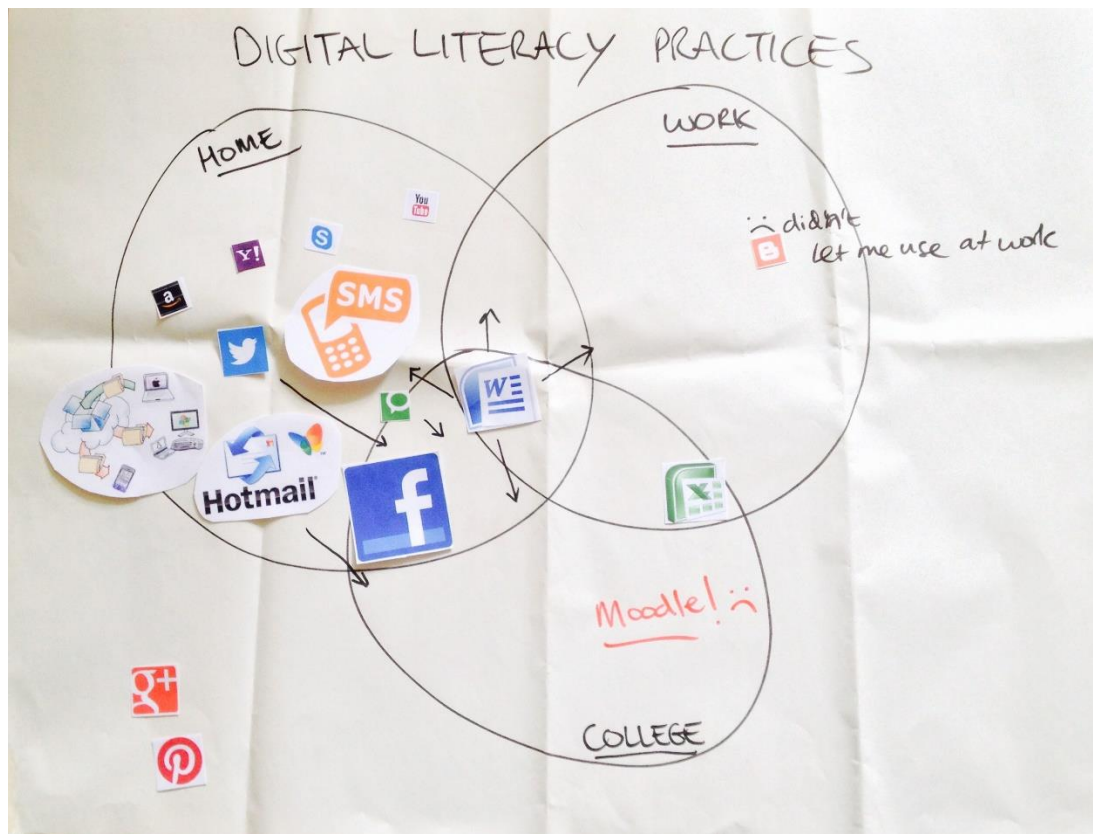


Figure 17: Sara's arrangement of icons for digital media use across home, college, and work

In the Venn diagram, Sara's placing of her icons of digital media usage across the prototypical contexts of her home, college, and work spheres substantiate her use – or rather, appropriation – of social media (and other such tools) for college purposes.

Sara described how her 'outside' of college digital habits have infiltrated her classroom practice, and that she tries to use social networking platforms for multiple purposes, as much as she can. This is usually to save time and effort, and is shown in the Venn diagram as a group of icons (*Hotmail, Facebook, WhatsApp, Twitter*) clustered together occupying the small home/college cross-over section. The arrows also show how use of these platforms and tools have 'flowed' into her college activities despite previously being exclusively home-based practices.

It is not enough to say that the use of these digital tools migrate across domains, but that the digital literacy practices inscribed through their use infiltrate Sara's classroom digital literacy events, as she creatively employs the means at her disposal when getting on with college work. Notably, the Moodle VLE platform of the college remains separately positioned solely within the college sphere and even has a sad emoticon next to it – Sara had totally forgotten what it is when I asked her about it in the interview extract above. The blogging platform, *Blogger*, is positioned squarely in the 'work' sphere of Sara's digital media practices, and also has a sad face emoticon beside it. This is because during her work placement as a trainee at a school, she was not allowed to contribute to the school blog despite having a keen interest in doing so. This bothered her and she wanted to mention it in our discussion. The professional context, like the college, has certain strictures in place about who can do certain activities and, as with the college, these are usually presented as matters of safety and security.

Later, in the discussion chapter of the thesis I further explore some of these practices of Sara, drawing from findings across two other case-studies illuminated by foundational theories, as

well as proffering new areas of theoretical development (Chapter 7).

4.7 'Looking at heels'

Later in the session, Sara is still searching the Internet for information and guidance on child protection policies. In a previous vignette, we saw how she was directed to the settings of her work placement, and in the extract below she is still searching for the relevant documentation on the Web pages of the school/nursery where she worked:

Forty-five minutes into the assignment, Sara is still searching the Web to collate information. She searches for the Website of her 'setting, a local school where she worked on a placement. Somewhere else in the room the teacher asks a student "what are you googling....?" She replies by saying she is "looking at heels" which results in laughter across the room.

Sara scales the menu section of the school website, wondering where she can find information on the child protection policies. She tries the 'Parents and Carers' section first. She then types "pol;cies and procedures" (with the typo) in the site's search box. No results. Tries again without the typo. No results. Online hunting is becoming difficult.

At the school's website she now needs to locate where the 'policies and procedures' will be. She clicks on 'About Us', followed by 'Ofsted report' (new window opened), then 'prospectus'. She then asks Lauren if the policies will be in the prospectus. Lauren replies with 'what's a prospectus?'

Scrolling through each of the headings of the prospectus, she struggles to locate anything on child policies and procedures. Whilst scrolling talking about who is going out with who generates some laughter, with a slightly hysterical moment for Sara. Finally, on one of the pages appears the heading 'Child protection' in underlined-bold-italics with a brief paragraph beneath it.

She pauses, leans back on her chair, and continues discussing with Lauren about what amused her earlier, as if giving herself a little break.

Did she misunderstand the task earlier? This is a very long time merely figuring out what to do!

Here we see an instance which typifies the kind of freedom accorded to learners when they are left to browse online autonomously, as a student boasts that she is “looking at heels”. This boast, which results in laughter across the room momentarily changes the mood of the whole class. The teacher does not chastise her, although in the next vignette she does chastise another student. Rather, she acknowledges these new and Web-based actants are now commonplace intruders in classrooms and so does not appear greatly troubled by this short but disruptive occurrence.

Meanwhile online hunting is proving quite difficult for Sara. She needs to mention the child protection policies and describe how they have been interpreted by her setting. Locating any mention of them in school Ofsted reports and other documentation is time consuming and so far fruitless. A proportionately long time has been spent both figuring out what to do and looking for information online up until this point.

In the next vignette, she finally finds a way through the above impasse:

The teacher walks away and chastises another students for wasting time, and delaying their work till later, and for spending too much time on Facebook.

Meanwhile Sara looks for the policies of the local nursery, but the policy document she needs is at home. She Google searches the name of the nursery, and clicks a document for a nursery with a similar name in another city, then saves a pdf report (6th link down in the results list). Slowly she scrolls through the Ofsted report of the nursery, looking closely for any mention of ‘child protection policies’. The teacher continues her chastisement.

One hour into her work, she decides to move documents into relevant

folders on the pen drive, organising her documentation.

Having failed to find anything substantially useful for the assignment thus far, Sara goes back to the previous assignments and attempts to garner information which she can copy, paste, and rehash into the current assignment. This is related to the unit criteria of those previous assignments, and where the content overlaps.

So she begins typing again, reformulating her previous work. Laughter and chat also ensue around the class

The timing of the lesson is argued over; The teacher insists on the importance of the “extra hour” on the timetable. She then calls out that she will come round to “see what has been done”, and walks around the room.

When Sara completes a paragraph she deletes the paragraph which she reformulated it from (which was also copied and pasted from another assignment). The atmosphere in the classroom in this period is very informal and talkative.

At this point, again, the use of previous assignments is very important when it comes to getting this one done. The moments of mobilisation of previous work are key in the writing of the assignment. These previous assignments are assemblages which are already ‘hanging together’, mobilised by Sara in order to unfold the current one. As resources, their validation make them safe options to invoke and incorporate into this task, especially over free and open Web-searching which can lead to nowhere, as she has figured out. The patterns that have informed their completion are reliable prior practices for Sara to fall back on in this moment of impasse.

This process continues for around twenty minutes, and is a key stage in this session as it is the most intense for Sara in terms of actual writing activity. Most of the assignment is written in these twenty minutes: a sudden blast of writing activity after the impasse. This is followed

by the end of the session, and an instruction to save and store work in a particular way, followed by its submission.

Twenty minutes later, the teacher announces as follows: “ladies can you finish your sentences and paragraphs and to make sure you save your work, and email it to yourself always using your student account, always email it to yourself using your student account. Just in case”.

Sara rushes to get phrases and sentences completed despite errors as many students rise and put their laptops away into the trolley. She then saves her work, again, on her pen drive (not by sending herself an email), ejects it. And shuts down the laptop. The last twenty minutes of the writing session have been rushed, yet this is where she has completed most of the assignment. She grabs her bag and rushes out the door.

4.8 Summary

The methods and strategies behind Sara’s assignment writing tactics rely on networks which break down distinctions between the classroom and other spaces. By using the Internet to access government reports, she conflates what is inside and outside the *a priori* reality of ‘the classroom’. This aspect of the spatial dimensions of the event, alongside other similar ideas from the other case-studies, is further discussed in the Discussion part of this thesis (Chapter 7).

Furthermore, the reports she reads and utilises as background information for her assignment are interpretations of events by their writers who have, in turn, based their own report/text on the forms and customs of previous reports/texts. These are then written, read and interpreted by people in a different spatial and experiential location from Sara reading them in the class. In this way we can see the potential of Sara’s actor-network to extend and fit into larger and greater realities beyond the time of reading, downloading, copy-pasting, writing, and then uploading. In this respect, the use of previous assignments is very important to getting this

one done. We can view these previous assignments as assemblages which are already ‘hanging together’, mobilised by Sara in order to instigate and unfold the current one: a writing tactic in itself. The writing of the assignment becomes instantiated by a bricolage of such practices, as part of Sara’s writing tactics: practices within events, which in turn are events with their own constituent practices, each and all enacting different realities (see Section 7.3: ‘practices within events and events within practices’).

In this respect, the college does not take account of the richness of Sara’s outside-college digital literacy practices, yet the writing workshop provides an easy movement and flow of her literacy practices across domains. It also does not even take account of her inside-college use of digital media, as for her to reveal some of this blatantly may render her a rule-breaker or even a clever plagiariser. But these practises have a crucial role to play in her getting her work successfully done by the end of the session. In a later part of the thesis (Chapter 7 Section 7.2), I elaborate on how these ‘sub rosa’ practices through digital media can be conceptualised using a literacy studies and ANT framing.

Familiarisation with Sara as a research subject has revealed an impressive combination of commitment to study and achieve in her course assignments, alongside a lack of regard for the imposed way the college wants her to do them. This discussion of case-study 1 has demonstrated that Sara engages with multiple spatial and temporal domains, which combine to create contesting realities, based on numerous patterns of relations, and digital literacy practices. These aspects, and others, are further explored in Chapter 7, alongside an extended discussion of all three case-studies.

This presentation of the account of Sara’s assignment writing shows that sometimes one version of a reality, such as an educational ‘assignment’, can integrate practices of other

assemblages. Communications and discussions with friends about music, etc., all form part of the bricolage of digital literacy practices *of* and *for* the assignment, they become fundamentally part of its assemblage. Thus we come to what Law calls ‘ontological politics’, emphasising the power differentials and the political in the ‘doing’ of realities. In the dominant ontological politics of the classroom there is no place for certain digital literacy practices and there remains a clear hierarchical distinction between ‘curricular’ usage of digital media and ‘social’ usage of it. Yet my analysis shows that whilst one ontological reality of the assignment attempts to prevail, it integrates a host of other ‘collateral’ elements: communications with friends, discussions about music, confusion with a search algorithm, utilisation of previous work and other digital literacy practices which find their way into, and support the completion of, Sara’s assignment. How she then productively unfolds and negotiates a sociomaterial assemblage emerges as a central issue, as it is significant to success in her written work. We are drawn into the past, as she mobilises previous work for its validation; into the future, as she intends to utilise this very assignment to aid the completion of future work, such is her practice. We are lead to San Jose (California) as she interacts profusely with a search algorithm to garner information, and the wider social and work spheres of her life for the same reasons. There is, therefore, little here which is exclusively ‘academic’ or ‘vernacular’ in the way of the literacies for the assignment. These findings are significant as they serve to reinforce the highly complex nature of student engagement with technologies, undermining a monolithic or taxonomic understanding of Sara’s ‘digital literacy’ skills. These themes are further explored in Chapter 7 alongside findings from the other case-studies.

Chapter 5: Case-study 2 ‘Anne’

5.1 Introduction

Woodale College⁵ is a large further education (FE) college which has recently merged with two other neighbouring FE colleges in the West Yorkshire area. Another recent and significant development for the college is the appointment of a new principal two years prior to this research being undertaken, and an institution-wide inspection conducted during the same year. Initiatives and projects that have arisen during this period (in response to the merger, inspection and the new appointment) are still in their infancy but centre around the strategic aims of the newly merged college establishing itself financially and reformulating its identity as an educational provider in the local area. Both the merger and the appointment have meant that at the time of carrying out the research these were the college’s top priorities as outlined its ‘Strategic Vision’ document.

In this particular selected site of the college, more than half of the college’s students are from ‘disadvantaged postcodes’ (an expression lifted directly from the Ofsted report), and the college contains an ethnic mix of students closely mirroring that of the local population. Most course enrolments are at foundation level, followed by intermediate level and around a fifth of all enrolments at advanced level or above. Most enrolments remain in the areas of preparation for life and work, retail and commercial enterprise, engineering technology and manufacture, and health and public services. The unique feature of this site of Woodale College is its growing higher education (HE) provision, run in partnership with two local Universities, and a large range of provision for adult further education (19+ years) with over 5,500 enrolments in the year prior to this research being carried out.

⁵ The college’s real name has been changed for the purpose of this research.

A recent inspection report for the college stipulates a need to improve ICT facilities across the entire college to cope with the increasing requirements of a greater number of students and a diversity of courses to accommodate them. This is even more pertinent since the merger, and the various challenges and opportunities which it has brought. The course observed as part of this case-study is the Level 4 certificate in *Technology For Learning and Delivery* and was developed as a direct response to this call for improvement alongside the ILT (Information and Learning Technology) 'Service Standards' document. The latter implementation is across the entire college and acts as a means of monitoring and evaluating the extent to which technology is effectively utilised in teaching and learning. These initiatives are an integral part of this newly merged college's priorities as outlined in its strategic vision.

5.2 The course

The *Technology For Learning and Delivery* (TFLD) course is a Level 4 City and Guilds accredited programme which ran from January to June in the year this research was carried out. Course duration was twenty weeks, with sessions every Wednesday evening at 6-8pm. The course is designed for teachers who want to become more proficient and confident in their use of digital media to enhance their teaching practice. Since the recent inspection, the college has introduced an institution-wide ILT policy and incorporated it into the strategic vision for its newly merged and cross-regional remit. In the below discussion of this case-study, I will draw upon how this document may have shaped a particular set of protocols and procedures to be carried out in the performance of the lesson, and behaviours and literacy practices supporting the completion of the assignment that Anne needed to complete.

In line with my data collection techniques and methodology, outlined in the previous chapter, what follows below are a series of vignette accounts which draw from the different data sources including the video log for the session and field notes. These begin with a description

of the site, background information to the course and learners, followed by vignette accounts outlining the writing of Anne's assignment. But first, the extract below is based on field notes and was recorded quite early on in the observation phase of the research:

The purpose of the course, as outlined by the tutor, is to help its participants explore what is 'out there' in terms of digital tools to help them make the best of their teaching and learning experience. Some of this involves them sharing their ICT knowledge, skills, and lessons learned with other teachers and make the most of the learning potential of digital tools according to their own practice and experimentation. The purpose of this course fits well with the College's Strategic Vision to "ensure best adoption of technology for teaching and learning" [from the college's Information and Learning Technology service standards document].

The prerequisites for the course are that its candidates must: a) demonstrate a minimum of level 2 ICT skills, and b) have regular class contact with learners in order to practically demonstrate the technologies they will be discussing and evaluating on the course. All of the course participants, therefore, are teachers of various programmes at the college.

On the college Website, the qualification is described as "ideal for learning professionals, including learning assistants, looking to qualify as tutors, assessors, lecturers and trainers who are interested in the use of emerging technologies to support teaching and learning". Successful completion of the qualification also allows candidates to progress to professional certification, including schemes such as Certified Membership of the Association of Learning Technologies. The certificate is a vocational qualification and course assessment is moderated by an external assessor appointed by City and Guilds. The total cost of the course is £353.

According to the above notes, this course was designed as a direct consequence of the dictates of the strategic vision and the ILT service standards mentioned earlier. These standards are a set of specifications which define and dictate what effective utilisation of ICT for teaching

and learning purposes are. The document divides good practice of ICTs into three levels: 'bronze', 'silver' and 'gold', and defines criteria for each in terms of the perceived quality and effectiveness of their adoption in any programme of study:

1. *Bronze* defines a set of core ICT resources (mainly centred around or heavily involving the VLE) that should be available in every course. These should be utilised by teachers in such a way that allow learners to understand the learning and assessment requirements of the course, to catch up on any missed sessions, consolidate learning or extend their learning.
2. *Silver* is a higher level of ICT usage which allows students check their learning progress. This is usually, but not exclusively, through a more creative use of the VLE than that which qualifies for a bronze level.
3. *Gold* level ICT adoption is one which allows independent learning opportunities not constrained by time or place. This level requires the most creative use of digital media, and the greatest challenge for teachers. The vision for gold level ICT adoption is reflected in the name of the ICT suite: The *Flexible* Learning Centre (see figure 18).



Figure 18: The Flexible Learning Centre

The policy recognises that different courses may afford different opportunities for ICT adoption, but holds these as general institution-wide guidelines. The TFLD course for this case-study was introduced to help the teaching staff of the college become more acquainted with digital technologies, to critically evaluate their adoption for teaching and learning, and ultimately to demonstrate as near to ‘gold’ level adoption as possible in the classroom. It therefore has direct strategic implications and objectives. How this is played out in the practices of the course itself is indicative of its location: the highly important ‘Flexible Learning Centre’ which is one of the college’s many investments to facilitating attaining a ‘gold’ level of ICT usage. The impact of these investments trickle down to reflect the investments – financial and otherwise – of the learners in both attending and preparing for the course. This aspect emerges in the vignette below which is based on field notes of my first lesson observation:

In one of first site visits, I observed the first lesson of the term. I discovered that many of the learners consider themselves as novices when it comes to using digital tools for their teaching activities. This became apparent during the informal class discussions which ensued immediately prior to the lesson. The course is important to them, as they have taken time out to attend it, considering most work full time (and full-time plus); course members are staff from many different departments across the college. The teacher begins by showcasing a new technology called ‘papershow’ supported by notes which are projected onto a whiteboard using an ‘e-pen’. Such technological ‘show and tell’ demonstrations end up being a recurring theme throughout this course.

Computers and devices of sorts are pervasive in the ‘Flexible Learning Centre’; in your face constantly, like a message is sent out that ICT use is a serious business here. The equipment seems new, glossy and shiny, like the course itself. Most of the students on the course, pull out the latest iPads and other such writing equipment at their desks, as if in so doing they are stating: ‘I have made my investment and I am taking this technology thing seriously’.

The purpose of this first lesson is to get the learners to reflect on how they use ICTs in their personal lives and how they can increase and improve on its use for their current teaching practice, and how they can enthuse such an interest in their learners. The underlying theme is that it must be digital technology which ultimately enhances the learning and teaching experience. The teacher begins this discussion by talking through an 'e-learning potential' questionnaire to get the learners to reflect on the availability, scope, and utilisation of digital technology in their home and work lives.

The participants on the TFLD course, all of whom are teaching staff at the college, want – or feel the need – to improve the way they use ICTs in their lessons. Most of them consider themselves as novices at using ICT effectively and this is why they took the course in the first place, so that they can keep up with their own learners who appear to be more proficient. These sentiments emerge in the class discussions, as content throughout the course is often related to introductions to new or novel technologies followed by reflective evaluations of their use with students. Naturally, different technologies will have different levels of application in different courses, but such discussions prove reflective and purposeful for the participants of the TFLD course. The conversation itself is a useful exercise for them, and prepares them for their assignment: the digital portfolio.

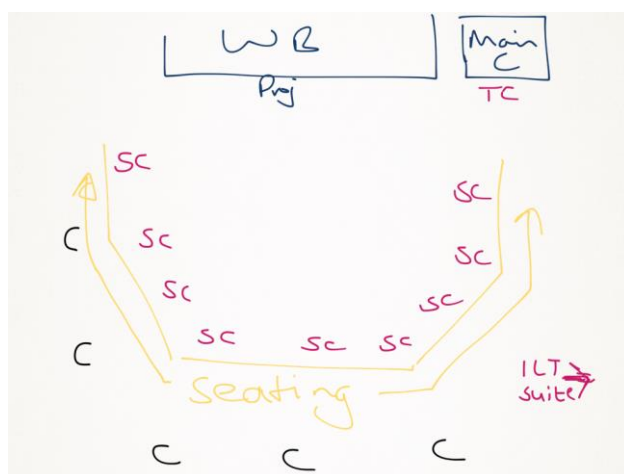


Figure 19: Arrangement of main teaching area

Figure 19 shows a digital sketch of the arrangement of the main teaching area, with seating in a horseshoe arrangement. The key is as follows: C = college computer, SC = student seated with their own device, WB = whiteboard. The whiteboard is quite large and dominates the front wall (see figure 20). The adjoining ILT suite (referred to as ‘the Flexible Learning Centre’), where learners go to work using the college’s newest computers, is shown in figure 18.

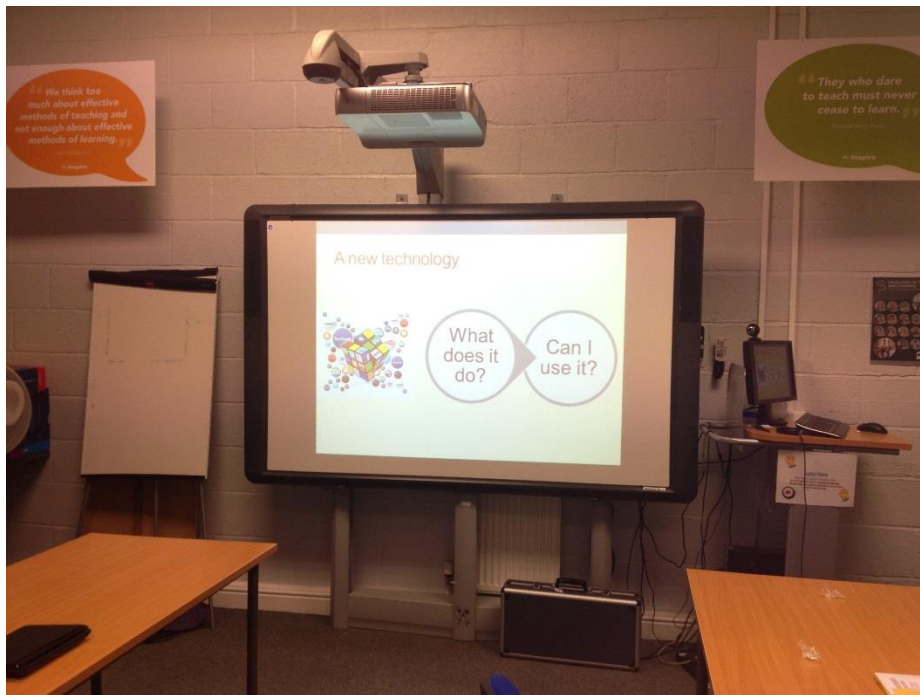


Figure 20: Front wall view of whiteboard in the main teaching area

5.3 The digital portfolio

Assessment for the course is carried out through the creation of a *digital portfolio*. This task consists of a compilation of reflections which draws from several elements, as we shall see, including personal professional experience, collegial work and everyday practice. As a piece of work, it resides in a particular section of the college’s Virtual Learning Environment (VLE), the Moodle platform.

