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THE PROFESSIONAL LEARNING OF ACADEMICS IN HIGHER EDUCATION:

A SOCIOMATERIAL PERSPECTIVE

by

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for the Degree of Doctor of Education

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DECLARATION

I certify that this work has not been accepted in substance for any degree, and is not concurrently being submitted for any degree other than the Doctorate in Education (EdD) being studied at the Canterbury Christ Church University. I also declare that this work is the result of my own investigations except where otherwise identified by references and that I have not plagiarised the work of others.

Wayne Barry

DEDICATION

This thesis is dedicated to my Mother, who lit the touch paper to my own love of learning.

You are and always will be my first teacher.

ACKNOWLEDGEMENTS

I am indebted to my family and friends for their tireless support and vital encouragement, and for the compromises they had to make in providing me with the necessary space and time to devote to this research. A very special thank you goes to my 10 year-old niece, Freya, who constantly reminds me that learning is a joyous and rewarding activity.

Finally, as this is a sociomaterial study, I should like to extend my appreciation to the various technologies, objects, discourses, ideas, and spaces (so often taken for granted) that have facilitated and enabled my research, and in particular, my own professional learning.

ABSTRACT

Introduction

For academics in UK Higher Education (HE), professional learning (PL) is a complex endeavour involving a multitude of (in)formal learning encounters. However, these PL encounters are at risk as academics prioritised conflicting knowledge domains and negotiate various social and material engagements that can enable or encumber these encounters. This thesis reports on research that attempts to illuminate these sociomaterial entanglements using Actor-Network Theory and Non-Representational Theory as a theoretical framework.

Methods

A transformative mixed method case study of a single UK university using content analysis, questionnaire, interview and photovoice methods were undertaken. Twelve academic staff, with module leader responsibilities, were selected from the academic staff questionnaire (n:182) to be interviewed and photograph their PL experiences. Unique to sociomaterial investigation was the photovoice method, enabling the participants to become empowered as co-researchers.

Results

The analysis of the data suggests that academics tend to be strategic in prioritising conflicting knowledge domains. In the case of knowledge not related to their subject discipline, academics will often fast-track information from a "knowledgeable other". Furthermore, academics will construct "surrogate" or "transient" spaces in which to seek refuge from the various disruptions and interruptions generated by their institution. Academics will use these spaces for uninterrupted learning or work and as a means for promoting self-care.

Discussion

The study identified four interrelated spatial properties (*transient*, *affective*, *controlled* and *immersive*), which provides an explanation why some spaces were more conducive to PL than other spaces. Furthermore, space is composed of multiple and interconnected spatial configurations that coalesce into a single spatial configuration, which I call *coalescent space*. The study also proposes a number of future research directions involving the PL of early career academics and academics on sessional contracts.

Keywords

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ABBREVIATIONS

ALT	Association for Learning Technology
ANT	Actor-Network Theory
APD	Academic Professional Development
BCS	British Computer Society
BERA	British Educational Research Association
BSA	British Sociological Association
CPD	Continuing Professional Development
DfE	Department for Education
EPD	Educational Professional Development
ESRC	Economic and Social Research Council
EU	European Union
HE	Higher Education
HEA	Higher Education Academy
HEFCE	Higher Education Funding Council for England
HEI	Higher Education Institution
HEPI	Higher Education Policy Institute
HESA	Higher Education Statistics Agency
HROD	Human Resources and Organisational Development
HVI	Higher Vocational Institution
KEF	Knowledge Exchange Framework
LLL	Lifelong Learning

LTE	Learning and Teaching Enhancement
MOOC	Massive Open Online Course
NRT	Non-Representational Theory
NSS	National Student Survey
NTFS	National Teaching Fellowship Scheme
OECD	Organization for Economic Co-operation and Development
PD	Professional Development
PDP	Personal Development Planning
PGCAP	Postgraduate Certificate in Academic Practice
PGCLTHE	Postgraduate Certificate in Learning and Teaching in Higher Education
PL	Professional Learning
PLN	Professional Learning Network
POD	People and Organisational Development
QAA	Quality Assurance Agency for Higher Education
RDF	Researcher Development Framework
REF	Research Excellence Framework
TEF	Teaching Excellence and Student Outcomes Framework (formerly Teaching Excellence Framework)
TEL	Technology Enhanced Learning
UK	United Kingdom
UKPSF	United Kingdom Professional Standards Framework
WWW	World Wide Web

01

INTRODUCTION

1.1. Introduction

1.1.1. Prologue: Entrance Point?

The narrative of this thesis is structured around a beginning, middle and an end. My role as a researcher involves a sequence of entrance and exit points within this narrative. This introduction is one such entrance point. The conclusion at the end of thesis is one such exit point. My narrative starts with a personal anecdote that forms the origins of my research and this thesis:

> *I am a learning technologist and academic professional developer working in the Higher Education sector. One of my responsibilities is to work with Faculty, Schools and Programmes to arrange bespoke workshops around a particular theme or topic at a time and place of the academics' choosing. More importantly, these workshops have some intrinsic value to the academics - this is something that they are prepared to find time for in their busy working day. Once all the preparation has been done. The theme for the workshop has been set, the venue has been booked, the date and time has been arranged, everything has been agreed. I am told that twenty academics will be in attendance on this agreed day and time. Finally, the day of the workshop has arrived. There are only five academics in attendance at this workshop. The other fifteen have passed on their apologises for a variety of sound reasons. The bottom line is that they no longer have the time to commit to this workshop. They wonder if I will be able to re-run the workshop at another place and time. I can, that's the nature of my job. I reschedule a repeat performance of this workshop on a day and time of the academics' choosing. On the day, only four of the fifteen are able to make it. The other eleven have passed on their apologises for a variety of sound reasons. Again, time seems to be the issue for this non-engagement. I start to wonder if there are other issues at play that seem to interfere with academics engaging with their professional learning.*

1.1.2. Section Overview

In this introductory chapter, I will explain the purpose of this research, before presenting the context in which the study is situated. Next, I will set out the main aims and objectives of the study, then I will present the research questions that underpins this study. After which, I will summarise the contributions this study has made to the field of professional learning and development. Finally, I will outline the organisation of the thesis.

1.2. Purpose of this Research

This thesis concerns the professional learning of academics in Higher Education (HE) in the United Kingdom (UK). Specifically, they are located in a single Higher Education Institution (HEI) in South East England. The research is broadly qualitative, using a mixed methods transformative design, and framed within a sociomaterial perspective. Sociomateriality does not ask why things happen; rather it asks "how they occur. How they arrange themselves. How the materials of the world (social, technical, documentary, natural, human, animal) get themselves done" (Law, 2008, p. 632). Through this sociomaterial perspective, the purpose of the research is to explore how those conditions (e.g. academic role), situations (e.g. time pressures), spaces (e.g. shared offices), technologies (e.g. e-mail) and discourses (e.g. institutional policy) can come to enable or encumber an academic's engagement with professional learning.

Changes to the HE sector have meant that HEIs are having to be flexible and respond to the burgeoning tertiary educational market, as well as the needs of fee-paying students. Thus, the professional learning of academics in HE is further complicated with a sense of agency being potentially undermined. There seems to exist an expectation that academics will be familiar with a range of knowledge domains that often sit outside of their disciplinary area, suggesting conflicting priorities in what they choose to learn (e.g. subject discipline versus institutional policies).

A better understanding is needed of those conditions that enable or encumber an academic's capacity to engage with professional learning, thereby, allowing future academics, academic development teams and policy makers to develop new professional learning opportunities and to ensure development time is created and protected.

1.3. Context to the Thesis

The HE sector in the UK is facing an existential crisis of authority, legitimacy, identity and purpose (Behari-Leak, 2017) against the global backdrop of uncertainty, inequality and complexity (Barnett, 2000a; 2000b; 2016). Over the years, HEIs have been adopting more managerialist policies and practices, with various HE reforms introducing an accountability, auditing and performativity regime that is data driven (Mäkitalo, 2012; Anderson, 2017).

This study was conducted in the shadow of the UK's proposed withdrawal from the European Union (European Union Referendum Act 2015)[1], and a forthcoming higher education legislation (Higher Education and Research Act 2017) that threatened to align student fees against the newly introduced *Teaching Excellence and Student Outcomes Framework* (TEF). Furthermore, recent *Student Academic Experience Survey* reports were arguing that students were placing a much higher premium upon HE academics being able to teach and/or having the relevant professional experience, with less emphasis upon an academic being research active (Buckley *et al*., 2015; Neves & Hillman, 2016; 2017). Unsurprisingly, Russell Group university students were the notable exceptions to the otherwise general trends highlighted in the reports.

The traditional academic role once encompassed the "holy trinity" of teaching, research, and administration (Finklestein & Schuster, 2001). However, various UK HE reforms have introduced more complexity and diversity into academic roles and responsibilities (Brew & Boud, 1996; Blackmore & Blackwell, 2003; Boyd *et al*., 2015). In order to maintain and keep their positions, academics are having to learn new knowledge that often sits outside of their disciplinary area.

1.4. Aims & Objectives of the Research

Given the context of this study, as highlighted above, this study aims to explore those conditions that have come to enable or encumber an academic's engagement with professional learning. From the outset, the study sets out the following research objectives:

a. To bring to light those factors that enable academics' engagement with professional learning;

b. To bring to light those factors that encumber academics' engagement with professional learning;

c. To understand the decision making processes in which academics will prioritise one form of professional knowledge over another; and

d. To situate academics' multiplicity of enactments, encounters and engagements with professional learning, collected for this study, within a sociomaterial framework.