In my observation of the participant for this case-study ('Anne'), I noticed that she chose to work on this task alone, separate from the rest of the class and in her own work space. This is in contrast to Sara (case-study 1) and Paulo (case-study 3, to come) who did not have the luxury of choosing where to do their writing. According to the assessment criteria, the digital portfolio is meant to be a collection of 'on the job' reflections and evaluations of 'naturally occurring' uses of technology in the learners' contexts. These contexts are primarily the teaching environments and classroom activities carried out by the participants in their capacities as teachers.

There is therefore a considerable level of freedom accorded to the course participants in writing this assignment and, as we see in the vignette below drawn from field notes, this proves a challenge for the tutor when it comes to designing and setting the task:

The tutor for the course, according to her own blog, had difficulty deciphering the course handbook's jargon when considering the assessment tasks for the course. The course has three units, and each unit has between six and twelve assessment criteria. Assignments need to meet these outcomes, with evidence required from 'naturally occurring workplace activity'. So tasks for assessment need to provide the required evidence while the learner is 'on-the-job'. The following is a quote from the tutor's blog regarding the course handbook's instructions for assessment:

'I don't want to dictate to the students about how they should present their work – that's kind of the point of the course – they need to research, use and evaluate a range of technologies and find what suits them as individuals. Therefore, I think that this first course is going to be a learning curve in terms of how collaborative technologies can be integrated with each other to provide a digital portfolio of evidence, but what that leaves me with this year is the potential for a lot of different systems to assess. Once again, gulp'.

The phrases "naturally occurring workplace activity" and "on the job" (taken from the

teacher's blog) clearly show that the digital portfolio is an individual matter for each course participant. Their own specific teaching contexts and reflective practice with digital media will give rise to different sets of circumstances, insights and problems, and subsequently different accounts for the assignment all drawing from a range of "different systems", as the tutor suggests. The phrase different systems followed by "gulp!" by the tutor here is an indication of the potential variation of all the digital portfolios and the difficulty this could bring for standardised marking and assessment. Different systems (blogs, web pages, contexts, etc.) could also be reflected in the variation of practices within *one* particular assignment, as we can see from Anne as she commences her work in the vignette below which is drawn from the video log:

Anne begins her assignment by an exclamation of excitement. She logs on to 'Posterpus Spaces', the blogging platform for learners on the TFLD course, and encounters the welcome screen which states 'Posterous Spaces is the easiest way to share safely'. She Clicks on 'Spaces', and then on 'Anne – TFLD'. These are her posts in draft form which she is currently working on, and will eventually link to in her digital portfolio. She starts working on one of a number of blog posts which are in draft form, waiting to be uploaded for the world to read. She has been writing these over the last few days.

She uses the blog as part of her reflections for the course. It is the 'personal reflective' blog, the first of two blogs she compiles, and selections of which form parts of the digital portfolio. She shares this blog with four other learners in a group. The other, second blog, is the main course blog where all the learners of the TFLD course share things.

Then she clicks on 'Exactly how will I use the VLE with my students?' Another draft post is 'Face to Face or Facebook?' She chooses the first one and clicks on the icon that looks like an eye. Immediately after, she seems unsure on what to do next (for a few seconds only) until she quickly clicks on the link again: a new tab opens.

Anne's digital portfolio assignment ends up consisting of a series of online reflections about her teaching practice, and engagement with technologies for her teaching. These reflections are collected from a number of sources she has been working on already through her *naturally occurring workplace activity*. These include a blog which she shares with four other students in the group, her own personal blog, a blog for the entire group, and her Twitter updates and Diigo links.

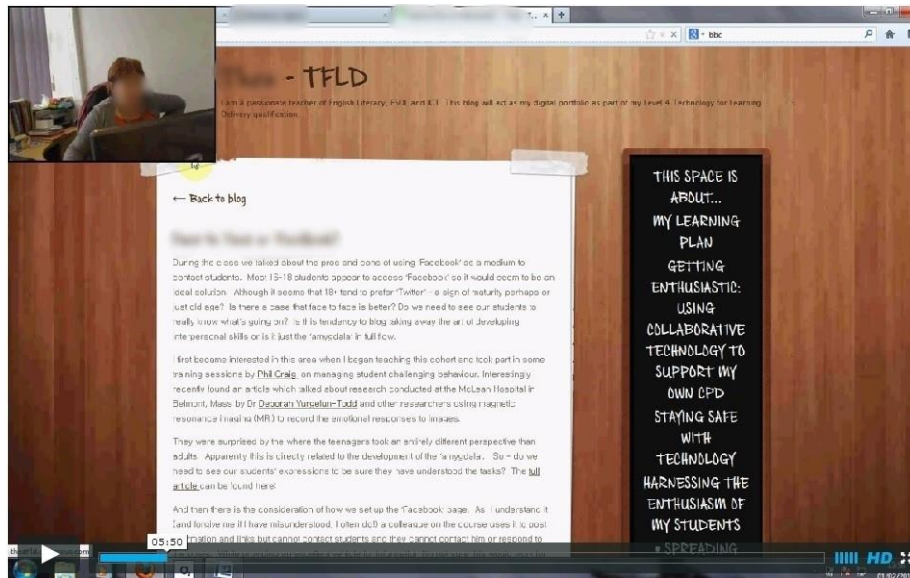


Figure 21: Screenshot 1 Anne edits a blog post

These online reflections end up consisting of things such as:

- Her personal reflections on her *own* blog. These are usually posts where she writes about how she and her students (on the course she teaches) have responded to the use of a particular technology for learning and teaching as well as general posts about her professional life. *This is Anne as reflective teacher.*
- Selected tweets which she writes and posts at any time of the day and in any location via her mobile device. During the writing session she attempts to link her Twitter account with the blog, and subsequently also tweet blog updates through it. What is

important is that the Twitter account, as substantiated in the interview component of the research, is used by Anne purely for professional purposes. *This is Anne as active FE professional.*

- Her posts and contributions on the TFLD course blog is open to all the other learners doing the course. These blog posts can often be part of longer discussions with her colleagues also doing the course. Through this blog she also comments on posts written by other course participants. *This is Anne as collegial student.*
- Her Diigo⁶ roll which she embeds into a page in the VLE, through which she provides links to Web content to support the subject she teaches. This is a social bookmarking tool, and Anne uses it to collect and organise websites that may be useful for her students. *This is Anne as subject to the ILT standards.*

These are overlapping assemblage identities held up by their own sets of digital literacy practices. In each assemblage identity Anne is positioned as a subject in a particular way: a reflective FE professional, a collegial student, a faithful subject of the national ILT standards. Becoming a *subject* in this way, and the *hailing* that invokes and instigates it, is termed by Marxist philosopher Louis Althusser as “interpellation” (Althusser, 1977). Importantly, ideology is inculcated through the apparatuses of such interpellations and their practices. Anne is therefore positioned by the managerial projection of a particular idea of what a ‘reflective teacher’ is.

These assemblage identities form an important part of this analysis, and will be discussed in more depth later, but we can see some of the practices which hold them together coming together for the assignment (and subsequently holding that together too) in the following

⁶ Diigo is a social bookmarking tool, allowing a user to keep track of their favourite and most useful Websites for sharing, reading later, or to keep up to date with several Websites at once.

vignette drawn from the video log. In it, Anne tweaks a previously written text to make it less critical and more suitable for her peers to read, and also to the examiner of her digital portfolio no doubt:

Three minutes into the task, Anne is still editing a previously written blog post to include in her digital portfolio. She clicks on the option 'Edit' and adds the text 'VLE' before the word 'knowledge' in the text. Looks for another part to edit, and then she adds 'some of my' before the words 'immediate peers...' Looking at the screen for another 28 seconds, and then she saves the changes. This editing seems to lessen the critical force of the text, which could be read as a slight criticism of her peers. This is tailoring the text for inclusion into her digital portfolio.

She refreshes the page. Scrolls down, then up again, moves in the page a little more, and then clicks on 'Manage' followed by 'Drafts', and now she chooses the second of the options 'Face to Face or Facebook?' This is a blog post about the pros and cons of using Facebook to communicate with her students. She clicks on the 'Edit' option again. Selects a name in the text ('Phil Craig'), chooses to 'Insert/Edit Link' (small window), but changes her mind, then cancels without editing/inserting anything. She then gives the text ('Face to Facebook?') a cursory reading to check if it is ok, she then clicks 'Publish'. She has just published a post on her blog which had until now been in her 'Drafts' folder, and then links to it in her digital portfolio. This has direct implications for the assignment as an example of the kinds of 'signposting work' that she has to do for it: so much of the digital portfolio will be links to her online reflections, posts, etc.

As she returns to the 'Posterous Spaces' tab, which is the service hosting her blog, she attempts to connect her Twitter account to the blog so that she can 'autopost' from it. This involves clicking on 'Manage'→'Autopost setup'→'Add a service'. This links her Twitter account to the blog and authorises 'Posterous Spaces' to send tweets announcing new posts. She needs to give her username and password in order to achieve this authorisation. We are now ten minutes into the task.

Her strategy of collating – or curating (a notion to be explored further in relation to all the case -studies in Chapter 8) – a wide range of content which, in turn, link to other online content (e.g. her LinkedIn page) is a particular strategy of hers in addressing the unit criteria for the assignment. This is outlined by Anne herself in our discussion after the assignment when I asked her about this strategy:

Anne: ... It's where you pull together all the criteria and you say 'this is how I meet it', but mostly directing to the posts on the blog. So that's why I'm jumping backwards and forwards... from my digital portfolio to the blogs, well both blogs, to the Internet, to Diigo, to Pinterest.

Ibrar: How long do you think the digital portfolio will be when you're done?

Anne: Around four pages with each page at around 400-800 words, with it all linking to things like posts and websites, and news reports and things like that. And that will cover all the criteria of the course.

Ibrar: So it's a piecemeal type completion isn't it?

Anne: Yeah it is, it is. You're doing bits of it.

5.4 Flows and the blurring of boundaries

In the recording of the session in which Anne works on her assignment, it is apparent that a wide range of digital environments, and her contributions and discussions in them, contribute to her digital portfolio as she sees fit (see section on 'curation' in Chapter 8). This is achieved through an abundance of hyper-linking, her response to the 'signposting' instruction as stated in the assessment criteria. But at the same time – and crucially – doing so causes Anne to rehash and fine-tune previous content to ensure its suitability for this new purpose.

Even though the content itself was written in different spatial and temporal locations, and for probably a different audience and other intentions in mind, this strategy for writing allows her to select from a wide pool of content for her digital portfolio. The agency of the digital

portfolio, as an actant in this assemblage, thereby renders much of her online written work as professional or study related eventually, even if it was not intended as such at the original time of its writing. This aspect was explored later in a discussion where Anne and I discussed her practices across home and work with the help of a Venn diagram. Following the mapping methodology, I advised that the diagram can be annotated and scribbled upon to show movements and ‘flows’ of her practices:

Ibrar: You also talked about how you use Twitter and LinkedIn.

Anne: Yeah, and different people using it for different things. And for me I have quite a clear delineation. As I said, I use them for different things, and for me that works. And I also don’t like duplication. LinkedIn is my CV and Twitter tells me what’s happening in education or technology. I don’t go to silly sites. Facebook is usually for friends and family but now the borders are being blurred as [professional] groups and things appear that seem interesting. So it’s very difficult. So, I use Pinterest to bookmark things that are of interest to me personally, so it may have pictures of my house on it [laugh]. Whereas I use Diigo to bookmark things that are professionally of interest to me, like sites for resources to use in the classroom.

She seems to attempt to keep a ‘clear delineation’ when it comes to digital media usage for work, study and home and this is somewhat borne out more visually in the picture of her Venn diagram below (taken as its design was emerging during our discussion):



Figure 22: Anne's Venn diagram 1

The question of whether any Web activities remain solely personal in her life is one I addressed in this discussion with her, and again to help us unpack this, the Venn diagram helped with the answer:



Figure 23: Anne's Venn diagram 2



Figure 24: Anne's Venn diagram 3

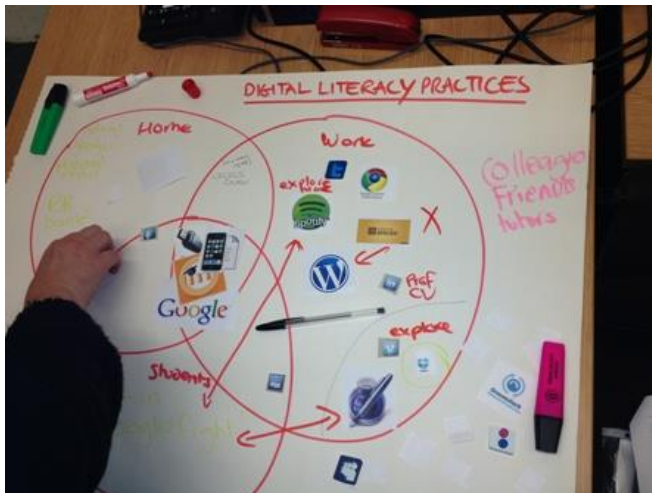


Figure 25: Anne's Venn diagram 4

The Venn diagrams show a lot of activities initiated in the 'work' sphere which then flow into other domains of her life, supporting the idea that technologies are introduced through work based activities and initiatives, and then picked up in other parts of her life. Notably, Anne mentions certain technologies that she would like to explore further and learn about, but she places the icons for these under the 'work' section, suggesting that it is most likely in her work activities that these new technologies are likely to be introduced.

The 'clear delineation' might be something she wishes to maintain, but with an assignment

like the digital portfolio designed the way it is (with instructions to continually ‘signpost’ etc.), we can envisage Anne’s preferred practice of delineation to be challenged. The nature of the assignment demands for some movement of her practices with digital literacy across apparently demarcated contexts (work, home, etc.), or a matter of “boundary crossing”, a phrase that Ivanič and Satchwell (2007) deploy to describe literacy practices which cross over contexts. This notion of crossing is related to the sociolinguistic idea of “language crossing” used by Rampton (1995) to problematize how members of one ethnic/social group adopt the language conventions typical of another group and the identity implications. In the case of Ivanič and Satchwell, the crossing is one of the interfaces between students’ literacy practices in their lives beyond the classroom and institution, and into the different domains of their lives. They argue that the literacy practices taking place in these other domains, and their unique characteristics, can be a source of knowledge and tools to leverage learning to transform pedagogies in further and higher education.

These crossings are not without a subsequent transformation: as practices cross assemblage identities they are transformed and their original purposes are betrayed, as Anne re-wrote texts to suit the criteria of the assignment. Instances in the recording of the assignment where this ‘fine-tuning’ or rehashing of previous content occur are further explicated below, with extracts from the video log.

5.5 Rehashing previous work

In the below extracts Anne is editing some text which she wrote previously and for a different purpose, as she wants to include it in her digital portfolio, she edits it to make it more suitable. At the time of writing the text, there was no intention of including it in a future assignment but, upon considering it appropriate, she fine-tunes some select pieces in line with the digital portfolio assessment criteria. The text is a brief reflection of how some of her peers have not responded positively to new technologies.

Twenty minutes into the task, Anne begins to navigate her way through the various sections and sub-sections of the VLE repository to get to her digital portfolio. Stored somewhere in its vast and complex network of Web pages lies the specific page in which Anne must write her portfolio, even though much writing for it may have already been done, scattered across different parts of the Internet. In the Moodle interface she goes to: 'My Home' tab → 'Course overview plus' → 'Certificate in Technology in Learning Delivery (C&G 7526 – Level 4)' → 'Digital Portfolio'. Her accessing the digital portfolio, stored on the VLE, is in order to write for it, and to link elements previously worked on to it. This is the first point at which the actual digital portfolio is visible on the screen. Although all the work prior to this is indicative of it, and will connect to it, this is the portfolio.

She clicks on the link of the digital portfolio and enters its various sub-categories. Its five assessed elements appear:

Learning Plan

Getting enthusiastic: using collaborative technology to support my own CPD

Staying safe with technology

Harnessing the enthusiasm of my students

Spreading the enthusiasm using the skills I have developed to support colleagues' use of technology in learning delivery

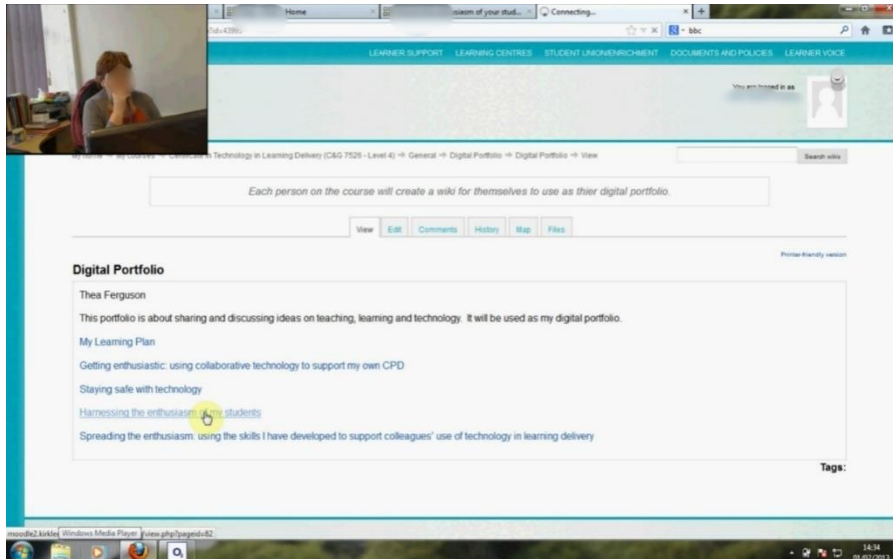


Figure 26: The five assessed aspects and sections of Anne’s digital portfolio

This practice of a) writing a text somewhere other than where the digital portfolio is stored but ultimately linking to it, and b) editing previously written texts for a new purpose has direct implications for the digital portfolio assignment and Anne’s strategy of addressing it. A digital portfolio criterion mentions the importance of ‘signposting work’ and this is what Anne is doing above. But another criterion mentions that the content should be ‘current’. The digital portfolio itself will not be a whole piece of work which is submitted and stored as a single file; much of it will be links to her online reflections and other elements she has drawn from. This tweaking and fine-tuning by Anne of her blog post is meticulous. She values this online presence and wants to make sure that her digital portfolio is representative of her best online writing and professional activities.

5.6 Signposting

Only selected parts of these snippets of Web-based writing end up as signposted to her digital portfolio, which is stored on the VLE. It remains a piece of work which is brought together by hyperlinks to the pieces of text to which she carefully chooses to link. The assignment for Anne, therefore, is the collection of these connections she is making and developing from *what is being written now, what has been written in other places and at other times, and what*

will be written in the future. This is related to online activities she undertakes commensurate with her multiple identities and interpellating agencies: a *teacher* (writing things for the benefit of her students), as a *student* (posting things for her tutor on the TFLD course and co-students on the course), and what she posts (more generally) as an aspiring *professional* in the FE sector.

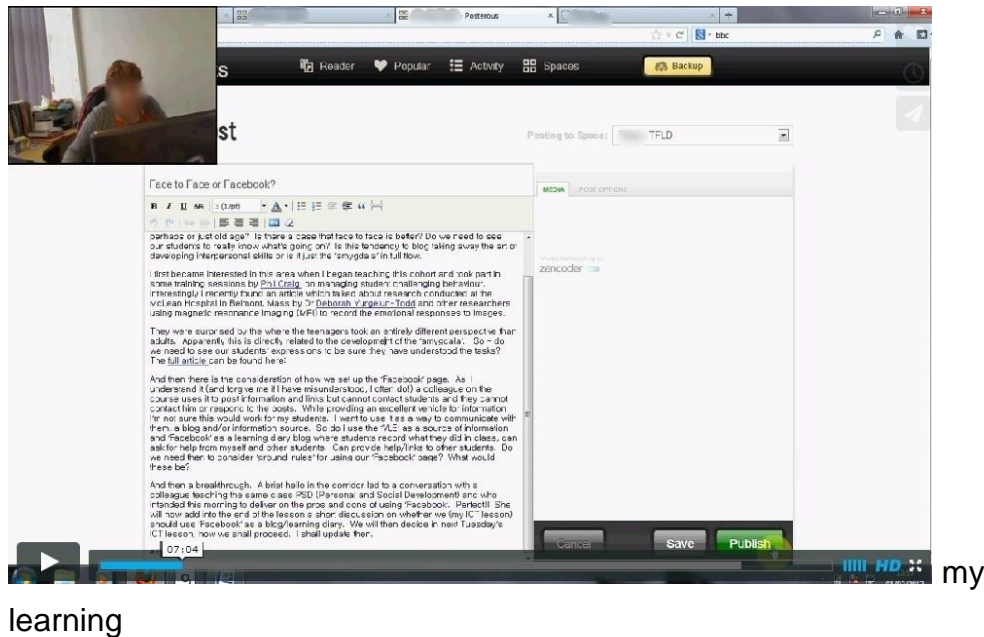


Figure 27: Screenshot of Anne linking a blog post to her digital portfolio

In the below vignette, drawn from the video log and field notes, we can see practices hailing from these assemblage identities being mobilised into this digital literacy event. These practices are crucial to the assignment, and are further explored in the next chapter in light of the theoretical approach adopted for this PhD study. The vignette shows that she often refers back to the criteria to decide whether a reflection is worthy of being included in the digital portfolio:

The digital portfolio is not a single piece of work; it is stored on the Moodle, as a wiki. It is a kind of network she has assembled of 400-800 words covering the criteria and ‘signposting’ to other texts on the Internet. A characteristic feature of this is the connection she makes with her Twitter account: she selects the word ‘twitter’ from the text,

and 'Insert/Edit link'. She is embedding a link to her Twitter account.

She goes back to the 'Digital Portfolio' main page, and then to 'Get enthusiastic...CPD' then 'Edit'. With the text she copied before (the text is still selected), she copies it again and tries to paste it in the 'HTML format' box in the 'Digital Portfolio' tab ('Edit' option). This is not working ('Copy/Cut/Paste is not available...' small window appears).

She experiences difficulty copying and pasting: 'The foibles of jumping' [from the interview] when working with multiple tabs online. She repeats the process again (Copy-Paste) and ends up with same result as before. A window appears again informing her about the problem, she clicks 'Cancel' this time. Copies the text again and she copies it from Word this time – it works. She immediately saves her work.

The signposting and linking of elements in this way forms a key strategy of Anne's as she tries to avoid duplication of work and tries to draw from her own personal blog and personal social networking activity for her digital portfolio. This type of activity can be characteristically described as curation (see Chapter 7 Section 7.6), and relates to how Anne selects, organises, and (re)presents content for her digital portfolio. Digital literacy events from the past and present and their contents are thereby curated by Anne for her assignment and old texts are given new life. The digital portfolio itself is heavily curated, rather than written up on a blank page 'from scratch'.

This is because the digital portfolio is a space, an environment, in which an assemblage is formed by Anne. Her selection of what to include – and what not to – is of note, as the digital portfolio is shaped by Anne's digital literacy practices. She seems readily able to mobilise and utilise content from various domains (work, study-related, and home) and integrate them into her digital portfolio. Yet the digital portfolio itself, in turn, influences Anne's overall practices with digital literacy in her out-of-college life with the kinds of boundary crossings discussed above.

5.7 Writing through the assessment criteria

As the digital portfolio develops into a network of connections Anne has made, as a standalone document it becomes quite short in length due to the links with other online texts and Webpages. In addition to this Anne employs another writing tactic. She also copies and pastes the criteria of the digital portfolio, the assessment rubric, directly and then writes her own text beneath it, then deletes the criteria which she earlier inserted. This is shown in the vignette below, drawn from the video log of her recording:

Anne then copies the text of the assessment criteria, pastes it into the text box meant for the digital portfolio, and then intersperses her own writing through it: a form of scaffolding, writing within writing. When asked about this later, she said it is because she has “a real problem with memory” [from the interview].

The text of the assessment criteria eventually becomes deleted as it is eaten up by her own writing, at which point she feels satisfied that she has addressed it enough in what she has written.

The text she writes is as follows:

‘To enable me to contribute to professional communities, I joined and set up a profile in ‘twitter’ and ‘LinkedIn’ several months ago. I initially set them up following discussions with peers and my tutor on the ADTELLS course last year but I did not really consider the content of my profile nor participate to any great extent. Although it is still relatively early in the Technology for Learning Delivery course, class discussions have led me to look at my profile on these sites and to consider more in depth my ‘internet presence’.

Choosing a font becomes an issue, copying and pasting text across incompatible platforms such as from ‘Word’ to Moodle’s ‘html text editor’ can be, as Anne declares, “Oh... So frustrating” [from the interview]. This is because text from one domain (Website) contains ‘baggage’ (hidden formatting code) that is retained with it to the new platform (Moodle html text editor) when it is copied and pasted. Anne

needs to copy-paste it into notepad, then copy-paste it all again into Moodle.

Anne engages in this practice to ensure that she meets the criteria by having it right there in front of her as she types content for the digital portfolio. We see this thirty minutes into the recording, when the digital portfolio is visible for the first time on the screen via the Moodle interface (figure 28):

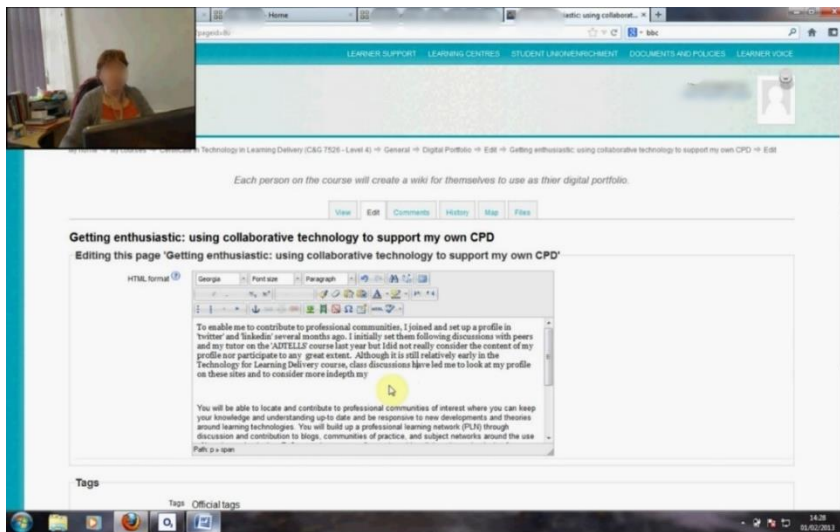


Figure 28: Screenshot of Anne writing through the assessment criteria

Anne talks about this strategy, of copying and pasting the assessment criteria directly into the digital portfolio and writing over it, in the discussion we had:

Anne: Also I have a real problem with memory, so what I tend to do is I have things like that [the criteria] so I'm cutting and pasting and I can work my way through and say yep right ok for that, and then I delete it once I've written what I need to do about it. So it's kind of a reminder, rather than looking at different things and moving backwards and forwards – that doesn't work with me. But subsequently I have stopped doing this now, and the digital portfolio is much simpler than what it was as I link from it instead of writing lots.

Ibrar: You had problems copying and pasting into Moodle didn't you?

Anne: Yes, again these are just the foibles of jumping between things.

The strategy of using the assessment criteria as a form of ‘scaffolding’ is shown in the screenshot above. Anne types through the words of the criteria and attempts to address its requirements, and then subsequently deletes it. Here Anne has forced a *recontextualisation* of the criteria, through her translation and interpretation of it, mediated easily by the digital media available to hand. In this vein, an assessment criteria that must be adhered to is a powerful actor that has become transmitted across social boundaries via the dynamism of this assemblage. It forms the parameters within which Anne’s assignment is to be judged to have met the assessment and course goals, it funnels her disparate practices.

We can also view this as part of the ‘life history’ of the assessment criteria as it takes new life in new situations as part of its trajectory. As this recontextualisation takes place, Anne adds and deletes elements of meaning in her interpretation and endeavor to address its dictates as part of the assignment. This is an important moment in the chain of practices leading up to the completion of the assignment as in recontextualising the criteria she attempts to carry their meaning – as she construes them to be, anticipating how they will be understood by the assessor who receives her work – as part of her goal to complete the assignment as best she can.

What occurs in the above vignette, and immediately following it, shows a piecemeal completion of the digital portfolio assignment with chunks of text reformulated from the criteria into reflections and links to other pieces of text. Anne copy-pastes the criteria for each of the five assessed aspects of the portfolio. Those aspects are shown in the screen shot earlier (figure 9) and reproduced here as follows:

1. My Learning Plan
2. Getting enthusiastic: use collaborative technology to support your own CPD
3. Staying safe with technology
4. Harnessing the enthusiasm of your students

5. Spread the enthusiasm: use the skills you have developed to support colleagues' use of technology in learning delivery

Slightly later on, nearly fifty minutes into the task, we see another clear example of Anne writing through the words of the criteria; using it as scaffolding for her own words, in order to ensure that she is as close as possible to its requirements. Also, during this period, there are four tabs open in the browser, and she navigates across them drawing inspiration and ideas. She writes about the viability of the LinkedIn and Twitter platforms, and how they have supported knowledge development as part of her professional practice. This text, as we shall see next, also becomes incorporated into the digital portfolio as well.

5.8 'The foibles of jumping'

Anne multitasks extensively during her writing for this assignment. She repeatedly switches between tabs and programmes throughout as she maintains a series of connected and concurrent tasks on the screen. Of course, as she operates on a single screen, only one task is foregrounded at one time. This multitasking is needed partly because the assessment criteria's injunction to 'signpost' demands it and she can flick through the various tabs and windows with ease, but also (as substantiated in our interview afterwards) features as her strategy. But is not always easily achieved:

Ibrar: You had problems copying and pasting into Moodle didn't you?

Anne: Yes, again these are just the foibles of jumping between things.

The movement between tabs, Webpages, and platforms does not always go smoothly and Anne refers to this as the 'foibles of jumping'. Choosing a font and copying and pasting text across incompatible platforms (from 'Word' to Moodle's html text editor) is problematic as text from a website contains hidden formatting code that is embedded within it and retained

in the new platform (Moodle html text editor) when it is pasted. She persists in trying to copy-paste into Moodle from her blog and eventually attempts what is otherwise a simple procedure via a basic word processor, and it is successful. Web-based platforms are not always interoperable and apparently simple things like Web text can be loaded with hidden elements of code which may not be compatible with another platform (in this case, Moodle). Here, the text and the software governing its arrangement and presentation in a Webpage are all part of the assemblage which then requires the mediation of another actant – a basic word processor – in order to insert text into a Moodle interface. An apparently simple procedure is made difficult and requires a creative and improvisatory ‘work-around’ by Anne, and mobilisation of another actant along with some improvisatory digital literacy practices to achieve this.

5.9 Summary

As Anne writes – or curates – her digital portfolio, we can see a host of inter-related elements being juggled and co-ordinated together. She manages to *recontextualise* previous texts, breathe new life into them and give them a new purpose. At times this was merely a fine-tuning of something written at a different spatial and temporal location to the current digital literacy event. On another occasion it was her practice of writing through the assessment criteria as a type of scaffolding, and adroit invoking of a text editing tool as a work-around. Events of the past become implicated and enrolled as actors in this current event, as part of the sociomaterial assemblage. Past texts are brought in as powerful actors to shape and direct the current writing task. What happened previously is stored and used carefully as it represents a certain type of validation and relevance to the current task.

We are drawn to the future too, as Anne’s ongoing Twitter account becomes linked to this task, something she employs exclusively for professional purposes. Events, subsequently, emerge through other events and practices, *ad infinitum*. This does not always work out as she intends as sometimes different ICT platforms and browsers appear not to be compatible,

and she refers to this as ‘the foibles of jumping’, and require the mobilisation of other actants, which in turn make digital literacy demands on Anne. These can be understood as tasks within tasks, or literacies nested within literacies, a notion explored in more depth in the next section. These aspects of her work and similar instances in other cases are explored in more detail in Chapter 7 of the thesis, Section 7.3 of which relates to these kinds of ‘tasks within tasks’ in assignment writing.

Her digital portfolio subsequently follows a piecemeal type of completion, with elements carefully selected, reworked if necessary, and incorporated as she negotiates their relevance with the criteria. This means she can work on her assignment in almost any location and with any suitable device (smart phone, tablet, etc.) if necessary. Yet in our interview discussion, she insisted on a ‘clear delineation’ of work/study and home activities when it comes to her practices of digital literacy. In this way her entire work is self-organised in her own environment and with her own tools and techniques.

As I have become more familiar with Anne following this assignment task, I noticed how her appetite for blogging and reflecting online to her colleagues has increased. During the course she reflected and blogged after almost every lesson to evaluate how a technology was received by her students or utilised for her own study practices, and on other topics such as plagiarism and copyright in digital environments. These ongoing reflections are an indication of her growing confidence with digital media as a professional FE teacher, supported by her student and development activities.

Chapter 6: Case-study 3 'Paulo'

6.1 Introduction

This site of Woodale College is in another borough of the region to the site of case-study 2, and was a separate college before the regional merger of the sites into Woodale College in its current form (see Section 5.1). This has resulted in a large general FE college with main campuses located in two busy adjoining towns. This particular site is situated within a complex multicultural milieu and has a student cohort that mirrors the ethnic mix of the local population. According to the most recent Ofsted report at the time of the research, the college's enrollments are mostly at foundation level, and in the vocational areas of retail and commercial enterprises, engineering and manufacture, and health and public services.

This site of the college, unlike the site of case-study 2, also has a substantial range of courses catered for learners aged 16-18, with over 4000 of such students enrolled at the college, exceeded only by adult learners (19+ years). The college's strong provision for 16-18 aged learners, alongside recent developments to its ESOL provision and how these are supported by a strategic ICT development initiative, have lead me to focus on this particular course as a third focus of inquiry for this PhD study. This chapter presents an analysis of this case-study with vignettes gleaned from data sources (field notes and video log) alongside interview extracts where necessary.

6.2 ESOL and ICT

The course for this case-study is an Entry 3 to Level 1 'ESOL and ICT' course held at the college. The programme is described by the tutor as serving as a "bridging course" [field notes]. This means that the function of the course is to prepare students who would typically be enrolled on an ESOL course yet seek access to "mainstream education" [field notes] with an embedded ICT vocational specialism. This 'bridging' element is achieved by the learners

undertaking a 'Functional Skills' Level 1 exam at the end of the course, a qualification that is not even designed for ESOL learners. This serves as a justification of the tutor's methods and approaches to teaching the class, as she argues that that is why she is "pushing them" [field notes]; with the Level 1 Functional Skills qualification considered to be more difficult – or even unsuitable – for second language learners.

The embedded ICT vocational specialism is important to Paulo as he aspires to work in an ICT related field and his choice of course reflects this. Whilst he has no actual work experience to draw from, his practices with digital literacy outside of the college (with family, friends, and global social networks) are diverse and support his vocational aspirations. For this reason, despite the absence of a clear vocational (i.e. work experience) link to digital literacy practices in this case-study, Paulo and this course remain a suitable focus of inquiry due to the aspirational and enthusiastic nature of Paulo's vocational practices with digital media.

Additionally, the students are aged 16-18, and subsequently fall into a category of people dubbed by some (e.g. Roberge et al., 2009) as "generation 1.5". Roberge et al. (2009: p. 4) define this particular student group as "those who immigrate as young children and have life experiences that span two or more countries, cultures, and languages". The language related needs of such a student group have therefore been problematised by some (e.g. Simpson et al., 2008) as not neatly fitting into either a college's ESOL or Literacy provision. Perhaps quite appropriately then, in the 'ESOL and ICT' course for this case-study, the students are aspiring to join mainstream education upon successful completion of the Functional Skills English assessment and sit next to their native-speaking peers in the classroom rather than in a discrete ESOL programme of study.

According to the college's most recent Ofsted report, the ESOL provision yielded low attainment levels and unsatisfactory feedback in the 2009/10 academic year, with some progress having been made since then. This progress has been achieved due to the large scale attention accorded to the provision since the report, which stated that "major revisions to all aspects of provision" [from the college's Ofsted report] were required. According to the teacher of the ESOL and ICT course, some of these major revisions include an increased use of ICT in ESOL classrooms and assessment activities. Indeed, this is perfectly embodied in the title of this very course ('ESOL and ICT'). Further comments in the report highlight access to ICT resources as "satisfactory" with accessibility issues such as slow network speed which can significantly hinder students' ICT work, particularly when they attempt to log in simultaneously. This is something that was characteristically borne out in my observation the classes and of Paulo's assignment discussed below.

Notably the course ended with the tutor getting the students to evaluate the different technologies they had used throughout the duration of the course year. Using a Web-based student response system known as 'Socrative', she presented a number of multiple choice and short answer questions to which the students responded via their preferred choice of mobile device (personal or college-owned). Students had the option to log on via their iPads, mobile devices, laptops or classroom desktops in order to take part. To her surprise, the 'best' or 'favourite' choices of technologies used by the students were not the ones she had anticipated. For example, the tutor's favourite technology 'Lino.it', which she thought the students had enjoyed the most, did not feature highly in the evaluation. This process by the tutor is an important planning tool for future cohorts to the course, especially as the programme will be based in a new building with ubiquitous access to Wi-Fi for all the students to enable them to use their mobile devices more effectively. This kind of freedom of Internet access brings with it a host other issues when it comes to planning learning activities, designing assignments, even organising the timetable as locations and events are 're-assembled'; this aspect is further explored in the overall analysis of all the case-studies in the next chapter. The tutor then

incorporated the preferred choices of the students from the evaluation into the course's class and assignment activities for the subsequent year's cohort.

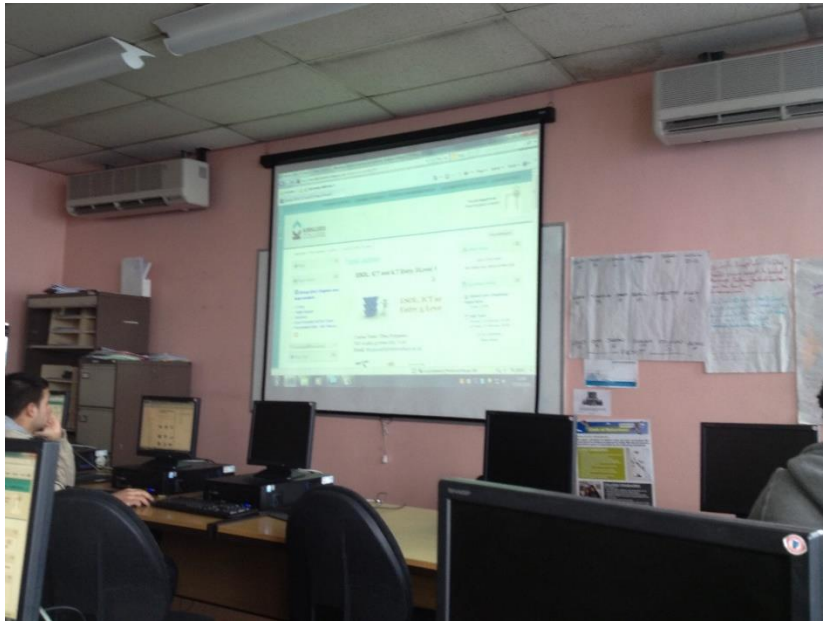


Figure 29: View to the front of Paulo's class

The following vignette is an account of my first observation at the site as I observed the class taking place, the kind of content on the course, and the general culture of digital media use on the course and at the college site generally. The first things I encountered were a moment of key-hunting to gain access to the well-guarded room and a musty smell: both of these observations were caused by the prolonged storage of ICT investments in the room:

As I observed the first session of the course I noticed that the room is arranged into 4 rows of desks with PCs for each person along the row. This makes it awkward to get from one side of the room to the other, having to squeeze behind students sat at their desks. The age of the building suggests that the room was not designed for its current computer-intensive activity. Being full of equipment, the room is always locked and even the teacher requires a key to access it for her lesson. She has to get this key from a designated person, resulting in a moment of panic immediately before the lesson as that person is not in his office. PCs make the desk arrangement more individual, the room less accessible, and give the place a musty smell.

The individualised desk arrangement means that during the lesson the teacher has to go around the different desk spaces regularly and mediate her instructions alongside machine and Web-based interaction.

Most of the classrooms in the college require a key to access them, and this is usually held at a central staff location or carried by a member of staff who will regularly use the room. On the occasion of my first observation, as noted above, the key was held by an individual who was not immediately available at the start of the lesson, resulting in a moment of panic. The unique nature of the room, being full of expensive digital investments, results in a limitation of free and open access for staff and students alike. The instance here of a locked room causing delay is analogous to the other forms of ‘locking’, ‘access’, and other barriers we see Paulo, his teacher and his classmates facing during the assignment writing process. Such locks and barriers are set up and held in place by an ICT intensive administration at the college, which serves to keep a certain type of ‘assemblage’ in order. This ICT administration promotes a culture of digitally mediated data storage, correspondence and communication, decision making, and record keeping (among other things). Its focus is primarily on ICT for managerial efficiency and effectiveness, and indicative of many administration systems in modern educational contexts (Ghavifekr et al., 2013).

6.3 Double intention

The purpose of the lesson prior to the assignment writing session is for the students to design and complete a small survey to explore their opinion of using social networking sites for educational purposes. This is to be achieved through a questionnaire to examine their ‘pros and cons’, and serves as foundational work for next week’s assignment on the topic. The brief of this assignment was handed out by the teacher at the end of the lesson, and is below:

Homework – 12.02.13

Write a report about Social Networking.

5 paragraphs.

Introduction

- What the report is about
- What I will write about
- *Use sequence markers*

The Pros and Cons comparing 4 networking sites
(Facebook, U-tube, Twitter, College VLE)

Use comparatives and superlatives

Class survey on social networking results.

Use adverbs of frequency

- 7 people blog daily, 3 weekly, 2 less than that
- 1 person uses 9 social networks 1 person uses 4 use only 1 blog and 2 people don't have a blog
- Most people use blogs for chat, fun, to send pictures and video, and to share information
- 8 people use English to blog, no one uses only mother tongue and 9 people use both

How I use social networking

Use adjectives

Conclusion - My opinion on social networking.

Use opinion phrases

Figure 30: The assignment brief - hand out version

The assignment brief, shown in figure 30, clearly delineates the wishes of the tutor in how she would like this assignment to be completed. The brief serves a dual purpose, and reflects the *double intention* of the course (ESOL and ICT), which is to: 1) to outline the topic of the task, and 2) to outline the language features required for the task. She has conveniently typed the latter in italics (e.g. “use sequence markers”). In the lesson following this one, I recorded Paulo’s assignment being written, as he drew guidance from a number of sources including this hand out, the previous week’s survey data, the teacher’s notes, and guidance as laid out in the College VLE.

Ahead of Paulo stretches one and a half hours, during which he must complete his class

project. His task is to create a spreadsheet of the survey results of the benefits of different social media platforms, and to discuss the results in a report. The following vignette account is drawn from the video log for Paulo's recording together with field notes. The purpose of the lesson is to complete the report which will outline the pros and cons of social networking sites for educational purposes, as the following outlines:

As the session begins, the teacher has problems accessing the correct link as she tries to open up the relevant file to display assignment instructions on the interactive board. An ICT technician is called in, and arrives within five minutes to remedy the situation and a display of the assignment's instructions becomes visible on the board. But his work does not end there: there is a problem accessing the college's VLE (Moodle) platform to gain access to further task instructions and supporting resources which the teacher has collated for the students to help them with this particular task. Meanwhile the teacher is going around the room reminding and clarifying about the structure of this assignment, its language features, paragraphing etc., addressing both the entire class and individual students with variations of the same instructions. This is a big deal for her; she mentions them repeatedly throughout the session.

The report which the students have to write uses data from a class survey which was the last lesson's homework. The teacher keeps reminding – even pushing – the students to access the 'Diigo roll' to find links with the relevant information to help with the assignment. Diigo is a Web bookmarking tool, which allows her to select and organise Web links as resources to then share with her students, via the VLE: a kind of curation. She mentions this many times throughout the duration of the class, as we shall see later. The students are meant to use the links to then, in turn, search for further information themselves.

The nature of the course – that is its ICT inflection – influences how the teacher conducts the class and administers the assignment. She makes the students access course and assignment related material via the VLE, and makes a point of outlining this as part of the process of actually 'doing' the assignment. She could just give the details out in hand-outs (in fact, she

does later when things go awry), or display it on the interactive whiteboard (which she also does, but eventually – see figure 31). But in the first instance, and to emphasise the ‘ICT’ part of this course, she sets a certain procedure in place, a *modus operandi* to get things done.

These instructions have been put into the VLE by the teacher for Paulo to access along with a list of links in the Diigo roll, as ‘hoops’ for him to ‘jump through’ as part of the task. The teacher could have just given them to Paulo, but, as we shall see later, she is under her own instructions to use technologies a certain way in her teaching, and has to get students to obtain information in a certain way. She, therefore, has her own hoops to jump through. As indeed do I in the writing of this chapter which is also based on a version of Paulo’s assignment far removed from Paulo’s immediate goals: the assemblage is vast and the assignment enacts a plurality of realities (see section on ‘assembling the assignment’ in the next chapter of this thesis).