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[1] The European Union Referendum ("Brexit") campaign ran from 15th April 2016 until the day of the poll on 23rd June 2016.

1.5. Research Questions

In investigating the professional learning of academics in HE, the following research questions were adopted for this study:

1. What are the conditions (e.g. academic role) that enable or encumber the professional learning of academics in higher education?

2. To what extent does an academic give precedence to one form of professional knowledge (e.g. subject discipline) over another (e.g. institutional policy)?

1.6. Research Design

The aims and objectives of this study, as highlighted above, will be achieved through a mixed methods transformative design (Creswell & Plano Clark, 2017), which will be explored in more detail in the methodology and methods chapter (see *Chapter 4*). The transformative design is appropriate for this research because it elevates the voices of the participants involved to develop a call for action. It is, in design, broadly qualitative with a single quantitative component. These data sources are collected and analysed separately and then merged. The data collection will be made up of three work strands that will be used to inform the case study and will entail:

- Strand 1 - online questionnaire for academic staff.

- Strand 2 - individual, semi-structured interviews with academic staff.

- Strand 3 - individual, photovoice slideshow and commentary collated by academic staff.

1.7. Contributions of the Thesis

The contributions of this study can be separated into theoretical, methodological and practical contributions. Whilst a more detailed account can be found in the concluding chapter (see *Chapter 7*), a brief synopsis of each contribution is provided here. This study contributes on a theoretical basis, by identifying four interrelated spatial properties that explain why some spaces were less conducive for professional learning than other spaces: *transient*, *affective*,

controlled and *immersive*. I also argue that space is made up of multiple and interconnected spatial configurations that coalesce into a spatial configuration called *coalescent space*. The study also found that academics sought out advice, support and information from *knowledgeable others* and *knowledgeable communities*, which can be human and non-human in character. Moreover, for the participants in this research, it is knowing the route to this knowledge that is more important than the knowledge itself.

The methodological contributions of this study involve the use of photovoice, which offers a unique and a powerful addition to the sociomaterial 'toolbox'. Furthermore, in the field of education, the use of photovoice as a method is underutilised (Ciolan & Manasia, 2017). Photovoice's power and efficacy is found in the way it advocates participant empowerment and emancipation by giving marginalised individuals and communities a voice in which to express themselves. This became an important feature that provided the academics with a much needed voice to explore those professional learning issues that were important to them.

The practical contributions of this study are situated around developing a new vocabulary that is able to articulate these emergent spatial and material engagements, thus offering a practical contribution to the sociomateriality of professional learning. Furthermore, with proposals to reforming Higher Education (Higher Education and Research Act 2017) and the United Kingdom's withdrawal from the European Union (European Union Referendum Act 2015) taking place in the background, a unique view of professional learning is offered as academics begin to wrestle with the impending changes to the HE sector.

1.8. Organisation of the Thesis

This thesis is organised into seven chapters.

Chapter 1 introduces the thesis by providing an overview of the major elements of the study and briefly touches upon the study's findings.

Chapter 2 reviews the literature on professional learning and learning in the workplace. The various notions of 'learning' are explored by discussing three theorisations put forward by Hager, Lee and Reich (2012c), namely cognitive-psychology based theories, socio-cultural theories and post-Cartesian conceptions. This chapter will also consider more recent practice-based and sociomaterial approaches to professional learning.

Chapter 3 provides the underpinning theoretical framework for the study. The chapter discusses the notion of sociomateriality as the over-arching framework, supported by two

theoretical tools: Actor-Network Theory (ANT) and Non-Representational Theory (NRT). The chapter extends the discussion to introduce the reader to concepts and terminologies that are particular to ANT and NRT.

Chapter 4 discusses the methodology and methods used in the study. The chapter starts by considering my positionality within the study, and the challenges and opportunities in conducting 'insider' research. There is discussion around the choice of using a mixed methods transformative design. Each of the data collection methods used is critiqued, along with how the method will be implemented. The chapter highlights ethical considerations and the issues surrounding the transcription of interviews. Finally, there is discussion on the efficacy of the photovoice method as a sociomaterial approach, the challenges and opportunities that it presents the researcher. There is advice on how researchers can develop a non-representational photographic style.

Chapter 5 reports on the findings emerging from the sociomaterial data analysis and relates it back to each of the research questions stated at the beginning of the main study (see *Chapter 1*). Through four vignettes, the findings introduce a new vocabulary to explain the sociomaterial phenomena that is materialising as space, time, technology, people, processes and texts become intertwined in the professional learning practices of academics.