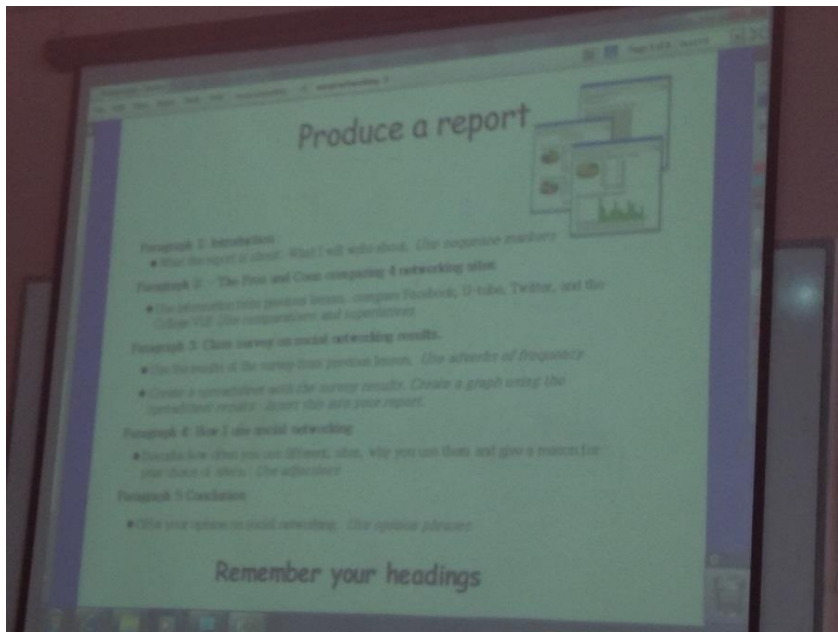


Figure 31: The assignment brief with paragraph breakdown - whiteboard version

6.4 Hoops to jump through

To get a better idea of the hoops that the teacher has to jump through and the origins of why

she feels the need to get the students to obtain information a certain way, we can take a look at a section of the college's ILT (Information and Learning Technology) standards document. This document divides the quality of ICT use for learning and teaching into three standards (bronze, silver and gold) and is used as a basis for judging the quality of ICT use in lessons during inspections and quality assurance processes. An extract of the document is depicted in figure 4, and draws from guidelines set out in two other important strategic documents of the college: the 'Strategic Vision' and the 'Vision for Learning'. They are issued to all teaching staff in both paper-based and electronic forms and used as part of lesson observation and inspection activities as well as personal development and reflective practice.

The teacher's insistence on using the VLE to organise assignment related tasks shows how diligently she intends to adhere to the ILT document's guidelines. And even her *own* enthusiasm for technology and Web-mediated teaching emerges through the college's advised procedure. For example, her usage of her preferred tool of Diigo, for selecting and organising Web links, is only whilst it is embedded in the VLE for students to access. She therefore sets 'tasks within tasks' in this way. Naturally, the assignment being about 'social networking' makes this apparently ideal supplementary activity. But according to the criteria as set out in the ILT standards document above, to achieve a mere 'bronze' level of ICT use a teacher must ensure that:

- Students actively use the VLE for resources and information
- They access the resources from the VLE during each lesson
- Assignment work support is available on-line from the VLE

(from the ILT standards document)

ILT Standards for Teaching and Learning

This document defines a set of standards which are intended to improve student opportunities for learning. The purpose of this specification is to define a set of broad goals for course teams to aim to achieve. The standards should not be seen as rigid or definitive, there is an expectation that different course programmes will require different emphasis in particular areas. For example, there would be an expectation that a language course would have a greater use of communications tools.

- Bronze defines a set of core course resources that should be available in every course. These will allow learners to understand the learning and assessment requirements of the course, to catch up on any missed sessions, consolidate learning or extend their learning.
- Silver is intended to allow students check their learning progress.

Level	Requirements for this standard	Essential/Desirable	Evidence
Bronze Access to learning Provide access to key course documents and core learning resources	The course programme of study is available in the VLE. This will include an overview or the study modules/units along with assessment requirements and deadlines.	E	A cut down and reformatted version of the scheme of work.
	The VLE course is organised and has a weeks or topic structure which maps to the actual session delivery programme.	E	The course is organised to reflect the scheme, marking it easy for staff and students to find relevant documents and information.
	Comprehensive learning resource collection includes lesson handouts, slide presentations, video clips, animations and web links.	E	Learning resources
	Students actively use the VLE for resources and information.	E	The VLE 'Participants' button shows that students are logging on regularly, throughout the academic year and making good use of resources.
	The majority of class resources are accessed and presented in class from the VLE. This helps learners because they see the tutor access the resources from the VLE during each lesson.	E	The VLE 'Participants' button shows that teaching staff regularly login to present class resources from the VLE.
	Classroom based learning is delivered using interactive whiteboard activities helping to keep learning fun and engaging.	E	Lesson observation report. Lesson observation report. Resources available in the VLE
	Students reflect and plan their own learning in the College eILP system.	D	Students using the new ProMonitor eILP system
	VLE course news forum used for notices to students	D	Forum used for course specific information/ notices and include student contributions
	Assignment work support is available on-line from the VLE	D	Assignment briefs, additional guidance and learning resources to support assignment work
	A summary of module/unit learning	D	A completed Course Summary (including key words) to enable course searching

Figure 32: 'ILT for teaching and learning' document extract

The use of a VLE at this level is as a repository of course and assignment related documentation and resources, and only at the 'higher' levels (silver and gold) is the VLE to be used as an interactive tool which provides instant assessment feedback and allows the learners to access learning and assessment material with minimal space and time restrictions.

As Paulo finally begins his work (see vignette below), we see more instances of the teacher's

insistence on the VLE, which recurs throughout the task. This is shown in the vignette account below which is drawn from the video log data:

As Paulo begins his assignment, his face has a look of intense concentration; he frowns. He looks at the whiteboard, which has instructions for the task. He looks down at a piece of paper, which also has instructions but with slightly different wording and focus to them. Earlier, the teacher had explained, verbally, the same instructions, thus catering for at least two learning styles: aural and visual. All these sources are actants that he must contend with. As well as the whirring of the computers, there are the voices of the students, discussing ideas and other, apparently unrelated, things. Momentarily, his frown lifts as he begins writing his assignment but has – upon the teacher’s insistence – had to login to the VLE to get more information on what to do: yet another actant. He acquiesces, his disapproval is visible.

As he reaches the VLE interface to get his work, he clicks on ‘Participants’ under the ‘My Course: 15–18’s Esol research’ option and then he seems unsure for a while about what to do next, until he decides to go back to ‘15–18’s Esol research’. At this point he buttonholes the ICT support person, who is already in the room and is also getting others logged on to the VLE as they seem to be having the same problem. He helps Paulo get to the right part of the VLE for his work. The ICT support person tells Paulo that he needs an ‘enrolment key’ for the course to gain access to the relevant page of the VLE for his task: yet another actant to contend with, a ‘hurdle’ designed by software engineers and implemented by an ICT-intensive administrative process.

In the above vignette, Paulo still looks confused, despite the multiplicity of instruction sources, or perhaps because of them? But his frown momentarily lifts as he begins writing his assignment. This is followed by a reiteration of the instruction to work via the VLE and to use it for information and resources. This information, and the resources, have been uploaded by the teacher and are meant to direct the content of the assignments of all the students, making sure that there is some equivalence of work across them all. But in so doing, Paulo

needs the help of an ICT support person to get access to the right part of the VLE. We also see the need here for another kind of ‘key’ (an enrolment key: a number to be inputted), which in turn will open another kind of ‘door’ (a Web page) to get to where Paulo needs to be to start his work. This, as with the key to open the room at the start of the lesson, causes a small amount of delay and frustration and also requires a designated person (from ICT support services) to enter the scene to resolve the problem.

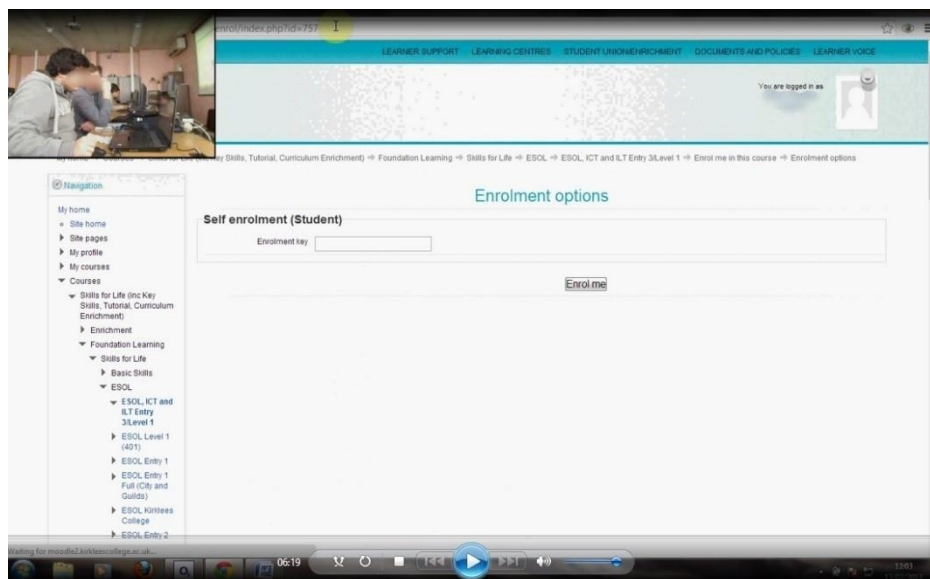


Figure 33: Screenshot of ICT support person helping Paulo to access the VLE

There are two salient issues which emerge at this very early stage of the assignment: 1) The need for ‘keys’ to access blocked areas, more of which we shall see later; and 2) The insistence of VLE integration at almost every stage of the assignment, more of which we shall also see later as Paulo gets on with his work. All these elements are actants for Paulo to contend with, and their involvement comes from a range of agencies and forces within and beyond the college to shape the agenda ahead of him, his teacher, and the assignment.

The ILT policies dictate specifically how the teacher should use the VLE in the classroom. It subsequently shapes a particular type of regime which is backed up by a cadre of the college’s ICT administration who hold the keys (both physical and digital) to access spaces (also

physical and digital), and held in place by a continuing professional development (CPD) process which heavily encourages, and even enforces, an agenda to utilise the VLE as part of what is deemed as effective practice. The structuring effect of the policies and CPD regime for staff originate from the strategic vision and vision for learning documents and improvements directed in a recent inspections report (the ‘major revisions to all aspects of the provision’ stated in the introduction to this chapter). These agencies, in turn, are meant to lead to a particular type of assignment product for Paulo at the end. An assignment whose content is drawn from pre-selected and curated resources placed in the VLE, and organised using Diigo to attain a certain level of equivalence across all the students’ work. But this this knock-on effect is not without gaps, overlaps, and non-coherences of practices. We can see these as chains of associations that attempt – or come close to providing – a stable assemblage through which education processes become entrenched in unacknowledged steps, alignments that are not always aligned, and connections that are sometimes tenuous or unreliable. Power, in this respect, is not intrinsic to a human or non-human actor, but a result of the relations; it may, therefore, need to be overcome or circumvented by the *irruption* (see Chapter 7 Section 7.2) of new actors.

6.5 Disobedient technology

New digital tools, ICT investments, more connectivity, differently designed assignments, etc. all bring differing alliances and assemblages, and ‘new’ ways of doing student work. Forgetting the key to the door, a password, or seeking out the person responsible for them demonstrates a system that is not aligned strongly enough with its various connections. Actors such as policies, which hail from such things as strategic visions, are written for particular types of alignments of people and things, and these may not travel well when new scenarios with new actors are involved, as we see in the next vignette which is drawn from the video log data and field notes:

Six minutes into the task, things are not cohering and no meaningful

task engagement has occurred yet. The teacher seems a little frustrated because of the delay and confusion, as does Paulo, and even the ICT support person. In the meantime a student has to leave the class in order to find the person who can provide him with his password. While waiting for that, the teacher tells everyone to work on their reports. Paulo goes back to Microsoft Word and starts typing again “in my report...” He looks at the paper with his notes for a second that he now places in front of his keyboard, and goes on typing. Meanwhile the teacher gently chastises a student who has no survey results to work from as he was absent yesterday. A typical chaotic classroom.

Immediately prior to this Paulo was waiting for instructions, experiencing a loss of attention, and for a short period of time was not connected to the task in any meaningful way. The teacher was getting frustrated by this delay and confusion; this was not helped by the fact that a student then had to leave the classroom to find the person who could give him his password to log on to the VLE. The need for a password is another obstacle which causes a small amount of disruption, just like the keys to the room and enrolment key before it.

We can view these as instances where some sociomaterial actants do not wish to cohere or work according to the script set for them in such things as the teacher’s plan for the lesson. Their disobedience renders further actors (such as the ICT support person) to ‘irrupt’ into action to maintain the apparent coherence of the dramaturgy of formal learning. When this entrance of the ICT support person causes a delay, Paulo senses frustration from all sides: from the teacher, the ICT support person, and doubtless his own too. This ultimately impacts on how efficiently he facilitates his work flow from this point onwards in the assignment, as it finally gets underway. But not just Paulo, the workflow of the teacher and the entire group is disrupted by this and the other student’s password difficulty.

We can turn to Latour’s fictional account of the failed technology of Aramis (Latour, 1996,

discussed in Section 2.5.2) to understand how a technology can be ‘disobedient’ or ‘disloyal’ to the interests of humans, by a search for the “dismemberers of assemblages of humans and non-humans” (p. 74). A technology, Latour argues, does not fail (or act disobediently) because of a particular actor’s inherent failing, but rather due to a multitude of actors’ failures to sustain inter-dependence and “sociotechnical compromise” (p. 101). In his account of Aramis, inefficiency of the initiative, and subsequent failure, were caused by the number of actors not envisaged at the beginning of the innovation project which also then failed to cohere in any meaningful way. Latour argues that Aramis as a system failed not because of any one particular actor, but rather because the actors as a whole failed to sustain the project’s overall aims through negotiation and adaptation. This can also be the case with this institution’s insistence to use the Moodle VLE as it is also a technological project and initiative imposed on all staff and students. But as a force the managerial diktat (via policy documents, etc.) is not enough, a series of weighty actors need to hold the system steady (password protected Web pages, etc.), resulting in a tension of: *incorporation* - the dominant system engendering compliance from subordinates, and *excorporation* - subordinates appropriating the resources and commodities provided by the dominant system for their *own* practices (Fiske, 2011).

How Paulo copes with this emerges throughout his writing for the assignment, and is characteristically borne out in the following vignette drawn from the video log:

Ten minutes of the class have now elapsed. Paulo switches windows from Moodle to Microsoft Word which contains his report, and alternately types and looks at his notes. He has to go back and forth across different Webpages and his Word file which has received little attention thus far as he has spent the last few minutes merely getting organised and figuring out what to do. When he does get into the flow of writing, he receives an interruption: he is asked to return to the web page in the VLE. He scrolls down and clicks on ‘Homework 12-02-2013 Social Networking Report’ to download the file (right click – ‘Show in Folder’) and then he drags it on his desktop. He opens the file, then goes back to his report and continues typing. The teacher directs

everyone to look at the extra information on the board, which lays out the paragraphs for the report. Worded as follows on the slide:

Paragraph 1: Introduction, what I will write about

Paragraph 2: The pros and cons, comparing 4 networking sites

Paragraph 3: Class survey on social networking results

Paragraph 4: How I use social networking

Paragraph 5: Conclusion

Paulo then focuses on the look of the page, tweaking its layout (margins, font etc.) as he types. This lasts into the twelfth minute. Whilst writing his report, he looks at his notes, pauses momentarily, then writes about how Facebook, Twitter, and Youtube are the most popular social networks. He does this continuously.

Meanwhile the teacher is heard in the background giving instructions, reminding students of what is required. Paulo is looking at his notes the whole time while typing. Spell checker interrupts often, he acquiesces, but one of such 'corrections' leads to another mistake albeit not a spelling related one.

In the above vignette, Paulo refers to the 'Homework' file to check if he is doing it right or to see what to do next, then goes back to his report. He starts a new (third) paragraph, opening with 'In my opinion' since he is supposed to use opinion phrases (stated in the homework file he has just seen). The interruption he receives is to remind him of the suggested paragraphing for the assignment. This draws from the influence of the functional skills English agenda attached to this course and the looming exam which causes concern for the teacher and most probably Paulo too. So he is now using the assessment criteria to influence and shape his work: he is perhaps thinking about grades, his parents' expectations, and his future career.

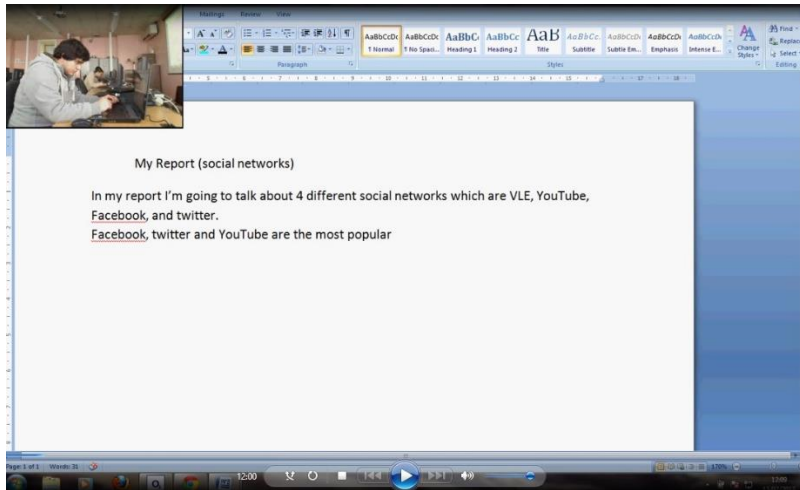


Figure 34: Screenshot of Paulo trying to shape his work according to the structure set for him

In the vignette below, and still early on in the assignment, Paulo has another interruption, this time by the teacher who now asks him to follow the rubric and correctly format his document before starting the word processing assignment:

*Twenty-five minutes into the task, the teacher stresses the format of the report and its structure, again! In response to the teacher feedback, Paulo edits his report. He writes 'Introduction' above his first paragraph. He highlights it and puts it in bold and italics: ***Introduction***. The teacher also reminds him about more things he needs to consider in his report (e.g. the differences and similarities between the various social networks), and how he must draw inferences from the spreadsheet. At this point his introduction is only one line and a half whereas his second paragraph is very long. The teacher also tells him about the kinds of comparison he could make – or should be making – as part of this task. What he had written prior to the teacher's intervention is now being shuffled into sections and labelled as 'paragraph 2, paragraph 3' 'conclusion' etc.*

This is another interruption, and there are more to come, in which the teacher re-reminds Paulo of the kind of writing he needs to do and how he needs to do it. I wonder whether the teacher had weighed up the options of allowing Paulo to continue and then correct his work later, or whether she felt that it was better to get things right the first time? This represents

another vital element of this assemblage scenario: lots of small tasks and instructions nested within a greater and more important task, in a *Matryoshka doll* type relationship. The main task in this situation is, of course, the assignment. But within it are nested many other tasks which Paulo is continually reminded about and require a certain level of capability: scaling the Diigo roll for links to readings, addressing the language and grammar elements explicit in the rubric, etc. Some of these tasks within tasks are less explicit, and part of the dramaturgy of formal learning: skills of navigating around the VLE, interpreting different types of assignment instructions, etc. The work for these other, nested, tasks is instantiated by different digital literacy practices. In many ways, this class assignment can itself be seen as an event within greater events beyond it, as part other assemblages at different times and locations: a collateral reality in the life history of Paulo. Perhaps an incidental product, perhaps to be forgotten in later years, but nevertheless necessary for Paulo's future life and career.

This assemblage gets even more complex in the next vignette, where Paulo mobilises other actants for help:

Half an hour has now passed since writing commenced. As this is a language-related task (ICT and ESOL), Paulo has to use 'adverbs of frequency' (often, sometimes, rarely etc.) in this assignment; this is explicitly stated in the assignment outline, and stressed by the teacher. Paulo sprinkles these into his report. He then turns to Google – another actant which irrupts into the assemblage. He ends Paragraph 3 and saves his report (again), closes both his files, and looks up at the board and around the room. After sitting silently for a few seconds he then types 'social network' into the search bar. He selects 'Social Networking Service – Wikipedia', reads the text, scales the menu, then Google Portuguese (www.google.pt); he types in Portuguese: 'redes sociais percentagens' [trans. social networks percentages] and visits the sites Google suggests. This is followed by another search with: 'redes sociais mundo' [trans. social networks world]. He then clicks on the first site that appears in the list and takes a look. Followed by: 'lingua redes sociasi' [trans. language social networks]. He reads a

related article he finds now (in Portuguese, and about Facebook). Meanwhile the teacher reminds the class about how to use comparatives in the report.

The teacher wants the students to utilise the resources on the 'Diigo roll' which she has prepared in a page of the VLE. This is a list of links to supportive resources which she has uploaded onto the VLE so that the students do not have to randomly search the Web for information and potentially write something that is not appropriate for the task. The Diigo roll makes sure they all have access to more or less the same set of content for the assignment. Paulo accesses it, and the Diigo link has not worked, but Paulo has already been hunting for information through Google on his own.

In the above account we see Paulo going about his assignment in a way he sees most appropriate for himself, even using his first language to aid him during Google searching. The instructions and directions to do things 'properly' persist. Paulo hears and sees all of this, yet yet quite perfunctorily continues on his path. His and the teacher's immediate goals always remain the same: the completion of the assignment.

The teacher then opens up the previous lesson's work, and its contents are utilised, especially the formatting and numerical data aspects of it. Extra 'help' is put on the board through a breakdown of the writing project's paragraphs, as suggested by the teacher, who again directs everyone's attention to the board: *Paragraph 1, Paragraph 2....Paragraph 5, Conclusion.* Transferring the content of his notes onto the screen, the teacher then approaches Paulo to monitor his work activities (see figure 35). There is a juggling of several elements in getting the assignment done at this point, as Paulo interfaces with various actants in the assemblage. This is another instance of the kind of Matryoshka doll nesting of tasks discussed earlier:

1. His notes from a) the last session, and b) added to in the current session.
2. The survey data from the previous lesson, which he interprets in the discursive text

of his report (see figure 36).

3. The content on the board.
4. The teacher's verbal instruction a) to the class, b) to him specifically, c) related to the language conventions of the task (paragraphing and coherence), and d) related to the topic of social networking.
5. Comments from classmates.
6. The task's written instructions from the VLE.
7. The formatting and tweaking of the page (margins, font, etc.) on screen.
8. The constant interruptions by spell checker's red lines (one such "correction" in fact selects the wrong word).
9. Web search results (Portuguese and English).
10. The writing/composing strategies of sentence-by-sentence (or word-by-word) revision or editing.
11. Paulo's prior experience and knowledge regarding classroom and assignment protocol. But also his expertise with a) cross-platform computer work (Excel to Word, Moodle etc), and b) his choice of social networks to discuss for the assignment (related to his personal learner profile).
12. The ICT support person who enters to manage Paulo's VLE login problems.