Chapter 6 discusses the findings of this study, and places them into perspective while taking account of the relevant literature. The discussion identifies four interrelated spatial properties that explain why some spaces are more conducive for professional learning than other spaces. Furthermore, an argument is posited that space is made up of multiple and interconnected spatial configurations that coalesce into a particular spatial configuration. There is discussion of the role of human and non-human knowledgeable others that enable academics to fill knowledge gaps in the non-subject discipline knowledge that they are expected to know. A more detailed commentary will be given specifically to the four interrelated spatial properties and the 'knowledgeable other' in terms of their implications for practice and further research.

Chapter 7 summarises the key findings of this thesis, and discuss both the contributions of this study and its limitations, put forward recommendations for policy makers and offer suggestions for further research. The chapter concludes with my reflections on the learning experiences encountered during this doctoral study.

1.9. Summary

In this introductory chapter, I have provided an explanation for this research, and reported the context in which the study is situated. I also set out the main aims and objectives of the study, and presented the research questions that underpin this study. I summarised the contributions that this study will hopefully make to the field of professional learning and development. I have laid out the general structure in which this thesis is organised. The next chapter reviews the literature that underpins this research.

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LITERATURE REVIEW

2.1. Introduction

The preceding chapter discussed the background to the research problem. This chapter reviews relevant literature on professional learning by exploring how such learning occurs in practice, and it does so through the lens of four inter-related concepts: informal learning, workplace learning, practice theory, and sociomateriality.

2.1.1. Section Overview

In Section 2.2, I begin by offering a cautionary note concerning 'learning' as a problematic term and locating the term within the context of professional learning. Section 2.3 aims to clarify what is meant by the term 'professional learning' as applied broadly within this study. In Section 2.3, I seek to distinguish between notions of informal and formal learning within the workplace. Hager, Lee and Reich's (2012b) useful ontological framework of learning will be introduced in Section 2.5 to highlight the prevalence and implications of the standard paradigm of learning in education and to trace the emergence of an alternative, post-Cartesian and practice-based conception. Practice theory is presented in Section 2.6 drawing on Schatzkian (Schatzki, 2001a; 2001b) notions of relationality and intelligibility of social practices. Section 2.7 introduces theories of sociomateriality in relation to professional learning (Fenwick *et al.*, 2011; Fenwick & Nerland, 2014). The chapter concludes in Section 2.8 by clarifying the relationship between work and learning.

2.2. Learning: A Cautionary Note

There are various connotations and understandings of learning that often go undefined, uncontested and unchallenged in professional learning literature (Fenwick, 2010b). Conceptually, learning is situated in a number of conflicting domains: biology, education, psychology, sociology and culture (Bransford *et al.*, 2000; Vella, 2002; Illeris, 2009; Säljö, 2009; Seung, 2012). As such, learning is a concept that is difficult to define (Illeris, 2009; De Houwer *et al.*, 2013) and tends to be expressed in quite functional terms, where learning is conceived as a "change in behaviour" resulting from some form of practice and/or experience (Lachman, 1997; De Houwer *et al.*, 2013). Scholars have been mindful not to confuse 'learning' with other cognitive and behavioural processes like "maturation, development and accidental changes in a person's capacities" (Säljö, 2009, p. 202). However, an attempt has been made to offer an expansive 'catch-all' definition of learning that frames the complex relationships of the *what*, *where*, *who*, and *when* of learning that informs a 'learning topography' framework

(Alexander *et al.*, 2009; Reynolds *et al.*, 2009). However, this 'catch-all' definition of learning is not without critics, who argue that this particular definition is significantly more complex compared to earlier iterations found in textbooks of the 1960s and 1970s and there is a danger that this definition is not able to adequately describe learning (Geary, 2009; Graesser, 2009; Säljö, 2009).

The term 'learning' has also been used to describe areas that relate to skills development, personal development, and the ability to access information (Fenwick, 2010b). Scholars have commented that the term has become "free-floating" (Usher & Edwards, 2007), or interpreted as a "wily shapeshifter" that "[conjures] itself [into] discursive guises such as policy imperative, code for growth, and synonym for education" (Fenwick, 2010b, p. 80). Indeed, Fenwick (2010b) argues that 'learning' as a term should not be used as it is "utterly hollowed out of any meaning worth discussing" (p. 80). Instead, Fenwick (2010b) goes on to argue that learning should not be conceived as a "single object", but as "messy object, existing in different states or perhaps [as] a series of different objects that are patched together through some manufactured linkages" (p. 80). A similar sentiment is shared by other commentators who conceive learning as a complex, relational web that connects the learner to particular contexts in ways that are always evolving (Hager & Hodkinson, 2009; Johnsson & Boud, 2010).