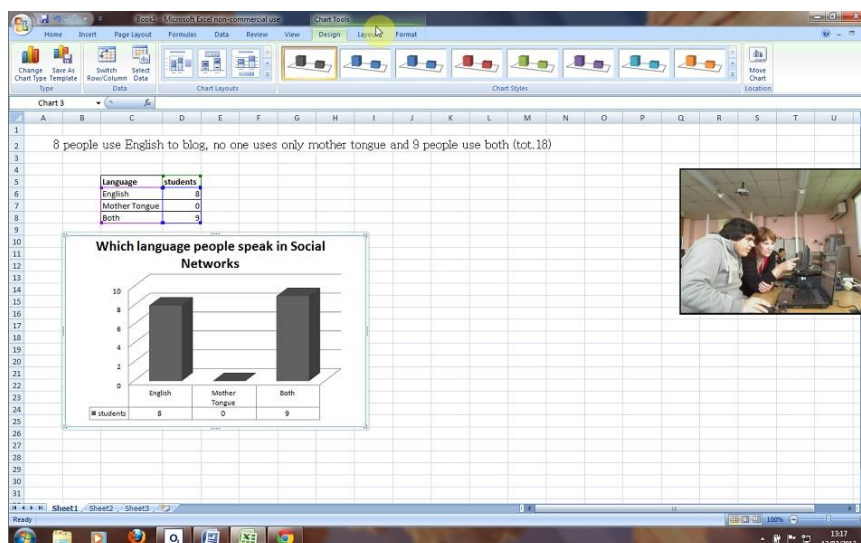


Figure 35: Paulo incorporates a graph from Excel into his assignment

The list of ‘actants’ above are some of the agential forces woven in a complex assemblage. Some of these forces are ‘set up’ by the dramaturgy of formal learning (such as formal instructions issued by the teacher), others are capricious and off the cuff (such as comments from classmates), others unexpected or due to something ‘not going to plan’ (such as the needed intervention of the ICT support person). All of these factors require a judicious negotiation as Paulo writes his assignment, creates a chart, incorporates it, writes about how the social networks are useful for him as a student, and finally submits his work both *despite* and *because* of their involvement. His multitasking is remarkable, even though he probably feels as though he is floundering.

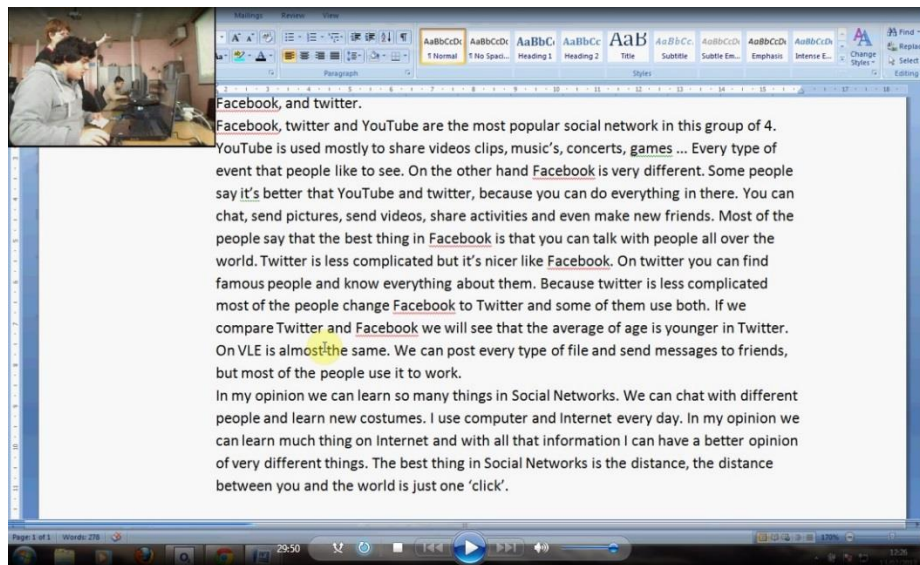


Figure 36: The teacher refers to the whiteboard instructions for formatting and organising the paragraphs

In figure 35 we see Paulo’s chart in Excel. In the following vignette account, drawn from the video log, we see how Paulo struggled with this, and how he was directed to a screencast to help him create this visual from numerical data and then import it into Word for his report:

An hour has now passed. Paulo is trying to create a chart. He chooses a ‘column’ amongst the options he is given. The column appears (‘Students’) with percentages (language students use). He tries out

different styles for his column. This leads him to struggle when working across Word and Excel, as he figures out what to do in order to design the table (in Excel), then create a graph, for use in the report. Transferring data from 'homework' file, to Excel table, to a graph, then to discuss this in the report.

In order for Paulo to complete his assignment, the way the teacher instructs, he has to access a video screencast (or screen recording), via the VLE (again!) which demonstrates how to make graphs and charts from numerical data entered into Excel. The screencast tutorial outlines how to make graphs and charts from numerical data entered into Excel. The teacher does this for him, whilst talking him through it. She directs him and the rest of the class to the help (for the project) she had already placed on the VLE for them to access in order to complete the assignment. It was there, just not organised clearly enough for Paulo to navigate his way through the pages easily enough to see it. But the Java plugin to play the screencast is not working. Paulo asks for help from the teacher with the site; she then takes the mouse from his hand and actually does it herself whilst explaining it to him.

At this stage Paulo must incorporate some Excel data into his report, but this requires making a graph, the procedure for which is outlined on a video tutorial he must now watch. The tutorial itself, however, can only work with a Java plugin installed on the machine – which fails to work. The teacher then takes the mouse off him and does it for him, whilst also explaining it to him as she does it. This is about her keeping her 'plan' for the lesson in place and not allowing non-cohering actants to get in the way of her agenda for the lesson.

As the session draws to a close, Paulo must submit his work. Again, a certain procedure is required in order to achieve this; again, Paulo does it his own way. The vignette below makes this clear:

The lesson is coming to an end, and a crucial part of the project: submission process and procedure. For the final part of his assignment,

Paulo must upload his work to the VLE. This is the only way it can be submitted, and the teacher does not allow the students to email it as an attachment. Yet she receives several simultaneous requests for clarification on saving the assignment and uploading it on the VLE. All these voices represent their own complex assemblages of concerned student stakeholders, managers' diktats and procedures, and employee protocol. The teacher says, "You need to save it in your library in the VLE, not your SkyDrive. For some reason, they are not interlinking, so you need to save your work to the VLE. And please don't save it in your email".

Paulo spends a couple of minutes going through the different options to find the section where he should submit his file. Finally, he decides to save it by sending himself an email with the report and graphic as an attachment. Then he uploads it as he should, as well as sending the email to himself. The teacher chastises a student for leaning back on his chair, and instructs the students to reflect on this task in their blogs.

Paulo reflects in his blog at the end about this assignment:

"I didn't learn new work but I learnt more things about Excel. I think it was interesting. Today, I was a bit confused but I think I did it well."

Given the multiplicity and competing agendas of all the actors and actants at work; given the complexity of all the networks, visible and invisible; given that all neat pieces of work, course assignments and all ostensibly ordered systems – even the universe itself – result from messy beginnings, I too think he has done very well!

Here, again, we see the VLE emerging as an actant, this time to influence the submission process. Paulo nevertheless emails the document to himself, contravening the teacher's instructions, but then submits it via the VLE also (following the protocol set by the teacher). This is yet another, and final, instance where the 'doing' of the assignment has other tasks nested within it – via the structuring agency of the ILT policy of the college. Yet some of these nested tasks are supererogatory and done as a matter of course rather than as a necessary part of the assignment's actual completion: the dramaturgy of formal learning.

6.6 Interview extracts

In this section I will further explore the kinds of themes which emerged in my discussion with Paulo about his digital literacy practices across the domains of work, college, and home as well as to help elucidate some of Paulo's assignment-related writing activities in situ.

When asked to recap on how he wrote the assignment and the kind of research he undertook and background knowledge he used to complete it, Paulo confirmed as follows:

Paulo: I went to the Internet and I've searched what they [social networks] are, what they do, what are meant to do, you know what I mean? So...what they are created for. But ermm I found that there's a lot of difference between them for what you can use. Cos you can use Facebook for more professional things too, and Twitter is like more personal ... personal.

The idea that social networking tools have set purposes which they are 'created for', influences Paulo's personal use of them and his discussion about them in his assignment. The former issue was explored further in the interview, in order for me to get an idea about what he does at home and how this may feed into what goes on at school (or vice versa):

Ibrar: Do you think you have skills from things you do with digital technologies outside of college, which you use to help you inside the college with classwork?

Paulo: Yeah yeah

Ibrar: Like what?

Paulo: Like, searching the Internet, searching for new sites, or to make a presentation. Most of the time my mates or my family ask me to help them to use the computer to make Word [files] to make presentations, to make things. My mum for example asks me, and I help her. I know new methods to do these.

Here Paulo offers a glimpse into something he does for his mother at home, and how he feels he can try or test ‘new methods’ – presumably learned at college – to aid his family’s digital activities. The kind of course that this is, and the nature of this particular assignment he did, puts Paulo in a good position to be able to evaluate what digital technologies he can use in different situations and for different purposes and to try out the best possible ‘new methods’ to search sites, make a presentation, etc. A temptation – and mine initially – is to assume that Paulo has answered the reverse of my question: that he has given an example of what he has learned at college which supports his home life. But it is equally likely that as his friends and family get to grips with English medium digital environments, Paulo’s known enthusiasm with ICT activities at college puts him in a situation where he can help people use computers at home and ultimately learn himself as he does so, giving him more confidence in the use of classroom ICTs.

When asked more specifically about the assignment, he acknowledges the benefits of using social networks outside of college when it comes to writing about them for assignments, although he doesn’t know if those particular technologies will be the subject of an assignment.

Ibrar: Tell me about how you know the social networks that you talked about [in the assignment]?

Paulo: I use them.

Ibrar: For personal or college stuff?

Paulo: Personal. I use it for personal... I didn’t know if I’m going use it [at college] or going to talk about it. I think it’s easy if you use it before, in your own time, you will know much things about it.

In line with my methodological approach for the interviews, a Venn diagram during the discussion helped us to further explore some of the intersections of practices mentioned already and their potential to cross boundaries:

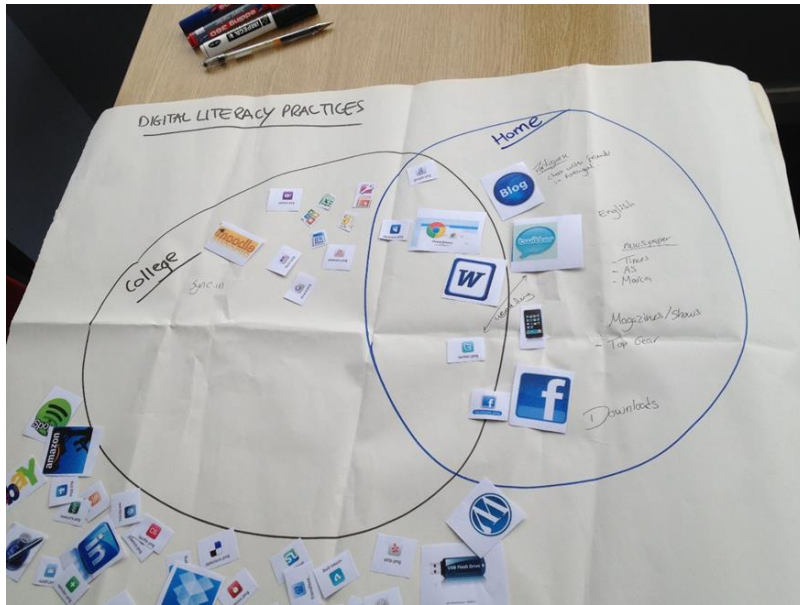


Figure 37: Paulo's Venn diagram 1



Figure 38: Paulo's Venn diagram 2

Paulo's Portuguese language blogging remains distinctly a home-based literacy practice, as he chats with friends in Portugal through that medium. Facebook also remains a clearly home-based activity, unlike his use of Myspace:

Ibrar: So Facebook is purely personal?

Paulo: Yeah.

Ibrar: Not at college? Or for college? Remember this part is an overlap [pointing to middle part of Venn diagram]

Paulo: Well my classmates try to add me but I don't use it for college. But I may use it during college.

Ibrar: But you use Myspace for both?

Paulo: Yeah. Just to talk about college stuff.

Ibrar: College work even?

Paulo: Yeah we can do.

Paulo's friendship networks extend beyond the college, and his social networking activities remain demarcated as such, with classmates trying to add him on Facebook. Notably, in a recent student survey carried out across the department by the college teachers, the learners were asked if they would prefer using Facebook for college related activities (announcements, group communication, etc.). The results were overwhelmingly negative with learners disapproving of its use 'for college' but not – as Paulo states – 'during college'. He does not deny the potential for its use to discuss and support college work ('yeah we can do that'), but sticks to the general line that they talk 'about college' on the site. Paulo's keeping this demarcation, and insistence that it is 'just to talk about college' but not 'for college' is consistent with Miller's (2013) 'Global Social Media Impact Study' on 16-18 year olds' social networking activities in the UK. In his research (carried out in the same period as the writing of this thesis and with publications forthcoming), young people are seen to search out online spaces for social activities separate from those which parents utilise and in which school activities occur. Facebook use is central to Miller's study, and the way that its popularity is apparently being diminished by this shift.

Upon noticing the design of his Venn diagram, I asked Paulo about his demarcation:

Ibrar: Would you say that there's a lot going on in your home, when it comes to digital activities?

Paulo: Yeah

Ibrar: Which doesn't come to college?

Paulo: No it doesn't.

Here Paulo's response indicates that the demarcation of functions when it comes to his digital literacy practices is a deliberate strategy, and part of the way he organises his digital life.

6.7 Summary

In summary, Paulo had entered a learning environment where he was required to perform a task after being given a set of instructions. This task required his utilisation of a complex set of tools and resources which together, as actors, form an assemblage. Paulo's response to the assignment depended to a certain degree upon how he responded to interactions between actors within the assemblage: the teacher, his expertise with the subject and the ease of navigation in the VLE, the ICT support person, etc. Some of these interactions and agencies exert a structuring force on the kinds of literacy practices that Paulo must undertake – or tolerate – during this assignment. For example, insistence on VLE utilisation at every stage (from beginning information-hunting to final submission). The importance of these literacy practices is actually negligible in that Paulo could hypothetically have completed his assignment without them (i.e. without the VLE). In fact, he may have done it in a shorter timeframe without 'enrolment key' problems and other such delays.

Paulo also shows a keenness to organise aspects of the digital literacy practices of his personal and college life in ways that suggest a deliberate separation of these domains, with Facebook used exclusively for outside-college friends and discussions. Wider ethnographic data reveal

that Paulo is not alone in this attitude to Facebook use; a survey carried out at the college immediately prior to this fieldwork showed that most of the students did not approve of the college's suggested idea of using Facebook for course-related announcements, discussions, etc.

Part III

Chapter 7: Discussion and contributions of the study

[T]he writer can only imitate a gesture that is always anterior, never original. His only power is to mix writings, to counter the ones with the others, in such a way as never to rest on any one of them.

(Barthes and Heath, 1977: p. 146)

7.1 Introduction

Each scenario analysed in Chapter 4 through to Chapter 6 investigates a learning environment in which a student performs a task using a variety of tools, instructions, and stimuli. The relationship between these tools, instructions and stimuli I have described and explored as an *actor-network*⁷ (cf. Law, 2009), or sociomaterial assemblage. *Assemblage* theory, as outlined in Chapter 2, originates from Gilles Deleuze and Felix Guattari, with the term itself as a translation of their original French term *agencement* (Deleuze and Guattari, 1980). More abstract than its English counterpart, *agencement* connotes a “tentative and hesitant unfolding” (Law, 2004: pp. 41-42) of social and material agencies (students, friends, teachers, computers, algorithms, Web pages, documents, etc.). But as a philosophical approach, the origins of assemblage could go as far back as Gottfried Wilhelm Leibniz’s (d.1716) treatise on ‘monadology’ (*La Monadologie*, 1714) which argued that for a given system there is no need to distinguish between what is ‘inside’ and ‘outside’ of it. Descriptions of entities (‘monads’, to be broadly interpreted as ‘actor-networks’), therefore begin from the simple and end with the complexity of their many, and likely to be limitless, connections (Law and Mol, 2002). Digital literacy practices can be said to instantiate these connections. This aspect is one of a number of ideas further explored in this chapter, drawing from insights across all three of the case-studies examined in this research.

In observing how the classroom assignments take shape and how Sara, Anne, and Paulo utilise

⁷ According to Law (2009: p. 146) there is little difference between the term *assemblage* (i.e. *agencement*) and *actor-network*.

digital media and other resources in their work, initial analysis reveals an ad hoc use of material artefacts and interactions with actors that are not always in situ: taking the event into different places and times in the Leibnizian sense. The employment of digital materialities thereby facilitates complex cross-network literacy practices which extend beyond the confines of the classroom temporally and spatially. How these students then productively unfold and negotiate a sociomaterial assemblage emerges as a central issue, as it is significant to the successful completion of their assignment work.

There are, of course, tensions which emerge through competing agendas in these assemblages. The existence of these tensions, and how Sara, Paulo and Anne deal with them, leads us to question monolithic and taxonomic understandings of ‘digital literacy’, where it is seen as a “tick list” of technical skills and/or a “wish list” of desired qualities (Gourlay et al., 2014). This concern with digital literacy as personal traits – as both skills and qualities of an idealised user – echoes a deficit model of literacy (a notion explored in Chapter 2 Section 2.1). This is in contrast to the concerns of this research which focusses on the actual doing of literacies in digitally mediated environments, rather than holding them against an idealised and normative perspective of how digital literacy is done, such as that which is presented in college policy documentation.

Going back to Mol’s (2002) work on how the different versions of the disease of atherosclerosis were coordinated and related to each other, and Law’s (2012) notion of ‘collateral realities’ in which he argues that *practices*, fractal and disparate as they are, *hold* a reality together, the forces which then produce an ostensible unity and singularity of any event are crucial. This is because it is precisely through these forces – or agencies – where powerful actors do their work. Some realities ‘tell’ others what to do, do not cohere with others, and push them out of the way. Managing this dissonance is dubbed ‘ontological politics’ (Law, 2007: p. 108). Being mindful, therefore, of collateral realities is also to be

sensitive to the performative effects of who (or what) is made more (or less) powerful in the creation of the assignments, through how actors are situated and their roles constituted in the unfolding assemblage. The interferences, contestations, impasses, breakthroughs etc., of practices all have the potential to yield such collateral realities (see Section 7.3 of this chapter).

In each case a student has been given an assignment to complete for assessment, the instructions and protocols for which are delivered to the student via a range of media: the whiteboard, hand-outs, orally, confirmations from colleagues in the class, received wisdom on classroom practice, VLE documents, policies and procedures on ICT use, etc. Each student's relationship with their assignment represents an assemblage scenario comprised of these disparate and sometimes competing actants involved in its completion. These are stimuli which are constant and have a value to the assignment and its end purpose (as its collateral realities). These are, at times, contested by the student and other actants of the assemblage (e.g. the institution's established and explicit norms of practice) but otherwise have an important role to play in the assignments. The subsequent digital literacy practices which ensue paint a picture where there is little which is exclusively 'academic' or 'vernacular' in the way of digital literacies for the assignments.

Therefore what follows in the coming sections to this chapter builds upon these points through a thematic discussion of current trends and developments in the fields of Literacy Studies, the Learning Sciences and social research methodologies, and their relevance to the insights and findings gleaned from the three case-studies to these themes. Data are not represented here, except where the theme being discussed in light of the review of the literature (Chapter 2) relates directly to insights discussed in chapters 4 to 6, and a reproduction of an extract of data is deemed necessary to illuminate a point. Each aspect discussed in the coming sections also represents an original contribution of this PhD study, and a new or developing area of

thought. Some of these contributions are empirical and have the potential for demonstrable impact on pedagogic practice, others are theoretical and have the potential to open new directions in research and understanding of how literacy and learning are carried out.

7.2 Digital media and literacy practices: instances of ‘irruption’

The notion of ‘disruptive’ technology proposed by Christensen (1997), and discussed in an earlier part of the thesis, is a framework to understand the effects new technologies have on activities and infrastructures. Christensen (1997) claimed (see also Christensen et al., 2011) that a disruptive innovation (or technology) is one that eventually replaces a previous way of carrying out activities, or a hitherto dominant technology in a particular context or market.

As novel ways of doing things and new technologies replace older methods of carrying out the same activities, researchers are led to explore the radical reshaping of society that emerges, and the performance of new social practices. Following this, Hedberg’s (2011) wider framework of ‘disruptive pedagogy’ looks at the impacts of technologies on education, and how new technologies disrupt institutional structures and traditional learning and teaching procedures. Disruptive pedagogies represent a way to understand how traditional and dominant methods and tools of learning and teaching can become dislodged by the incorporation of new technologies and innovative educational practices which instigate disruption.

Haxley (2012) in her PhD thesis on the practices of text counselling argues that to refer to new technologies as ‘disruptive’ is a “retrospective ... and positioned naming” (Haxley, 2012: p. 242), as the label of disruption is limited to the perspective of “those whose experience is disrupted” (ibid). She further argues that “[j]ust who is disruptive, manipulative, resistant, troublesome ... obliging, cooperative, or willing, very much depends on whose reality is being

expressed” (ibid). Haxley’s contention about the limits of disruption as a way to understand practices is borne out in the data for the cases in this study. This is because for learners whose habit it is to prolifically text-message and use social networks etc., their use of these media (and the digital literacy practices which emerge) during the writing of assignments is not at all disruptive, as that is their usual way of doing things. Therefore, for them there is no disruption if we take a learner-centred and practices-based perspective.

Furthermore, a one-sided and even somewhat passive notion of disruption is reflected in the aims of the Education Technology Action Group (ETAG) which was set up by the UK government at the time of writing this thesis (January 2014):

The Education Technology Action Group ETAG will aim to best support the agile evolution of the FE, HE and schools sectors in anticipation of disruptive technology for the benefit of learners, employers & the UK economy.

(Education Technology Action Group, 2014)

Drawing on ANT I have attempted to draw attention to how the assignments are assembled and constructed in and through a heterogeneous sociomaterial assemblage. The heuristic lens of Literacy Studies further lead me to put the practices of the assignments as the locus of enquiry, and not an *a priori* conception of ‘digital literacy’ or a notion of disruption from an institutional perspective. This is to avoid the tendency to see disruption as a ‘positioned naming’ as Haxley contends, and instead to see the practices as drawing from their own world(s) and creating new ones. In other words, they ‘irrupt’; a notion further explained below.

In focussing on the literacy practices of the assignments, an assemblage framing leads us to ask: is it the instalment of ICTs which transform learning experiences through their essential affordances and subsequent disruption, or is it the *literacy practices enacted in and through*

their use which do? In this respect, a notion of digital media as ‘irruptive’ (and not merely ‘disruptive’) is presented as part of this thesis and is based on the finding that literacies which previously had no place in the classroom can *flow* in through their use. *Disruption* in learning and teaching, Christensen et al (2011) outline, occurs when a new technology replaces a previous technology or way of doing things; yet how the disruption occurs and the practices which cause it are another thing altogether.

Following this point of departure on disruption, and drawing from the findings of these three cases, I advance the notion of digital media as instigating *irruption* to complement to the established notion of *disruption* described above (and in more detail in Chapter 2 section 2.6.1). A notion of irruption as I present it here draws attention to how assignments can be done in a multitude of ways, with digital literacy practices irrupting in an event and mobilised as resources via the connectivity of cyberspace. The key point is that many of these digital literacy practices which irrupt into the scene otherwise may not cohere with the dominant reality of the ‘assignment’, and the kinds of literacy practices expected in its completion and stipulated as ‘acceptable’ (see extracts from ‘Acceptable Use Policy’ in Section 4.6). In this way, disruption is a technology-focussed and perspectival descriptor, whereas irruption is about the practices in and through the technology.

We can use the early ANT idea of ‘translation’ as a way to better explain irruption with respect to digital literacy practices in the three cases explored in this thesis, the instances in the assignments’ unfolding where it occurs, and the crucial roles those instances play in the completion of the assignments. Actor-network theorists view translation as causing “mixtures between entirely new types of beings, hybrids, of nature and culture” (Latour, 1993: p.10). All three participants engaged in enactments of such ‘translations’ through the complex interplay of social and curricular practices of digital literacy when completing their assignments.