Dominant in the literature is the application of metaphors to describe learning (Sfard, 1998; Hager, 2004; Paavola *et al.*, 2004; Fenwick, 2008b; Hager & Hodkinson, 2009; Hopwood, 2014). Specifically, 'acquisition' and 'participation' metaphors have been used in abundance to describe particular forms of learning. The acquisition metaphor describes learning as being a process of knowledge acquisition (Sfard, 1998; Fenwick, 2008b). The participation metaphor, on the other hand, considers that learning takes place through participating in the practices of social communities (*ibid.*). As ideas of learning have evolved, so other metaphors have been adopted to describe them, these include: *knowledge creation* (Paavola *et al.*, 2004), *construction* (Hager, 2004), *becoming* (Hager & Hodkinson, 2009), and *emergence* (Hopwood, 2014). However, Hodkinson and Macleod (2010) warn that each metaphor assumes a particular approach to understanding and researching learning. Nevertheless, Tynjälä (2008) argues that these metaphors have enabled researchers to gain a better understanding of the nature of learning in relation to work, which can be characterised as "creating new modes of action, new practices, new procedures and new products" (p. 132).

2.3. Professional Learning

Professional learning along with its closely related associates (such as informal learning and workplace learning) has become a significant emerging field over the last decade (Hager *et al.*, 2012b; Fenwick & Nerland, 2014). In broad terms, professional learning has been defined as "learning [that] becomes professional when it is goal oriented and work-related" (Zuber-Skerritt *et al.*, 2015, p. 7). However, the term 'professional learning' has become troublesome and challenging (Fraser *et al.*, 2007; Mockler, 2013). It is a term that is conceptually vague, appearing to lack a clear definition that can distinguish professional learning from other similar terms, such as 'professional development' (Coffield, 2000; Gravani, 2007).

The terms 'professional learning' and 'professional development' have often been used interchangeably. Some scholars frame professional development as those activities that are intended to engage professionals in new learning around their professional practice (McAlpine, 2006; Webster-Wright, 2009). It is often concerned with factual and theoretical knowledge codified in books, reports and other media sources (Eraut, 1994; Tynjälä & Gijbels, 2012; Milligan & Littlejohn, 2014). However, other scholars have conceived professional learning as a continuous process that develops throughout a professional's lifelong career that encourages reflexivity, criticality and collaboration (Eraut, 1994; Groundwater-Smith & Mockler, 2009; Loughran, 2010; Wood & Su, 2014). It includes some element of context and situatedness leading towards significant shifts in practice (Eraut, 1994; Opfer & Pedder, 2011). Using examples drawn from Higher Education, these include (but are not limited to):

- informal interactions that can occur daily with colleagues and peers (Eraut, 1994; 2004; Webster-Wright, 2009; Mårtensson & Roxå, 2015; Pifer *et al.*, 2015);
- formal interactions organised through workshops, seminars, conferences and accredited courses and qualifications (Cilliers & Herman, 2010; Grant & Barrow, 2013); and
- the day-to-day business of academic work where academics learn by doing, practising and experimenting (Malcolm & Zukas, 2014; Van Schalkwyk *et al.*, 2015).

As such, professional learning "cannot be mandated, coerced or controlled, but can be supported, facilitated and shaped" (Webster-Wright, 2010, p. 12). Nevertheless, some scholars concede the importance of demonstrating the distinctiveness between the terms professional learning and professional development (Fraser *et al.*, 2007). The distinctiveness

found in professional learning concerns the ability to assimilate four types of knowledge (Tynjälä & Kallio, 2009; Tynjälä & Gijbels, 2012):

1. *factual and theoretical knowledge* (e.g. books);
2. *experiential knowledge* (acquired through on-going experimentation and practice);
3. *self-regulated knowledge* (focusing on metacognition and 'knowing oneself'); and
4. *sociocultural knowledge* (located in communities of practice and interactions).

Further efforts have been made to demonstrate the distinctiveness between these two terms (see *Table 1* below). However, some attributes describing professional learning, such as 'informal' and 'continuous engagement', have been used to describe professional development (see *Section 2.4* on informal learning).

Table 1: The distinctions between Professional Development and Professional Learning

Professional Development	Professional Learning
Organisation-driven	Learner-driven
Compliance	Agency
Transmission-led	Conversation-led
Episodic Engagement	Continuous Engagement
Learning as Acquisition	Learning as Becoming
Formal	Formal / Informal
Non-reflective	Reflective
Individual Approach	Collaborative Approach

The notion of professional learning has evolved. Traditionally, professional learning has been conceived as a person-centred process that comprises of personal experiences, the acquisition of skills, knowledge and competences. Over time, professional learning has been reconfigured to encompass more situated and participatory experiences of learning around particular contexts and communities (e.g. Lave & Wenger, 1991). The development of the 'practice turn' was concerned with the professional knowing and learning that occurred during everyday activities (Schatzki *et al.*, 2001). More recently, professional learning has been reframed to become more materially-sensitive by examining how material objects and bodies become enmeshed within the social performances and practices of everyday activities (Fenwick *et al.*, 2011; Fenwick & Nerland, 2014). In the following sections, the evolution of professional learning will be explored through the lens of its close associates informal learning (see *Section 2.4*), workplace learning (see *Section 2.5*), practice theory (see *Section 2.6*), and

sociomateriality (see *Section 2.7*). These concepts play a critical role in positioning the study within the broader traditions and ways of theorising professional learning. The study will adopt a sociomaterial lens to understanding what enables or encumbers the professional learning of academics.