Notable examples include Sara's (case-study 1) utilisation of the social networking of her personal life, instead of the institutionally validated 'Moodle' platform, to contact a friend to ask for advice on an assignment-related issue. When asked about her social networking activities, interview data reveal that its use infiltrates the contexts of her home, work, and college spheres. She positions herself in multi-faceted ways in the Web space: as an autonomous learner searching for information; as a confused student seeking assistance; as a friend asking a favour, etc. (see sections to Chapter 4 for precise examples).

The rebellious laugh at the end of the interview extract is notable, as she casually flouts the college's Acceptable Use Policy which forbids not only phone use in classrooms but also considers "social, non-educational chat" as "unacceptable content". Irruption is about 'wild and feral' literacy practices that otherwise have no place in the classroom flowing in, just as Sara circumvents a powerful actor's agency as and when she pleases. The communication Sara initiates is a personal one, ostensibly, but the context and motivation are course-related. The classroom digital literacy event is therefore a multi-layered and unbounded phenomenon with ephemeral infiltrations of Sara's personal digital literacy practices. This aspect of the boundaries of the event are further discussed in the following section.

Counter to phenomena of translation are attempts to *stabilise* or *purify* a context which can be through the formulation and implementation of standards which purify what we know to be digital literacy and how we define who is digitally literate. More explicitly, purification is enacted through the value attached to, for example, essay writing over texting and textbooks over magazines. Purification, therefore, is about attempts to exclude those digital literacy practices which are not considered standard and privilege other practices, and in doing so leading to constructs (such as the literacies of assignment writing) rendered "black-boxed" (Latour, 1987).

In Paulo's and Anne's cases, digital literacy practices irrupt in slightly different ways. Anne's personal reflections on her *own* blog form a crucial part of her assignment writing. This writing is usually about how she and her students (on the course she teaches) have responded to the use of a particular technology in the classroom as well as general posts about her professional life. This writing practice precedes the assignment and the TFLD course and yet extracts from it feed into the academic work of the assignment by her *curation* practices (see section 8.5 of this chapter). Similarly her use of Twitter is connected to the assignment as she links it to her account, and past and future tweets also become part of the life of the assignment, and its multitude and disparity of practices.

During the writing of Paulo's assignment, we see instances of irruption which relate to the first two cases, but also another slightly different type of irruption occurring. An example of the former type, and related to Sara and Anne's cases, occurs when Paulo saves his work at the end of the session. He is told not to save it in his email (by sending himself an email), but rather to upload the document in the VLE through the institutional submission process. Instead, Paulo follows the procedure easiest for him and the one which he knows best: to email it to himself. Notably this use of email is not institutional and part of his outside-college practices with digital literacy, but he relies on it here for an assignment related purpose. Similar enactments have been dubbed by some as 'boundary crossings' (Ivanič and Satchwell, 2007; Satchwell et al., 2013) and provide evidence that learners can be sophisticated users of texts outside of their college, whether at home or at work, thereby challenging the assumption that a simple 'lack' of literacy holds them back when judged against the literacy paradigm inside college.

Other instances where a form of irruption occurred into Paulo's assignment assemblage is when certain actants did not cohere or work according to the agenda set for them by such

things as the teacher's planned activities for the lesson. Three examples of instances where this occurred are when: 1) the key to the room is unavailable so the designated key holder has to be summoned; 2) some students have trouble logging in and require an 'enrolment key' to access the VLE; and 3) the Java plugin required to play a video clip does not download for some of the students.

The disobedience or intransigence of these actants renders further actors, for example ICT support personnel, to 'irrupt' into action to maintain the apparent coherence of the dramaturgy of formal learning. This dramaturgy is held in place by certain actors and their scripted practices: lesson plans, ICT acceptable use policies, etc. There is somehow always an expectation that things will never go entirely to plan in a classroom, and when these irruptions occur delays are caused which ultimately impact on efficiency of workflow for teacher and students. This kind of loss of instructional time is becoming a commonplace occurrence in colleges and universities due to the array of technologies and platforms used in classrooms and the separate login procedures often required for each (Herold, 2014). These logistical challenges have resulted in recent initiatives such as 'single sign-on' which allows a student to login to their preferred platform and subsequently access their school/college learning activity across various platforms. A California based company which has begun, at the time of writing this thesis, to offer this type of service is 'Education Elements' (<http://www.edelements.com>).

Sara, Paulo, and Anne all seemed to be performing their own unsolicited acts of translation during assignment writing. This highlights the importance of exploring if learners' vernacular practices, past trajectories, future aspirations and attitudes associated with digital literacies do – or do not – transfer effectively in classroom work. As it is classroom-based digital literacies by which learners are ultimately judged, a cruel imposition of its norms can marginalise and deny literacy practices of personal experience. Researchers, therefore, have the task of making

visible the ethnographic detail of what such local, 'everyday' and vernacular digital literacy practices look like, and how they can sometimes irrupt into classroom events usually through the use of digital media.

Therefore, for practitioners seeking to develop pedagogies that capitalise on the affordances of new technologies, such insights support a greater consideration towards how learners experience digital literacy practices across different contexts of their lives. Allowing learners' personal digital literacy practices to be mobilised as resources, either explicitly by them or encouraged and guided by pedagogical approaches, can be supportive to learning. And failure to encourage effective translations, as Knobel and Lanksher (2004) warn, can widen the gulf between curricular digital practices, personal digital literacy practices and their cultures of use across domains, potentially adversely affecting educational progress.

This research therefore speaks to debates about digital literacy practices and their contested and controversial place in curricula and personal lives. Irruption, as advanced here, is about exploring the multilayered and messy entanglement of social and material actors, and their contesting digital literacy practices as writing unfolds in an educational context and with an educational goal in mind. In this respect, irruption is also connected to the current (at the time of writing this thesis) discussion on 'BYOD' (Bring Your Own Device) programmes and strategies in classrooms (Bowman, 2013; Higher Education Academy, 2014; JISC, 2012).

BYOD refers to the practice of bringing a personally owned digital media device (usually a smartphone or tablet) to the classroom for utilisation in class time, using institutional connectivity and for institutional purposes (i.e. academic work), and often using *personal* applications and data. With institutional drives for ICT investment and incorporation, and the increased costs this brings, and pervasive use of devices on the part of learners, BYOD seems for many a convenient 'student-centred' response to the problem of educational technology.

BYOD is a technology-centred perspective, and the findings of this thesis show that bringing one's 'own device' is a catalyst for allowing digital literacy practices to irrupt and flow into the conventional classroom space; practices which are ordinarily unwelcome or unacknowledged in a classroom space. According to the recent *Survey of Technology Enhanced Learning for higher education in the UK* by the Universities and Colleges Information Systems Association (Walker et al., 2014), BOYD remains a leading challenge for the future in managing how institutions enable opportunities for learning and providing technical support for staff.

Through this framing, I propose that Literacy Studies can directly inform research into the Learning Sciences and studies of educational technology as they attempt to elucidate the extent to which learners can gain pedagogical benefit in digitally mediated forms of communication and learning, including through BYOD. The relationship between Literacy Studies and the Learning Sciences has been described as "uneasy" with perspectives and approaches that result in "talking past one another" (Gourlay et al., 2014: p. 6). The findings in this study, therefore, contribute to a fruitful discussion between disciplinary areas concerned with literacy and learning in digitally mediated environments. This is especially important with the current debate surrounding MOOCs⁸ and their derivative pedagogical approaches, cMOOCs, which mimic a didactic model online, and xMOOCs which allow the learners themselves to generate learning opportunities largely through their own digital literacy practices (Jones, 2013b).

But the argument remains that if educational institutions attempt pedagogical approaches inspired by digital media use which are, in turn, a response to the pervasiveness of their use (e.g. BYOD policies), then a reasonable idea of what students are experiencing with digital

⁸ Massive Open Online Courses

media is essential. Strategic visions, good practice initiatives and acceptable use policies are mere abstractions of interest which position ‘disruption’ as from the vantage point of senior management. Explorations of practices of digital literacy which manage to ‘irrupt’ into traditional educational spaces (or in online spaces through MOOCs) can give researchers an indication of the current, creative and sophisticated practices of digital media which students are able to mobilise, often unsolicitedly, into a domain to which they may otherwise be unwelcome.

7.3 Collateral realities: practices within events, and events within practices

Recent theorising in the field of Literacy Studies has problematised the notion of the Literacy Event and the spatial and temporal characteristics of ‘eventness’ in light of the kinds of literacy practices that emerge through them (cf. Baynham and Prinsloo, 2009). Baynham and Prinsloo (2009) in the introduction to ‘The Future of Literacy Studies’ argue, in relation to literacy events, that “once you begin to look more closely there are ... problems from a number of angles with ‘eventness’” (p. 11). One of such problems with a prototypical notion of an ‘event’ is an assumption that it can be neatly differentiated into structures and readily detached from its apparent context for analytical purposes. To do so risks essentialising or romanticising literacy events, and ignoring broader agencies at play within them.

Perhaps the most detailed recent work on this particular aspect of literacy has been that of Cathy Kell, whose work in South Africa explores literacy as it is enacted across space and time. Presented as a ‘transcontextual’ approach, she problematises the notion of locality and localism in literacy research and the limitations of framing one’s research as place-bounded in ethnographic accounts of literacy practices. To do so becomes problematic as literacy events, as seen in the case-studies for this thesis, happen across various social spaces and time frames. Kell (2006) argues that:

[m]odes and media of communication carry meanings within the streams and flows that make up the texture of the contemporary world, and historically literacy is one of the most important channels through which meanings have crossed space and time.

(Kell 2006: p. 147)

Kell's work is of relevance to the kinds of literacy practices witnessed in these case-studies. And given further illumination drawing from Law's injunction to trace the choreography of practices even if it takes one beyond the site of interest. Operationalising Latour's injunction to 'follow the actors' and to 'trace associations' (Latour, 2005), Law (2012) instructs researchers to "[f]irst attend to practices. Look to see what is being done", and how "relations are being assembled and ordered to produce objects, subjects and appropriate locations", in order to ascertain how "a world is done in practice, and how it manages to hold steady" (Law, 2012: p. 171. See Chapter 2 for a fuller discussion).

Through an examination of the various levels of practice involved to inform, assemble, and write an assignment completely, we can see that the number of networks engaged can become enormous as networks can be disparate conceptually but not in practice. Law further writes, "once we turn up the magnification we quickly find that there isn't an independent, prior, definite, singular and coherent real out there upon which the various reports of reality are based" (Law, 2012: p. 171). This theoretical perspective to sociology, I have argued in the Literature Review component to this thesis (Chapter 2), draws from Deleuze's work on the philosopher and mathematician Gottfried Wilhelm Leibniz:

Every portion of matter can be thought of as a garden full of plants, or as a pond full of fish. But every branch of the plant, every part of the animal, and every drop of its vital fluids, is another such garden, or another such pond.

(von Leibniz et al., 1998: p. 277)

Therefore, if the entire world lies within the minutiae of the practices performed in the phenomena of interest, then what matters in the assignments, as Sara, Anne and Paulo carried out their written work in this study is how they:

1. Drew upon external texts (downloaded reports, previously completed assignments, assessment criteria, etc.) that were written in different locations, by different people, at different times, and with a different intention in mind.
2. Engaged in such things as social networking activities to aid content creation, and other enactments of *translation* and *irruption* (described in the previous section), thereby mobilising digital literacy practices not valorised by institutional normative views of 'digital literacy'.
3. Pointed to future events, such as the intended use of the present work as validation for future assignments, and links to personal social networking (e.g. Anne's use of Twitter, which continues till the present day) as part of the 'event'.
4. Dealt with the sometimes obscure instructions that lay behind the tasks. For example how they were instructed to access assignment instructions and submit their work a certain way. These entail 'hoops' for them to 'jump through' set by the teacher; who, in turn, had her hoops to jump through, set by other agencies with their origins and locations far beyond the 'event' being observed.

The above instances gleaned from analyses of the cases show that we cannot view the classroom in terms of what is 'inside' as opposed to what is 'outside' of it, as both/all realms are conflated. In this way practices are never coherent, and nor do they perform a truly coherent reality, as Law makes clear:

[C]oherence is simply an aspiration. In practice, practices are always more or less non-coherent. They work by enacting different versions of reality and more or less successfully holding these together... If we look for non-coherences within practices we will find them. We will discover collateral realities.

(Law, 2012: p. 175)

Perhaps Paulo's teacher was concerned with her next appraisal as she sought to rigidly adhere to the college's ILT standards document in designing the task such? Reflexively, I too – as the writer of this thesis – am thinking of my 'hoops' to 'jump through' as I write this analysis chapter. We are all thus actors in this complex assemblage. But who is aware of this fact? The students are perhaps vaguely aware, their parents and family members too, the teacher a little more so, and so on. But the actors in this scenario are not all present: my PhD supervision panel and examiners, the teacher's manager, the students' family members. Beyond them are educational managers of the college, the education system, the state, and so on. What emerges as we follow the practices are tasks nested within tasks, literacy practices within events, and further practices and events within those – like Matryushka dolls.

We can see this as a kind of 'Baroque complexity' (Kwa, 2002) which erodes the distinction between and pleats (like a Mobius band) an a priori 'inside' and 'outside', and characterised by actors' heterogeneity of identities (personal, political, artistic, etc.). According to Law (2011) the baroque conception to the social world can "be imagined as a possible set of more or less experimental resources for understanding and appreciating the empirical differently" (Law, 2011: p. 11). It therefore becomes Sara's, Anne's and Paulo's, and the multitude of other actors', *contextualising agency* which becomes more important rather than simply the *context* of the scenario I have entered (c.f. Edwards, 2009). In this vein, by following the actors, and tracing their associations, we can get to the practices that Law speaks about. And here we find, echoing Leibniz's conception, practices within events, and events within practices – spanning any particular *a priori* representation of space or time.

A related notion with reference to Literacy Studies has been suggested already by Brandt and Clinton (2002) who call us to question the "limits of the local" in literacy research and for it to take into account the "larger enterprises...away from the immediate scene" (Brandt and Clinton, 2002: p. 338) and the interactional here-and-now of events. This leads us to question

where and *when* digital literacy events are to be identified, as their constituent digital literacy practices spill over into different temporal and spatial realms, and can circulate in cross-network practices of re-contextualisation (such as Anne writing through her assessment criteria and Sara's re-working the text of her previous work).

In many ways the assignments can themselves be seen as collateral realities in the life histories of the students: incidental products, perhaps to be forgotten in later years, but nevertheless necessary both to get through the lesson, the module aims, and more broadly for their future lives and careers.

7.4 Assembling the assignment through a network of practices

Moving on from the discussion in the previous section and the collateral realities which make up the assignments, we can therefore describe them as being 'assembled' by the social and material agencies at play in a digital literacy event. Its apparent end completion therefore suggests a reality that is really an *effect* of the bundles of practices choreographed to attain that effect. This is the "performativity of practice" (Law 2012: p. 161) and means careful attention should be paid to the ecology of practices (and their contestations, impasses, breakthroughs, etc.) in a digital literacy event to see how sociomaterial relations are assembled and their realities (such as assignments) are done. In other words, the cultural order of the digital literacy event is held together by an assemblage of competing and disparate practices, some of which are elided from view or 'pushed' out of the way. This is a *performative* conceptualisation of digital literacies; that digital literacy practices, their pre-existing realities and texts, perform – or assemble – the reality of the classroom, the assignment, the game-play, etc. Effects such as these are not to be assumed to be *a priori* facts in an ANT account; rather, we must trace the practices and associations that assemble them to appear this way.

When scrutinising the sociomaterial workings and practices of the assignments in this study, what becomes apparent is that they emerge from a bricolage of multiple and multi-layered digital literacy practices. Examples include: personal chats and social arrangements (Sara), presentation files done at home with family and first-language blogging (Paulo), Twitter and Pinterest incorporation (Anne). Overlapping through these practices are *other* assemblage identities (the Facebook friend, the helpful bilingual son, the FE professional, etc.) which are themselves fashioned and managed through these very practices. What, therefore, remains exclusively ‘academic’ or ‘vernacular’ in the way of digital literacy practices for an assignment?

If the sociomaterial work done to complete the assignments is successful, a number of hegemonic forces, hurdles, and resistances need to be overcome; and it is within these resistances, or moments of ‘jostling’, that interesting digital literacy practices lie. For Sara, Anne and Paulo successful assignment completion relied upon these “sub rosa” (cf. Gilmore, 1986) or ‘secret’ digital literacy practices done via these assemblages and through their collateral realities. The role these sub rosa digital literacies play in the completion of the assignments is profound, yet ironically, students when judged against them are deemed either as rule breakers or not competent in the dominant Literacy. The assignments appear to be created and maintained by this network of practices and actors which are aligned for the purpose of the assignment (in practice) but separate and disparate otherwise.

These actors constantly work to maintain the durability of the traditional reality of ‘the assignment’ by engaging and drawing on a network of actors such as policies and policy makers, management, concerned parents, etc. But this reality is far from uncontested, as Sara, Anne and Paulo engaged with the assignments were creating *new networks* of their own, and leveraging literacies that otherwise have no place in the classroom to get their work done; digital literacy practices enacted by more ‘local’ and ‘global’ assemblages that were

institutional, vocational, personal, etc in character. In Latour's terms there was a "sort of action that is flowing from one to the other, hence the words 'net' and 'work'" (Latour, 2004a: p. 64).

The kinds of writing and literacies which are meant to emerge in the assignments are those which are commensurate with a certain notion of 'digital literacies', what I refer to in a previous section (8.2) as a dominant ontology of digital literacy. This ontology is held up by certain structuring agencies and their actors already discussed above: the colleges' 'acceptable use' policies, good practice guides, and general classroom cultures which lead to particular 'top-down' imposed notion of what digital literacy is and how it should be performed. This, in turn, regulates the teachers' actions and decisions which subsequently are mostly to do with channelling students' access to particular digital media, and in particular ways as she orchestrates a replication of managerial and policy diktat. This runs contrary to the more anarchic bricolage which I saw the learners doing. We can draw upon an intellectual antecedent to the ANT tradition to further illuminate these disjunctures of practices: Deleuze and Guattari's (2004; 1987) distinction between the rhizome and tree structures.

The metaphorical difference between a tree structure and a rhizome structure is that a tree structure is hierarchical with knowledge organised systematically from stems to roots. The rhizome's, however, overturns the standardised approach of the tree structure with its multidimensionality, fluidity and branching out into places unexpected. The rhizome is therefore the antithesis of the tree, and is characterised by its heterogeneity, multiplicity, flow and fluidity:

[U]nlike trees or their roots, the rhizome connects any point to any other point, and its traits are not necessarily linked to traits of the same nature... The rhizome is reducible to neither the One nor the multiple ... It is composed not of units but of dimensions, or rather directions in motion. It

has neither beginning nor end, but always in a middle (*milieu*) from which it grows and which it overflows...(it) operates by variation, expansion, conquest, capture, offshoot...it has multiple entryways and its own lines of flight.

(Deleuze and Guattari, 2004: p. 23)

In this respect Deleuze and Guattari's rhizome metaphor connects with tenets of ANT, its intellectual successor project, by conceptualising the entanglement of humans and nonhumans as alike in terms of agentive potential through their alliances or 'assemblages' (a word shared by both traditions). The dictum, therefore, is to follow the actors and their associations. Moreover, according to Michael Lynch (in Latour, 1999a) ANT should actually be named "actant-rhizome ontology", with the blatant reference to Deleuze and Guattari in that particular coinage. ANT as a theoretical tradition, however, also draws from ethnomethodology and later became popular as a more developed method for analysing scientific and technological knowledge-building practices.

The concurrent work possible through digital media, the co-presence of practices and ubiquitous nature of digital media, along with a continuous supply of wifi/cellular coverage allow for the widespread possibility of rhizomatic literacy practices. In this respect, Parsons and Clarke (2013) make a case that the internet engenders "rhizomatic thinking" and that prolific Web users are "[I]ike rhizomes themselves" (p. 90). Drawing on Deleuze and Guattari (1987, 2004), they contend that:

if young people can be thought of as rhizomes, any point of a rhizome can connect to any other point. Youth have few firewalls. They celebrate privacy, and simultaneously welcome infringement. They build barriers (think of iPods) to eliminate barriers (think of listening to music from anywhere), becoming more rhizomatic as they do; their presence is like an invasion to a newly envisioned world.

(Parsons and Clarke, 2013: p. 90)

To think rhizomatically about their digital literacy practices is to focus on the choreography of relations between entities that may otherwise be thought of as discrete: friendship groups, algorithms, writers of government reports, computer programmers in Silicon Valley, families, local primary school, etc. Sara, Anne and Paulo's sub rosa digital literacy practices, and other such enactments, are characteristic examples of such rhizomatic thinking and assignment writing strategies. Their teachers, on the other hand, tried to regulate them into following a top-down approach.

This draws us to the debates surrounding how writing as an activity is conceptualised in digital environments. The ideas discussed in this section, drawing on ANT and assemblage theory, support wider inquiries into the nature of how the Internet is used in student writing and issues of originality and plagiarism. Work which problematises Internet-supported writing strategies by students, for example research which looks at 'patchwriting' (Pecorari, 2003), a notion to describe the rearrangement of texts with little of a new author's voice, has drawn attention to the importance of better understanding how students appropriate Web resources as they write assignments. Another related concept is that of "pseudo-writing" (Skaar, 2014), which refers to student writing which is aided by Web-based resources to such an extent that ideas are not translated by the writer, but merely transposed to another context.

The data collection instruments I have employed in this study, and the findings of the thesis can complement the above lines of research by uncovering the complex and intricate causalities of how and why these Web-supported (or rhizomatic) writing strategies occur – the sub-rosa digital literacies of assignments.

7.5 A case for new methods in literacy studies

The phenomena of digital literacy practices are continuously changing as users of digital media continuously need to adapt to newer and more advanced technologies. The rapid evolution of ICTs and the impact of new digital literacy practices has led to what Albers et al. (2014) refer to as a “sea change in the conception and practice of literacies” (Albers et al., 2014: p. xi), with new literacy practices characterised by “digital code ... sound, text, images, video, animations, and any combination of these” (Lankshear and Knobel, 2011: p. 28). Exploring what technologies continue to do to literacy practices remains a recently evolving theme of inquiry within Literacy Studies (see Chapter 2); yet alongside this, a critical discussion of how literacy research in digital environments is carried out, I argue, remains under-addressed. In a previous part of the thesis (Chapter 3) I marshal arguments for the theoretical bases of my methods to explore the unique nature of digital literacies in this PhD study. In this section of the discussion chapter I outline some further reflections to support this claim, in order to advance and extend how digital literacy research could be carried out.

Literacy doubtless develops and adopts different semiotic properties in how it is practiced and enacted in digital environments. Turns to visual (Mitchell, 1994), social (Gee, 1996), multimodal (Jewitt, 2009), and posthuman (Hayles, 1999) accounts of semiotic exchange, in turn, demand that research methodologies must also evolve to keep pace. Sociomateriality stimulates researchers to explore artefacts, settings, and activities in different ways in digitally mediated literacies, echoing and extending Heath and Street’s (2008) injunction to ethnographically “track, describe, and enumerate multimodalities as semiotic resources in their combinations” (p. 21) when researching literacy. But despite the concerns raised by some of those situated within the ethnographic tradition of NLS, explicit mention of methods and the need to employ not just cutting edge but “bleeding edge” (Woods and Dempster, 2011) techniques to capture and analyse the intricacies of digital literacies seems under-addressed, yet remains significant considering the challenge.