2.4. Informal Learning

Formal learning is conceived as having learning objectives, with individuals attending an event with the explicit goal of acquiring skills, knowledge or competences. Formal learning opportunities usually occur during courses arranged by institutions (such as schools, colleges, universities), or during training sessions in the workplace (Hager & Halliday, 2006; Werquin, 2007). Formal learning is, therefore, related to structure, some form of monitoring, and institutional design and control.

Informal learning, on the other hand, is typically never organised and tends to be thought of as being experiential and spontaneous (Eraut, 2004; 2012; Hager & Halliday, 2006; Werquin, 2007). Informal learning opportunities usually occur in activities without learning objectives and without individuals knowing they are learning. Informal learning is said to be unstructured, unplanned, and outside institutional control. Furthermore, "mediating artefacts" (e.g. data, images) play a very important role throughout the informal learning process in structuring work and sharing information (Eraut, 2012, p. 25).

Informal learning is an important form of learning that is usually associated with work, professional, and lifelong learning (Hager & Halliday, 2006; Knight *et al.*, 2006; Marsick, 2009; Reimann *et al.*, 2010; Eraut, 2012). It is a concept that has drawn on educational theorists including Dewey (1997, [1938]), Argyris and Schön (1996), Knowles (1970), and Mezirow (1991), that emphasise some sort of experience for learning, critical reflection, and self-directedness (Marsick & Watkins, 1990). However, there still remains reluctance on behalf of researchers to recognise and accept the importance of informal learning, which largely stems from the dominant discourses concerning formal knowledge and learning (Eraut, 2012). Furthermore, Eraut (2012) argues that a failure to recognise informal learning may lead to the exclusion of knowledge that cannot be satisfactory explained or discussed.

Conceptualising formal and informal learning as part of a dichotomy may prove problematic when applied to professional learning, such as a manager coaching a colleague on a particular activity or task. Some leading researchers on professional learning argue that formal and informal dimensions of learning are increasingly intertwined (Tynjälä, 2008; Marsick, 2009).

An alternative way of expressing the difference between informal and formal learning is to conceptualise this difference as being on a continuum (Eraut, 2004). The notion of a continuum avoids this dichotomy by focusing on activity as performed and accepting overlap rather than mutual exclusion, or have one displace the other (*ibid.*). This is consistent with Colley *et al.* (2002) for whom informal and formal learning are inter-related and are best understood relative to "the wider historical, social, political and economic contexts of learning" (p. 1). For the purposes of this study, the terms formal and informal learning will help to contextualise those structured (i.e. an accredited course) and unstructured (i.e. talking to colleagues in a corridor) forms of professional learning that can occur inside and outside of the workplace.

2.5. Workplace Learning

Interest in workplace learning, as a field, has expanded into multidisciplinary fields that include adult, vocational and higher education, organisational studies, economics, and management studies (Tynjälä, 2008; Hager, 2011; Hager, Lee & Reich, 2012b). The rapid expansion of information and communications technologies (ICT), an increase in internationalisation and globalisation, a shift towards developing 'knowledge economies', changes in occupational and organisational structures, along with a rigorous commitment to lifelong learning agendas have precipitated an interest in workplace learning (Fejes & Nicoll, 2008; Tynjälä, 2008). This relatively new field has generated a number of different concepts and approaches to understanding learning within the context of work, such as workplace learning (Billett, 2011), work-based learning (Manley *et al.*, 2009), informal learning (Marsick & Watkins, 1990; Eraut, 2004), organisational learning (Argyris & Schön, 1996), situated learning (Lave & Wenger, 1991), and expansive learning (Engeström, 2001; 2011; Beighton, 2016). Furthermore, research into workplace learning can take on many facets: the learning of individuals, the learning of groups, of communities, of organisations, of inter-organisational networks, and of regions (Tynjälä, 2008). Consequently, the research literature on learning in workplaces and organisations is prolific and fragmented. Furthermore, many scholars have noted that the literature on workplace learning has given limited attention to power relations and politics, the relation between knowledge creation and identity, agency and innovation in the workplace, and the influence of learning taking place outside the workplace (Fenwick, 2008a; 2008b; Hodkinson *et al.*, 2008; Sawchuk, 2011).