Another important example of the under-representation of methods is Mills's (2010) review of ten years of research exploring the 'Digital Turn' (p. 247) in literacy within the NLS paradigm. Mills covers a wide range of research in the field but little mention of methodological challenges and novel approaches to respond to them. What is crucial to note here is that early works emerging from the NLS paradigm were not just radical in their new conceptualisation of the term 'literacy' but had to *also* be radical in their methodological approach to substantiate this new paradigm. The new literacy studies therefore at the time of its emergence demanded a certain kind of methodological approach and explanatory programme to suit. These involved largely in depth ethnographic accounts of people's experiences with literacy in their daily lives, and subsequently yielded profound insights that were, up until then, either unknown or unimportant to those with a traditional conception of literacy. Early work around the 1990s (e.g. Barton and Hamilton, 2012; Baynham, 1995; Ivanič, 1998) was therefore paradigmatically *and* methodologically different to traditional notions of a) what literacy is, and b) how it is to be researched. Some twenty years later, in order for NLS inspired studies to retain their ethnographic power and subsequently their critical edge when exploring digital literacies, a further evolution in methods may have to occur; an evolution which is more sensitive to the unique character of semiotic exchange and literacy practices in digital environments.

There is however some work which has been methodologically interesting and which has sought to address the multifaceted nature of literacies, namely of those in digital environments, and has led to research efforts that combine multimodality and literacy (e.g. Dicks et al., 2011; Flewitt, 2006; Kalantzis et al., 2010; Pahl and Rowsell, 2011). Multimodality as a synthesising construct, and heuristic, allows us to better understand how digital literacy is done with its focus on the inter-dependent layers of communicatory modes. Multimodal interactions, in as much as they are integral to digital literacy events, necessitate the generation and analysis of data from multiple modes and often requiring a range of

analytic tools to be employed alongside, such as conversation analysis (Deppermann, 2013).

This is because studies of semiotic exchange in digital environments have meant a drastic re-evaluation of how meaning-making is performed and a consideration of an increasingly complex array of agents, modes, and semiotic systems in how it is researched. The subsequent ‘sea change’ (c.f. Albers et al) is not just conceptual, it must also be methodological. Following the paradigmatic – and lesser emphasised methodological – shifts of NLS, I contend that the complex and distributed nature of learning and literacy in digital environments demands tools and techniques for the opening up of new educational ‘black-boxes’ (c.f. Latour) to scrutinise how student work, play, and learning are done through a rich account of their practical action, with a view to informing pedagogic practice. In so doing, through this thesis, I advance the notion of ‘new literacies’ necessitating ‘new methods’ for their examination.

The discussion of the utility and affordances of my methodology (as outlined in detail in Chapter 3), and contributions it offers to develop the fields of digital literacy studies and the learning sciences, emerges from the notion of sociomateriality in education (Fenwick et al., 2011) and the interpenetration of humans and technical artefacts in all practices including those of digital literacy. Literacy practices and the technologies used for them are each given their purpose as a result of, and via, the other. A framework to explore the nature of, theorise, and talk about one must therefore encompass the other as research inquiry explicates the relationships between digital technologies and literacy events in the way I have attempted in this study.

The implications for digital literacy research are that literacy events should be treated as assemblages, requiring disentanglement and reassembly using appropriate methodological tools and techniques, as employed in this PhD study. In my efforts to examine digital literacy events through assignment writing, I required a methodology to account for the sociomaterial

complexity of classroom writing in real time. In my endeavour to do this, alongside other researchers currently adopting similar approaches (e.g. de Roock, forthcoming), I have developed a transdisciplinary approach which can be used to explore any activity in a digital environment. An understanding of materiality as passive elements did not help me explain digital literacy events and assignment writing practices sufficiently. The multilayered and messy entanglement of social and material actors, their contesting realities and digital literacy practices as student ‘work’ or ‘play’ unfolds, is well captured in this study through a methodology – and theoretical sensibility – which problematises the inter-relations between networks that are discrete through an *a priori* conceptuality but not in practice.

As we are set to face an ever more digitised educational future (Johnson et al., 2013), the methodology presented here in this PhD study is useful for researchers paying greater attention to the sociomaterial assemblages in which activities, including learning and literacy, occur (Gourlay and Oliver, 2013; Johri, 2011; Sørensen, 2010; Waltz, 2006). I am eager to see how this methodology will be applied across a range of research sites and disciplines, by researchers committed to advancing the fields of learning technology and literacy studies both empirically and methodologically, and how it also contributes to the continuing discussion (e.g. Luff and Heath 2012) around the unique challenges of using video-based data in qualitative research (discussed further as part of Chapter 3).

7.6 Curation as digital literacy practice and ‘forensic data’

In an earlier part of this thesis, as part of the Literature Review (Chapter 2 Section 2.7), I discussed some key concepts related to the practice of digital content curation. As far back as 1990, the information theorist Edward Tufte (1990) put forward the argument that in an ‘information-thick’ world, being able to filter information by selecting, editing, structuring, categorising, highlighting, pairing, and grouping etc. in order to provide harmonised content are all characteristic skills of advanced digital content-creators. In this study, I have found

that through their experiences as prolific users of the Internet, Sara, Ann and Paulo have developed similar capabilities which can be described as curation and which, most notably, supported the completion of their assignments. This section of the analysis chapter outlines the kinds of contributions this particular set of digital literacy practices can make to assignments and project task design, and the overall educational potential for the integration of digital content curation as a digital literacy practice in curricular activity.

Callahan (2014) makes a case for curation to be used in combination with what is known in information technology as ‘big data’. Big data is a concept which refers to masses of data that are too substantial for standard levels of processing and necessitate a larger-scale capacity to “search, aggregate, and cross-reference” (boyd and Crawford, 2012: p. 663) through masses of data sets. Callahan argues that students should be made to create portfolios as soon as they start ‘producing’ in their educational beginnings, thus leading to a full history of all the school work they have done (regardless of where and when it occurred). One advantage of such an approach is that content can be harnessed using digital media and big data concepts (such as ‘data mining’ techniques) to draw conclusions about work patterns of student submissions (Eynon, 2013).

There are a number of problems with big data as a concept when it is applied unquestionably in educational contexts, and for educational purposes, by technology industries with little interest in its affordance for educators. For example, Laurillard (2014), writing in the *Times Higher Education Supplement*, argues that:

big data could improve teaching, but not without educators taking control of this extraordinary methodological gift. At present the field is being driven almost entirely by technology professionals who are not educators and have never taught online. Instead, we could be recruiting all lecturers everywhere to collaborate and generate their own large-scale data collection and analysis. Then big data could really make a difference.

(Laurillard, 2014)

This is because big data, as it is conceptualised by technology industries, cannot yield the complicated and intricate causalities of how and why things turn out the way that they do in learning situations such as the writing of assignments. This failure of big data is characteristically borne out in the example of healthcare research, as argued by the theorist Clayton Christensen (2013). In trials some people respond magnificently to a particular drug, and others do not respond at all. Overall, the data will depict what appears to be an ‘average’ drug, but just as the disease manifests itself in various ways, the drug only tackles a particular aspect very well and ignores other *enactments* of it, as diseases occur through the complex intersections of the body. I use the word *enactment* here as I believe Mol’s (2002) work is relevant (see Chapter 2 Section 2.5) in appreciating the various versions of an ostensibly singular reality, including those of a disease. Similarly in education, some students respond well to particular assignment types and not so well to others and an exploration of their digital literacy practices can illuminate why this is the case. Christensen (2013) subsequently asks: “[h]ow does big data figure out what is the core of what is going on?”

We can turn to ‘learning analytics’ to apply some real-world use of big data in educational contexts, and to get a better picture of ‘what is going on’ in learning situations such as assignments. It is precisely through this developing methodological area where this PhD study offers another contribution. Learning analytics is a process which, using some big data principles, can allow educators to find patterns and clues in big data sets and use them to help better understand how student work is carried out. One particular and popular Virtual Learning Environment platform (*Blackboard*) has, at the time of writing this thesis, attempted to respond to this need for better Learning Analytics through its creation of Blackboard Store. According to its website (Blackboard, 2014) the site tracks students’ purchases which then provide “analytics that help guide successful student performance”.

Analysing curated big data through learning analytics, according to Eynon (2013) can serve educational communities by providing answers to a range of issues that lie at the heart of learning and technology, through the capacity of big data to “track almost everything a student did” (Eynon, 2013: p. 238) in the way Callahan proposes. The implications for assignment writing strategies and task design are that educators and researchers can uncover and trace the processes of ‘assembling’ that lead to the semi-curated pieces of work often submitted as assignments; or as Bigum et al. (2014) argue, the “secret learner business” (p. 6). This is one, somewhat far-reaching, proposal of how curation practices, as understood through this thesis, can be harnessed for educational purposes. This iteration of big data, as I propose it in this study, could perhaps be described as ‘forensic data’ as it explores the practices, fractal and disparate as they often are, in digital literacy events such as the writing of assignments.

In the remainder of this section, I discuss some further proposals that are more practicable on a day to day level for educationalists, given the current level of technology available in classrooms and across institutional platforms. I also highlight the importance of problematising digital content curation as a literacy practice.

With regards to the actual doing of digital content curation, a number of online curation platforms exist already; among them are Storify, Pearltrees, Pinterest and Scoop.it. When used in educational contexts, curation can increase motivation, self-direction, and engagement of students (Antonio et al., 2012). Through digital content curation learners can create a sense of ownership towards their work thus increase their academic pride, and make them more inclined to invest their time and energy working on their course assignments. How curation can then facilitate learning in an assignment writing scenario and the added value it brings is significant enough for it to be implemented into assignment tasks and project design. Curation, through providing a higher independence level for students when working can lead

to more self-directed and autonomous learning and subsequently higher levels of motivation (Reeve, 2012). But the question remains: how can the types of curation practices performed by Sara, Anne and Paulo be 1) educationally acknowledged and better understood, and 2) harnessed for pedagogical purposes?

In previous sections of this thesis I have discussed how FE colleges are rapidly adopting digital media technologies and training staff and students in how to use them to aid the learning processes (FELTAG, 2013). These technologies, in turn, have enabled the irruption of many actants into the classroom or teaching space. I have also shown through this study that this is not without its tensions and incoherence of agendas between the actors, and there remain some problems with this in terms of strategies of teaching and the actual doing of learning: the contestation or jostling between a dominant version of what digital literacy is and students' own anarchic practices (see Section 8.2 of this chapter for a fuller explanation). Curation is but one example of a complex and sophisticated digital literacy practice originating in social and personal spheres of students' lives and which could be further examined and incorporated into curricular assessment in order to empirically understand how it can relate to learning outcomes. To this end, Antonio et al. (2012) offer a number of possible curation tools in Higher Education classroom contexts:

Tool	Possible use in Higher Education
Storify	Journalism students could use Storify to depict a current story as a series of images and social media posts to engage a wider, authentic readership. Political science students could map an election, and responses to policy in this format.
Pearltrees	Philosophy students could evaluate and visually organise disparate web resources for assessment tasks. Tutors could curate and build a visual representation of resources in their subject area.

Pinterest **Visual Arts students** could create a portfolio showcasing their work whilst gathering inspiration from others.

Marketing students could explore brand image and social media marketing strategies.

Scoop.it **Literature students** could filter and synthesise web content, creating an annotated bibliography.

Knowledge Management students could create a group repository of knowledge.

(adapted from Antonio et al., 2012)

The above suggestions are useful for outlining what can be done with curation platforms vis-a-vis the typical activities of certain courses, and this of course can be expanded upon indefinitely. But the kinds of curation practices uncovered in the three case-studies for this thesis go deeper than this, and relate to Web-supported writing strategies more generally. The potentialities of digital media and digital environments for curation precipitate certain types of writing practices emerging as students get work done in classrooms, and the kinds of ‘copy-pasting’ that can readily occur, as seen in the cases observed in this study. How these new digital literacy practices can be harnessed for educational purposes remains a moot issue, with Johnson-Eilola and Selber (2007) suggesting that:

while a writing pedagogy might focus on the production of original text in some instances, it might also focus just as productively on assemblage, remix, or collage [or curation] in the same way. At a broad level, admitting such forms to our pedagogy requires we avoid automatically slotting them into a hierarchy that limits their value in specific situations.

(Johnson-Eilola and Selber, 2007: p. 400)

Digital portfolios, or ‘ePortfolios’, such as that completed by Ann in case-study 2, can engage basic writers to merge existing Web writings of others into their own work thus creating a bridge between, and confluence of, traditional writing, digital content, and Internet platforms

(Klages and Clark, 2009). This kind of activity and assignment task allows the combination and collage of students' own materials with that of others and, if effectively carried out, can incorporate the five points (or sub-skills) of effective digital content curation outlined by White (2012, see Chapter 2 Section 2.7 for a discussion).

Consistent with the notion of curation in the art and museum worlds, 'digital content curation' is based on the collation and organisation of content around a theme for a particular special interest or purpose. Information discovery plays a pivotal role in the current digital media landscape, and subsequently becomes a specialist type of creative labour in and of itself, especially when White's (2012) taxonomy of curations skills is applied.

Howard Rheingold (2012) has also written extensively about the kinds of skills which can be supportive to effective digital content curation as I have described it in this thesis. He refers to a sort of critical mindfulness amid the massive sea of information available to students when they search the Web; he refers to this as 'crap detection' and argues that if students fail to effectively assess the credibility of Internet sources then the Web's usefulness as a reliable source of information is in jeopardy. Crap detection, Rheingold (2012) argues, is essential to manage and effectively negotiate through the mass of information present in today's digital environments, and subsequently for curation purposes. Sara, for example, could have done with some training in crap detection as she browsed the Internet for her assignment, and as she was led down irrelevant paths of inquiry when garnering information.

Further explorations into the kinds of practices being undertaken in the writing of assignments is essential to gauge how students complete work by invoking cyberspace. And to uncover the less acknowledged digital literacy practices nested in more established ones. The pedagogic challenge therefore, rests with finding a way to acknowledge and then credit this

fascinating kind of digital literacy practice against current normative models of digital literacy, the kinds of digital literacies *expected* in the writing of assignments in classrooms. But additionally, to counter traditional conceptions of authorship, as digital content curation is less about a singular and solitary author, and more akin to a “new emerging sense of the author as moderator — someone able to marshal ‘the wisdom of the network’” (Stein, 2006). In this way, curation becomes an important consideration for the field of Literacy Studies as it applies its critical lens to literacy phenomena in Web-based environments.

7.7 Summary

This chapter has brought together a discussion of the various analytic themes emerging from this PhD study to explicate what I argue are its contributions to various fields of scholarly inquiry. What can learning technologists, literacy researchers, and teachers learn from this study? In answering this question, this study offers original contributions in the following areas and themes, as summarised below from this entire chapter:

1. An understanding of digital media as instigating *irruption*. This relates to occurrences when non-standardised/unofficial digital literacy practices emerge to support the completion of curricular work such as assignments. This, I argue, draws the researcher lens away from the exclusive properties of technologies, and what they can do and whose reality they disrupt, and on to the literacy practices emerging in and through their use in a given situation (such as an assignment). Most notably, irruption is interesting when it occurs within an educational arena (e.g. a classroom) in which such practices are not valourised or even forbidden.
2. Theorisations of ‘eventness’ in Literacy Studies, especially as the field applies its ethnographic commitment to literacy inquiry in digital environments. The findings of the thesis draw from, and contribute to, this conversation within Literacy Studies and theorisations surrounding the complexity and transcontextuality of practices throughout literacy events.

3. Writing as *assembling*, and the reading and composing strategies of learners who use the Internet prolifically. A practice-focussed approach draws attention to the multitude of identities brought to bear on the digital literacy practices of the assignments. I subsequently suggest that such forms of writing should be better understood and then admitted into formal pedagogies of writing.
4. The call for new methods to augment and enhance inquiries into digital literacies and learner practices with technologies. I argue that the methodology I have used in this PhD study is a useful basis for transdisciplinary inquiries which adopt digital methods, and ultimately takes the field of Literacy Studies into new directions.
5. And finally, the acknowledgement of digital content curation as a unique kind of literacy practice, with great potential to be harnessed for educational purposes. The kinds of curation practices evident in this study have the potential to transform how Web-supported writing assignments are designed and assessed.

Some of these themes reflect contributions which are empirical in nature and subsequently inform pedagogic practice, including assignment task design and ICT policy in FE colleges. Others draw attention to new directions in theoretical understandings in educational technologies and literacy studies. Taken together, the themes and areas of inquiry discussed in this chapter usefully add to the existing knowledge base in Literacy Studies, the Learning Sciences and their methods of research. In the following chapter I conclude with a discussion of what the implications are for these contributions of the study as well as make suggestions for future research and practice.

Chapter 8: Conclusion

In ordinary everyday behavior, in what sense can we examine a talking unless we bring a hearing along with it into account? Or a writing without a reading? Or a buying without a selling?

(Dewey and Bentley, 1949: p. 142)

Following the discussion of the findings of the case-studies, thematic analyses of the data, and exploration of the study's original contributions in the previous chapter, this chapter presents my concluding remarks to the study with a discussion of its implications. I also discuss the limitations of this research, make suggestions for future directions in literacy research, and how these can impact and shape technology-enhanced educational practice.

8.1 Summary of findings

In carrying out this research, I sought to uncover how course assignments are written in FE classrooms, and how the digital literacy practices of learners – emerging whilst completing these assignments – interact with the digital demands and requirements of normative classroom culture and, more widely, the college. On the basis of theoretical and methodological interests outlined at the start of the thesis, these aims were explored through addressing the following research questions:

- 1. What are the digital literacy practices of adult learners emerging as they work on writing assignments, in a classroom setting?**
- 2. How do these digital literacy practices relate to the learners' everyday digital literacy practices and habits?**
- 3. Are there any discrepancies between the way students carry out work and the requirements and expectations of the course and, more broadly, the college?**

The research questions were designed to deal with the phenomenon of assignment writing

from various perspectives and in slightly different ways. With respect to the first research question, and gleaned from the accounts presented in chapters 4 through to 7, the learners worked on their assignments in the following summarised ways:

- They often utilised external texts (downloaded reports, previously completed assignments, etc.) that were written in different experiential locations, sometimes by different people, at different times, and for different goals. Contents from these texts became woven into the new text. Some of the practices emerging from this I have described as ‘digital content curation’, a practice which involves problem solving, re-assembling, re-creating, and stewardship of other people’s writing.
- Some engaged in social networking activities to aid assignment work, and other kinds of digital literacy practices which are i) not formally acknowledged in the college contexts, or ii) explicitly prohibited in some cases. I have described the manifestation of such practices as instances of ‘irruption’ and part of the students’ bricolage of practices which are drawn into their assignment work.
- They dealt with and overcame various tasks which were nested, or hidden, within other tasks as part of the overall and greater task of the assignments. These other, less noticeable but crucial, tasks require certain kinds of digital literacy practices. Examples include mandatory usage of the VLE for organisation, information collection and submission of the assignments. I describe these as emerging from a structuring agency beyond the classroom (i.e. from policy documents, ICT good practice guides, and other such agencies) which lead to a particular dramaturgy of formal learning, based on an imaginary of how the assignment *should* be completed.

Following discussions with the learners and a collaborative mapping exercise, I was able to bring these insights to bear on the second research question. I found that the learners in the case-studies allowed their everyday digital literacy practices to interact with the demands of

curricular work in various ways, including:

- Surreptitious use of social networking during assignment writing, and other personal chats and interactions both within and beyond the classroom.
- Practices with digital media originating from college-based initiatives, including the adoption of certain platforms, which then influence the participants' home-based activities. The reverse was also noticed: home-based digital literacy practices, and the kinds of platforms and tools used which infiltrated college work and practices. These are described as a sort of boundary crossing.
- Incorporation of first-language Web searching techniques to aid assignment completion.

These mobilisations were not without a sort of jostling, occasional impasses, and eventually (in some cases) breakthroughs, as these practices hailed from domains that ought not to be brought into contact with each other, at least according to a normative conception of digital literacy as endorsed by the colleges. The assignments are achieved and completed into their final and desired form through the relations between these many actors and their alliances. Exploration of the practices which make and maintain these alliances is what brings us to the question of 'how?', and subsequently goes some way in addressing the concerns of my third research question.

Discrepancies between the way students carried out work and the requirements of the courses (and, more broadly, the colleges) were addressed in this final research question, and are briefly summarised as follows, with some elements of overlap with research question one:

- Social networking and personal chats are deemed as 'unacceptable use' according to institutional policies in all three case-studies, yet policies can be – and were –

circumvented when required.

- Alongside these ‘acceptable use’ policies are ICT good-practice guides, inspection report recommendations and other documents which exert a top-down structuring agency on the kind of practices with digital media that should be adopted in the classrooms. These structuring agencies subsequently determine a sort of dramaturgy of formal learning; a performance of what ‘good practice’ with ICTs ought to look like in a lesson or assignment.
- This runs contrary to the more *anarchic* digital literacy practices of the learners who, whilst knowing what is required and acquiescing to a policy at times, also remain disloyal to these regulations and circumvent them when required. Crucially, this can be for the purposes of assignment completion rather than mere ‘fun’ or being exclusively ‘personal’ in nature.

More detailed discussions of the research questions and their findings are presented in previous chapters; importantly, Chapter 7, which provides a thorough and thematic discussion of the findings. What emerges is that the digital literacy practices and their associated skills and attributes, as emerging in the completion of the assignments, are so diverse and unspecific that it becomes inappropriate to pin them down to a set of ‘key’ skills, to be understood and applied the same everywhere.

8.2 Implications

This brings us to a brief discussion of the implications of the research and the insights gained through the findings of the cases. The scholarly contributions of the study and a detailed discussion of how its analytic themes contribute to the work of learning technologists, literacy researchers, and teachers is presented in Chapter 7 and also during the case-study accounts. But here it is worth separately addressing how this research has direct implications for

classroom practice, institutional policies on digital learning, and broader national policies on educational technology.

As with the LfLFE project, which drew attention to how curricular practices could be fashioned more around what learners actually bring as resources to the classroom, this PhD study examines in detail what learners actually do with technology in the classroom. FE and HE programme designers, and institutional policy makers, in dealing with the complex problem of how best to integrate digital media into curricular practices, must base their insights on an ongoing evaluation of learner practices rather than an a priori notion of 'what works' or a mere descriptive account of technological affordances. The way learners embrace a suite of classroom technology is not always reflected in the intentions of the ICT implementers and policy makers who sometimes invoke 'digital divide' logic and a quest to spread 'digital literacy' skills to recipients. This research supports such ongoing evaluations and surveys of the learning landscape and actual practice of learning, which then make for ideal foundational knowledge to inform institutional digital learning policies and the kinds of ICT 'good practice' guides that we see teachers and learners having to abide by in the case-study accounts. In this way, and echoing the LfLFE project, aligning curricular norms with the practices of learners' life worlds is a fruitful basis for educational success and policy direction.

The notion of digital curation as it is presented in this thesis has the potential to shape and reform how assignments and project tasks are designed, carried out, and assessed in programmes of study. This research has shown that the curricular assignments are an evolving pedagogical form, and in-depth explorations of how they are written can tell us a lot about how we can better assess them. For example, at a basic level and through an institutional lens, there is a risk of digital curation being interpreted as plagiarism. This is largely due to the ease of access to Web-based sources for writing, making it harder to gauge how independently the

learners have worked and subsequently how ‘authentic’ their texts actually are. In the previous chapter (Section 7.6), I argue that curation principles can be adopted into educational assessment (and assignment writing) processes in the creation of portfolio-type pieces of writing in which learners re-package old texts, and give it new life. The example I give in this discussion is that of Maria Popova’s blog (Brain Pickings).

We also know from the kinds of spatial flows of digital literacy practices observed in the cases that digital media adopted in classrooms have serious implications beyond the immediate instructional situation and the institution, and into the life worlds of the learners. The reverse is also evident; that learners’ outside-college practices are mobilised readily to support their curricular goals. When digital media are implemented in institutions, the important questions that need to be asked are not about what effect can be achieved with them but rather what kinds of social practices are emerging both within and beyond the institution, the kinds of knowledge being produced, how it is produced, and how these are changing learning processes.

8.3 Limitations

This study consisted of three cases explored qualitatively. Despite the rich and varied data across all three of these distinctly different case-studies, three remains a small sample size. Whilst there is variation in the age, gender, ethnicities, and academic backgrounds of the participants and locales of the cases, and a justifiable reason to limit this study within FE, further cases situated in more disciplinary programmes of study and assignment types (e.g. group project work) would doubtless provide different and added insights, and subsequently new ways of understanding the writing of assignments.

8.4 Suggestions for further research

In light of these limitations, there are a number of avenues through which this research could

be taken further. Presented below is an account of suggested further research inquiries which draw from this PhD study's rationale, methodology, theoretical foundations, and context of interest. The suggestions are based on the study's unique character, its contributions as discussed in Chapter 7, and extending these into different and related areas; for example, the research questions, theoretical perspectives adopted, and the project's methodological procedure.

8.4.1 Wider insights

Further inquiries based on this PhD study which draw upon different classroom and disciplinary contexts would provide a wider range of data and greater insights. For example, replicating this study in HE contexts and school classrooms would complement studies which have explored digital literacy activities in both these arenas (see Chapter 2 for some examples of such studies). Also, a longitudinal study focussing on larger, more complex assignment projects such as dissertations or group projects would yield a more complex picture of how student work is done over time, how information is sought and evaluated for that work, and how students can work effectively either alone or in teams.

8.4.2 Usability testing

Coping with the research demands that come with exploring, capturing, and subsequently theorising literacy in digital environments is another pertinent area of development for which this thesis provides a contribution. The lacuna in the research literatures is not just for literacy researchers who are using new and emerging research methods (see Albers et al., 2014), but also within the social sciences more generally, in which there is a growing conversation around 'digital methods' versus 'mainstream methods' (e.g. Snee et al., forthcoming).

In the previous chapter (Section 7.5), I argue that the methodology employed in this study can

serve as a useful addition to NLS inflected ethnographic approaches, ethnomethodology, and research in the learning sciences generally. The methods I employ can also be enhanced and modified to incorporate deeper and more ‘forensic’ accounts of student interaction in classrooms during project or assignment work using the powerful software platforms of usability testing packages such as Morae Recorder. Morae augments screen capture and video recording with keystroke logs, mouse clicks, etc. which are all managed and presentable in one graphical interface. Such an approach can provide a more complex picture of ‘what happened’ in an assignment or classroom task, and track learner’s every move and interaction as they work.

Examining the intricacies, impasses, and politics of student work in this way provides a level of insight far beyond what has currently been explored in institutional learning events by extending the methodology of this PhD study to further empirically capture the diversity and richness of practices drawn into assignment tasks, composition, and mapping of when, where and how such practices emerged. This can be achieved using tools such as Morae to attain qualitative and quantitative insights (e.g. numbers of sites visited, average time spent on sites) into the habits and patterns of behaviour drawn into academic tasks, practices of learners’ life worlds, when and where those practices emerged, and how they fit with the assignment tasks as they are being worked on. This can also be extended beyond the classroom, to trace assignment work across and beyond campuses.

8.4.3 The life of an assignment

Assignments, as with all entities, are sociomaterially constructed through practices and have a life prior to and beyond the classroom (see Mol, 2003). I have captured a part of this life of the assignments, the bulk of their writing, done predominantly by the students alongside other actors mobilised into their completion. I have shown that the assignment is an assemblage and is tied together by political decisions, managerial policies, economic imperatives, teachers’ aims and practices, students’ practices, material artefacts and the technical hardware

and software assemblages within them, their properties, alongside broader social forces such as demand for ICT use, etc. In this vein, and in line with Mol's praxiographic approach, the current study could be extended to explore the greater trajectories of assignments, especially beyond submission, as part of their multiplicity (ibid). For example, after its completion and submission, an assignment can enact other realities (e.g. as a statistic used to leverage pressure or reward on teachers) and a host of other practices surrounding them. By tracing an assignment, not just how it comes to be developed but how it also evolves beyond its submission, focussing on multiplicity can bring together the elements – both powerful and powerless – which shape its realities and various enactments. I am currently, at the time of writing this thesis, developing this particular aspect into a post-doctoral research programme.

8.5 Thesis summary

This PhD study has set a theoretical and methodological basis for exploring and better understanding assignment writing processes in Further Education classrooms. It brings together foundational theory from Literacy Studies, ANT, and studies of digital literacy theory in attempting to develop analytic tools and an explanatory programme which adds to the existing knowledge bases in Literacy Studies, the Learning Sciences, and ANT in education.

Judging FE learners' solely under a normative and classroom-based perspective of digital literacies can marginalise and deny digital literacy practices of personal experience, especially as they are played out in the completion of class work. Therefore, for practitioners seeking to develop pedagogies which capitalise on the affordances of new technologies, such research supports a greater consideration towards how learners experience digital literacies across different parts of their lives. Ultimately this is about supporting initiatives which allow learners' personal digital literacy practices to be mobilised as resources, either explicitly by them or encouraged and guided by pedagogical approaches.

This PhD study therefore speaks to debates about digital literacy practices and their contested and controversial place in curricula and personal lives. It provides a complementary perspective to other research in technology-enhanced learning, cross-disciplinary evaluations of current practices in digitally inspired pedagogies, and research-led evidence for creative shifts in the education sector. Providing a sociomaterial account of assignment writing is a useful starting point for doing so.

List of Abbreviations

ESOL	English for Speakers of Other Languages
FE	Further Education
HE	Higher Education
FELTAG	Further Education Learning Technology Action Group
ANT	Actor-Network Theory
STS	Science and Technology Studies
CAQDAS	Computer Assisted Qualitative Data Analysis Software
LlLFE	Literacies for Learning in Further Education
BECTA	British Educational Communications and Technology Agency
JISC	Joint Information Systems Committee
ICT	Information Communication Technology
ILT	Information Learning Technology
NLS	New Literacy Studies
CHAT	Cultural Historical Activity Theory

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Appendices

Appendix A: Extracts of video logs

Case-study 1 Video log: Sara

<i>Time and activity</i>	Researcher notes	Description
3:40 – 5:26	<p>A definite and marked change of pace occurs in this writing session, compared to more ‘lecture’ like session before it. The deployment of the laptops in this session brings with it the sudden permitted use of their smaller ‘cousins’: phones, iPhones, iPods, etc.</p> <p>The listening of music raises the question of what, precisely, is ‘off-task’ and ‘on-task’ in such arrangements?</p>	<p>She makes herself more comfortable on the chair and repositions herself slightly. Her friend (S2) is untangling her earphones (as was revealed later, this is for music).</p> <p>She takes out documentation from her file, to type the precise wording of the unit criterion being written about in this session (this has also been up on the whiteboard, and discussed in a previous session).</p> <p>Checks her phone, as does S2 (they are selecting their playlist of music, as was revealed later). S2 shows what is on her phone screen to Sara.</p>
5:26 – 6:34	<p>The reality of the ‘assignment’ is being transferred now to what will soon become Sara’s written work. The ‘agency’ of the</p>	<p>Starts typing:</p> <p>Begins by writing the unit criterion (E6) verbatim.</p>

	critterion and how this weaves through the trajectory of the sociomaterial assemblage Sara unfolds as part of her writing tactics.	Stops typing [unclear talk in the background: T and SS discussing the task]
6:34 – 7:50		Again, unclear mutterings with S2, about what is being listened to, and further untangling of S2's earphone cable.
7:50 – 9:09	<i>How does this link to the assignment?</i> How will the assignment from last year be integrated into this one? What does this say about 'Literacy Events' and their temporal and spatial overlapping? The previous assignment is from another year of the course and under another teacher.	Turns back to screen. Highlights texts, makes bold. Almost exactly at this time other SS voices have subdued and the T's remains, talking about what is required in this task ("...the Children's Act..."). S2 is still untangling her earphones. Sara reads the course documentation which outlines the requirements of the task, then checks if 'safeguarding' has been covered in Unit 3. She then clicks through the relevant folders to retrieve the assignment from last year (May 2011) which covered this topic.
9:09 – 10:19	Retrieving last year's assignment as a possible basis upon which to start the current one seems like a tactic? 'sociomaterial bricolage'? To what extent is this integrated?	Sara opens the file of a previous assignment on 'safeguarding'. Says: "Here they are" to S2, and reads out the text on the screen: "All settings and policies and procedures as these are used to keep all children safe..." Scrolls up and down, looking at how anything from this file – and previous assignment – can be incorporated into the current task.

10:19 – 10:21

Some discussion on this with S2, who has now become more engaged in the task and is discussing aspects of the unit criteria with her.

10:21 – 11:40

The requirements of the current assignment are being negotiated with the criterion, previous criteria, a previous assignment, and Sara and S2's prior knowledge and guesswork between them.

Turns to discuss with S2 about the particulars of the previous criteria, and whether there is a link with the current task.

Scrolls through the document, discussing with S2 what particular aspects of the piece relate to the work that needs to be done, and which aspects do not, and the amount of marks allocated.

"legislation" and "policies and procedures" are discussed.

Case-study 2 Video log: Anne

<i>Time and activity</i>	<i>Researcher notes</i>	<i>Description</i>
12:21 –14:51	<p>A blog discussion with a peer about a learning and teaching issue using 'Jing'</p> <p>Is this work for the DP assignment?</p> <p>This is the main blog, and Anne's colleague is sharing her experiences of using Jing.</p> <p>There may be an expected reciprocity, where if Anne comments on others' blog posts that they will in turn reciprocate. Much Web interaction occurs through such mutual commenting, 'liking' (Facebook), 'endorsing' (LinkedIn), and promoting of content.</p>	<p>Clicks on 'Reader' in PS, clicks on 'Jing' post in the page.</p> <p>A brief exchange occurs with a colleague about Anne's non-attendance to a meeting.</p> <p>Anne then posts a comment to her colleague's post : 'Is Jing like screencast, if not how is it different?'</p>
14:51 – 15:47		<p>'Techforlearningdelivery', reads 'Reflection on how I share resources with students and colleagues.'</p> <p>Closes 'Twitter' tab.</p>
15:47 –16:47		<p>Back to PS tab ('Reader.') Clicks on 'Spaces' – chooses 'KCFS E3-L1.'</p> <p>16:31: Closes that PS tab – goes to 'Techforlearningdelivery' one.</p> <p>16:40: Goes to PS tab (Anne – TFLD)</p>

16:47 – 18:40	Frustration again at the login problem (as 18:04)	Opens new tab ('Welcome to Kirklees College) – 'Staff' – 'Logging in from Outside College' option. Fills in her Username + password (Authentication required) – asked to repeat it x3 (problem). 3 rd time successful by a different password though.
18:40 – 21:28	Still tweaking posts. Going back to the same post.	Goes to PS tab – 'Face to Face or ...?' – 'Edit' - 'Update' . 19: 53: Clicks on 'Anne – TFLD, Home' (same page). 20:28:'Kirklees' tab again. Page blank, refreshes it, then closes it. Reopens a tab 'Server not Found' – 'Try again'. Closes it.
21:28 – 23:40	Google search interaction to reach the Moodle VLE for the college.	Opens Google tab. Searches '[name of college] – VLE' and clicks on it. Gives username + password as required – Invalid: 'Returning to this website?' asked to give username + password again to log in. She finally makes it & logs in 'Moodle2: My Home.'
23:40 – 24:21	This text is the assessment criteria that she wishes to address for the DP.	Goes to 'techforlearningdelivery' tab – clicks on 'My Learning Plan: Get enthusiastic: use collaborative technology to support your own CPD' option. Selects the whole text and copies it in Microsoft Word.
24:21 – 30:53	She begins to access the DP stored on the VLE. This is in order to write for it, and to link elements previously worked on to it. This is the first point at which the actual DP is on the screen. Although all the work prior to this is indicative of it.	Searching through the various sections and sub-sections of the VLE repository. 'Moodle2: My Home' tab again – 'Course overview plus', then clicks on 'Certificate in Technology in Learning Delivery (C&G 7526 – Level 4)'. 27:14: Clicks on 'Manage hidden courses' option. Scrolls down and clicks on 'ESOL, ICT and ILT Entry 3/Level 1' course. Then logs out 29:26: 'Moodle2: My Home' + logs in again. Clicks on "Certificate in Technology in Learning Delivery (C&G 7526 – Level 4)' – ' Digital Portfolio '

30:53 – 38:36

Copies the text (the assessment criteria and tasks) and then intersperses her own writing through it: a form of scaffolding (33:15)

This is because she says she has “a real problem with memory” (interview, line 49)

She then deletes it after she is satisfied that she has been addressed it in her writing.

Clicks link of the DP ‘Getting enthusiastic: using... CPD’ – ‘Edit’- ‘Files’ – ‘Getting enthusiastic: using... CPD’ – ‘Edit’ – ‘paste’ (she pastes the text of the assessment criteria which includes the tasks) – ‘Font Family’ and chooses ‘Georgia’.

She adds in the beginning of the text *‘To enable me to contribute to professional communities, I joined and set up a profile in ‘twitter’ and ‘LinkedIn’ several months ago. I initially set them following discussions with peers and my tutor on the ‘ADTELLS’ course last year but I did not really consider the content of my profile nor participate to any great extent. Although it is still relatively early in the Technology for Learning Delivery course, class discussions have led me to look at my profile on these sites and to consider more in depth my ‘internet presence’* [Anne finds all this frustrating: ‘Oh... So frustrating!']

Case-study 3 Video log: Paulo

<i>Time and activity</i>	<i>Researcher notes</i>	<i>Description</i>
00:00 – 00:42	Waiting for the programme to load up.	Pablo sits in front of the computer, takes a brief look of his notes on this assignment. Looks at the screen and at the notes one after the other. Pauses between glances, up and down.
00:42 – 01:52	Pablo is still mulling what is required of him. Seems a little confused.	He opens Microsoft Word. Responds to T's instructions to him specifically regarding “the different sections of the report” which is a task drawn from the results of a survey. He asks her to clarify something for him. T then turns to address the entire class to offer the same clarification and instructions.
01:53 – 03:50		Starts typing “My Report” whilst T addresses the class, then stops and listens again to T. He opens a new tab (Google) and searches for 'Kirklees College – Virtual Learning Environment.' He logs in to his account and then clicks on 'My Course: 15 – 18's Esol research' option.
04:14 – 05:02	He reaches the VLE interface to get his work.	Clicks on 'Participants' under the 'My Course: 15 – 18's Esol research' option and then he seems unsure for a while about what to do next, until he decides to go back to '15 – 18's Esol research.'
05:12 – 06:18	An ICT support staff member has just entered the room and is helping Pablo get to right part of the VLE for his work.	Asks for help from T. She asks him if he's in the wrong course and approaches him to help but he's in the right one. He goes on the left top of the page and clicks on the 'Course Overview: 16 – 18 ESOL Bridging Course'. One of ICT support staff, who was already in the room, comes over to help. He sees the 'Topic Outline' of the course.
06:19 - 07:16	Things are not cohering: VLE restrictions (enrolment key and password problems), an absent student’s lack of pre-assignment work makes him ill-prepared.	Pablo goes to the Enrolment options. According to the support staff member an ‘enrollment key’ for the course is required to get in to the relevant pages of the VLE which Pablo needs access to. T seems a little frustrated because of this delay and confusion. In the meantime a student has to leave the class in order to find the person who can provide him with his password. While waiting for that T tells to the rest to work on their reports. Pablo goes back to Microsoft Word

and starts typing again "in my report". Looks at the paper with his notes for a second that he now places in front of his keyboard, and goes on typing.

T gently chastises a student who has no survey results to work from as he was absent yesterday.

07:16 – 08:00

The ICT staff member, who had left the classroom, comes back as Pablo is mid-sentence, with the enrolment key. So Pablo manages to enroll himself.

08:00 -10:13

Pablo clicks on 'Diigo Linkroll', clicks some of the very small icons which expand menu items, and then goes back to his report (Word). Types "In my report I'm going to talk about 4 different social networks" (the VLE, YouTube, Facebook and Twitter).

T is still helping the student(s) who missed the homework to prepare for this task, and addresses the class: "is everybody ok now?"

Appendix B: Ethics review documentation

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UNIVERSITY OF LEEDS

Ibrar Bhatt
School of Education
University of Leeds
Leeds, LS2 9JT

**AREA Faculty Research Ethics Committee
University of Leeds**

1st November 2012

Dear Ibrar

Title of study: An investigation into the digital literacy practices of adult learners in classroom writing.

Ethics reference: AREA 11-103

I am pleased to inform you that the above research application has been reviewed by the ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee and following receipt of your response to the Committee's previous comments, I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

<i>Document</i>	<i>Version</i>	<i>Date</i>
AREA 11-103 ethics feedback response 2. Ibrar.docx	1	19/01/12
AREA 11-103 Informed Consent Form for obs phase 1 Ibrars study V1.docx	1	19/01/12
AREA 11-103 Informed Consent Form for phase 2-3 Ibrars study V1.docx	1	19/01/12
AREA 11-103 Response to feedback.docx	1	13/01/12
AREA 11-103 Ethical_Review_Form_V3 Ibrar.doc	2	13/01/12

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval. This includes recruitment methodology and all changes must be ethically approved prior to implementation.

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, and other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited.

Yours sincerely

Jennifer Blaikie

Senior Research Ethics Administrator
Research & Innovation Service

On behalf of Dr Anthea Hucklesby

Chair, [AREA Faculty Research Ethics Committee](#)

CC: Student's supervisor(s)

Informed consent form for observation of class (phase 1)

Title of Research	Digital literacy practices in home and class (PhD pilot study)
Name of researcher	Ibrar Bhatt
Name of supervising academics	Dr. James Simpson, Prof. Mike Baynham
E-mail	edib@leeds.ac.uk
Description of the broad nature of the research	To gather data to explore digital literacy practices of learners in Bradford College.
Description of your involvement and the expected time commitment	<p>Your expected involvement in my research is as follows:</p> <ul style="list-style-type: none"> • Initial whole class observation (approximately 4 sessions) <p>Anonymity will be assured by changing your names and people that you name, when writing my field notes.</p> <p>Confidentiality will be maintained in terms of storing data securely on computer and ensuring hard copies of transcripts and field notes are stored in a locked cupboard.</p> <p>As part of the data analysis process, raw data (such as transcripts) may be given to the doctoral supervisors to review.</p> <p>Data will be used and reproduced as case studies in a variety of research publications. Some pictures and sample work may also be used for this purpose. All artefacts will be anonymised at the source.</p>
Additional information about the research	The data collection timescale of this study is from January 2012 - March 2012.
Why have I been selected?	Your class has been selected for my research because of your use of computers for written assignments in the classroom and because it is a vocational programme.
Do I have to take part?	No. By not signing this form you indicate that you do not wish to take part. This will have no implications for your study.

Data obtained through this research may be reproduced and published in a variety of forms and for a variety of audiences related to the broad nature of the research detailed above. It will not be used for purposes other than those outlined above without your permission. Participation is entirely voluntary and participants may withdraw at any time.

Ibrar Bhatt is the data controller under the Data Protection Act (1998)

By signing this consent form, you are indicating that you fully understand the above information and agree to participate in this study on the basis of the above information.

Participant's signature

Date

Informed consent form for phase 2-3 of study

Title of Research	Digital literacy practices in home and class
Name of researcher	Ibrar Bhatt
Name of supervising academics	Dr. James Simpson, Prof. Mike Baynham
E-mail	edib@leeds.ac.uk
Description of the broad nature of the research	To gather data to explore digital literacy practices of learners in Bradford College.
Description of your involvement and the expected time commitment	Your expected involvement in my research is as follows: An overt student observation of your writing in class (approximately 1 sessions duration) A follow up interview (approximately 1 hour). All interviews will be recorded with a digital voice recorder. Anonymity will be assured by changing your names and people that you name during the interview in the transcripts. Confidentiality will be maintained in terms of storing data securely on computer and ensuring hard copies of transcripts and field notes are stored in a locked cupboard. As part of the data analysis process, raw data (such as transcripts) may be given to the doctoral supervisors to review. Data will be used and reproduced as case studies in a variety of research publications. Some pictures and sample work will also be used for this purpose. All artefacts will be anonymised at the source.
Additional information about the research	The data collection timescale of this study is from January 2012 - March 2012.
Why have I been selected?	You have been selected to be observed and interviewed so that I can see how you use digital tools (the Web, PC, phone, etc.) to put together and discuss your writing assignments.
Do I have to take part?	No. By not signing this form you indicate that you do not wish to take part. This will have no implications for your study.

Data obtained through this research may be reproduced and published in a variety of forms and for a variety of audiences related to the broad nature of the research detailed above. It will not be used for purposes other than those outlined above without your permission. Participation is entirely voluntary and participants may withdraw at any time.

Ibrar Bhatt is the data controller under the Data Protection Act (1998)

By signing this consent form, you are indicating that you fully understand the above information and agree to participate in this study on the basis of the above information.

Participant's signature

Date

Please keep one copy of this form for your own records

Many thanks!

Sample of ethics negotiations

Application section	Your response	Committee comments	Ibrar's response 18.01.12
A10, C15	<p>During the interviews participants might 'open up' and perhaps say more than they had originally wanted to or, and when reflecting later, might be very unhappy about something they had said. If painful memories are stirred, personal information disclosed, or voicing of unwelcome opinion, as part of my ethical procedure for dealing with this I would offer to give transcript to the interviewee to check, and discuss the level of confidentiality that would they would be happy with.</p>	<p>How would you deal with any participants if they become upset during the interview itself? It would be a good idea to explain beforehand that they can stop at any point and that they can choose not to answer some of the questions if they'd prefer not to, for example.</p>	<p>Given the nature of the research this may not occur. However I would, as mentioned by the committee, explain to the participant/s beforehand that they can stop at any time if they prefer not to continue, should such a situation arise.</p> <p>I will also give the participant/s the option of answering whichever questions they prefer, and not necessarily all of the questions I pose.</p> <p>(Sections A10 and C15 amended accordingly)</p>
Consent form	<p>Your response stated that "The consent form asks for blanket approval as I will decide upon which student to observe and interview (in phases 2 and 3) after insights from the initial observation and discussion with the teacher."</p>	<p>You have chosen to stick to one consent form. Therefore, if the student withholds consent to be interviewed, they also withhold consent to being observed. If they refuse to take part you need to pick a different class to observe rather than excluding the dissenting student from the class. This might be avoided if there were a separate consent form for each component as students are more likely to consent to observation than interview. However, if you feel confident that a whole class will consent then this method is fine. If you find that you need separate consent forms for the different components it may mean coming back to the ethics committee.</p>	<p>I have amended the consent forms and now have two. One for phase 1 of the research, and another specifically for phases 2-3.</p>