In some cases, the research literature has adopted a simplistic view of 'workplace learning' to mean individual change, whereas 'organisational learning' relates to groups. This explicit

division of learning has seen many recent perspectives in workplace learning refusing to separate the individual from the group when considering learning processes (Fenwick, 2008b; Johnsson & Boud, 2010). However, Fenwick (2008b) argues that workplace learning should be conceived as those:

> relations and dynamics among individual actors and collectives … [it] is understood to involve not just human change but interconnections of humans and their actions with rules, tools and texts, cultural, and material environments (p. 19)

Thus, learning is embodied, not just involving a series of cognitive activities, and is "often embedded in everyday practices, action[s], and conversation[s]" (Fenwick, 2008b, p. 19). This is a view shared by Hopwood (2014, p. 349), who posits that workplace learning has "essential temporal, spatial, bodily and material dimensions", which are seldom recognised in the traditional discourses of work and learning. Furthermore, researchers cannot assume that the workplace is a unified environment for all learners. Instead, researchers need to recognise that an individual's working and learning context will be different depending on their circumstances and organisational positions (Tynjälä, 2008). Indeed, workplace learning can be a combination of the following modes of learning:

1. incidental and informal learning, which takes place as a side effect of work (Marsick & Watkins, 1990; Eraut, 2004; 2012);
2. intentional, but non-formal learning activities related to work (e.g. mentoring, intentional practising of certain skills or tool use); and
3. formal on-the-job and off-the-job training (Tynjälä, 2008).

In an attempt to make sense of the various distinctions and understandings of learning, a number of scholars have offered a range of frameworks that try to identify, map or categorise learning and approaches to knowledge. For example, Fenwick (2010b) in a recent meta-review of workplace learning literature identified eight ways of approaching workplace learning. Hager *et al.* (2012c), on the other hand, offer fewer, broader, ontological classifications of work and learning. These are located around three dominant theories of learning: *cognitive-psychology-based theories*, *socio-cultural theories*, and, *post-Cartesian theories*. These three distinct categories of learning have been cited in the works of others (Aberton, 2010; Fenwick *et al.*, 2012; Mulcahy, 2012). Whilst not perfect, these three broad ontological classifications of work and learning provide a coherent framework to discuss ontological, epistemological and philosophical distinctions amongst leading learning theories, they help to map and underscore prevalent conceptual shifts adopted in contemporary

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learning literature, and offer a sound platform to articulate influences of philosophy and psychology in educational literature and practice (Hager, 2011; Hager *et al.*, 2012c).

2.5.1. Cognitive-Psychology Based Theories of Learning

Hager, Lee and Reich's (2012c) first category of learning is best characterised by the 'acquisition' metaphor and shares a number of common features with a wide variety of theories located within this broad spectrum. These common features are primarily focused upon the individual and are predominantly concerned with learning being a rational and cognitive process. The dominance of the rational mind can be traced to the ideas of the 17th century philosopher, René Descartes, who questioned the nature of being and asserted that he exists because he thinks (Merriam & Bierema, 2014). Descartes claimed that thinking is a separate activity from the body, which functioned like a machine to filter information to the mind (*ibid.*). This assertion became known as Cartesian dualism, which represented a separation of mind/body, where the mind is privileged over bodily performances (*ibid.*). From a Cartesian perspective, professional learning could be considered as personal endeavour comprised of external worldly experiences and internal ponderings.

Much later, Behavioural psychologists like Edward Thorndike, John B. Watson and B.F. Skinner, forwarded a particular perspective of learning that stipulated behaviours could be learnt through a series of rewards and penalties whereby knowledge could be acquired, stored, transformed and applied (Fenwick, 2010b). Thus, learning is treated as a 'thing' that can be 'acquired' and 'transferred' by learners, where learning is treated as a 'one-off' activity or event (Hager *et al.*, 2012c). This approach to learning is closely tied with assumptions around formal learning and has been described by Hager (2004) as the "standard paradigm of learning". This paradigm has a number of features: first, it frames knowing as being universal in that it can be acquired and applied. Second, learning is considered transparent "as if we recognize that we have both a capacity to learn and a capacity to bring to mind what has been learned" (Winch, 1998, p. 19). Third, all mental processes and procedures are foremost in the learning process. Indeed, these "standard paradigm of learning" features share characteristics with Cartesian dualism with its preoccupation with thinking (what minds do) rather than action in the world (what bodies do) (Winch, 1998, p. 63).

However, this paradigm has invited a number of criticisms that have included its excessive individualism, a devaluation of non-propositional learning, a focus upon intellectual understanding rather than its application, and the reduction of learning into hierarchies and

dichotomies (Schön, 1983; 1987; Hager & Halliday, 2006). For these critics, they suggest that professional learning is more than isolated, cognitive phenomena; rather professional learning is socially situated.

2.5.2. Socio-Cultural Theories of Learning

Unlike the previous category, Hager, Lee and Reich's (2012c) second category of learning can be characterised by the 'participation' metaphor, which tends to challenge those individual and mentalist assumptions of learning to foreground social and cultural aspects of learning. In some cases, the focus is directed towards the social (Lave & Wenger, 1991), in other accounts the focus embraces both individual and social learning (Hodkinson *et al*., 2008). However, the notion that learning is an individual or social endeavour is heavily disputed within socio-cultural learning domain (Hager *et al*., 2012c). Indeed, learning is conceived as a continuous process of participation, which is shaped within appropriate social, organisational and cultural contexts, thus rejecting the notion that learning is a product or a 'thing' (*ibid*.).

The challenge to the supremacy of mentalist approaches to human knowledge came from the early contributors to socio-cultural theories, namely Michael Polanyi, Lev Vygotsky, and John Dewey (Merriam & Bierema, 2014). In particular, Polanyi's (2005, [1962]) recognition of tacit and explicit knowledge; Vygotsky's (1978) notion of internalisation and 'tool-mediated action'; and Dewey's (1997, [1938]) observations of the hierarchy between the theoretical and practical domains, suggesting a much larger role of things outside an individual's mind. By the late 1990s, other learning theories began to emerge that introduced ideas of 'learning by doing' (Edgar, 2012). For example, Kolb's (2014) experiential learning model, which drew awareness to individual learning processes, through a sequence of experience, reflection, thinking, and active experimentation. Furthermore, workplace learning was being recast as not just a 'thing' or "contained within individual minds", but rather as "distributed across persons, tools, and learning environments" (Leander *et al*., 2010, p. 330).

These socially derived understandings within the workplace began to emphasise practice as the basis for professional learning (Hager *et al*., 2012c; Zukas & Kilminster, 2012), such as Lave and Wenger's (1991; Wenger, 1998; 2010) work on situated learning and communities of practice. They describe learning as being a continual, social process of engagement in a practice-based community, referred to as 'legitimate peripheral participation' (LPP). Through LPP, a novice gains knowledge of the profession as they become socialised into the community's ways of seeing, doing and speaking, to gradually become a full member of that

community (Lave & Wenger, 1991). However, some critics have argued that there are limitations with the communities of practice model (Aberton, 2010; Fenwick *et al.*, 2012). These limitations include a failure to recognise complex relations and movements that traverse across multiple sites (Fenwick *et al.*, 2012), the inability to explain the circulation and distribution of power, learning and change within and across communities of practice (Aberton, 2010), and a failure to satisfactorily explain how knowledge is mobilised and connected across different contexts (*ibid.*). In a bid to not just recognise, but centralise practice, a conceptual shift has seen a move from 'community of practice' to 'practices of the community' (Gherardi, 2009a).

2.5.3. 'Post-Cartesian' Theories of Learning

In Hager, Lee and Reich's (2012c) third category of learning, the 'becoming' metaphor emerges and breaks away from those accounts that describe learning as being either cognitive or socio-cultural. Drawing upon recent developments in science, philosophy, and the social sciences these approaches make an epistemological and ontological shift that exceeds the limitations of Cartesian dualism of mind/body, individual/collective, and subject/object. For example, Foucault challenges the humanist unified self by espousing the inseparability of knowledge and action, the importance of the relationship between power and knowledge, the ways learning is 'made up' in subjectivities, and in the governing of the self and others (Usher & Edwards, 2007; Fejes & Nicoll, 2008; Hager *et al.*, 2012c).

In the last two decades, practice-based (see *Section 2.6* for further discussion) and sociomaterial (see *Section 2.7* for further discussion) approaches have been adopted to gain insights into professional and workplace learning. For practice-based approaches, learning is formed within a given situation. It becomes inseparable from the whole person, including their language, actions, discourses, practices, passions, experiences, histories, and feelings (Beckett & Hager, 2002; Hager *et al.*, 2012a). Furthermore, practice-based approaches highlight the importance of informal learning as a rich source of knowledge, which is often overlooked within educational practices, by paying attention to the "local, the personal and the particular" (Beckett & Hager, 2002, p. 12). Sociomaterial approaches adopt such theoretical tools like *actor-network theory* (Gherardi & Nicolini, 2000; Mulcahy, 2007; Fenwick & Edwards, 2010; Zukas & Malcolm, 2017) and *complexity theory* (Davis & Sumara, 2008; Osberg & Biesta, 2008), which emphasise the ongoing, temporally changing process constituting learning, intimately bound up with practice and change (Hager *et al.*, 2012c). Learning, from a sociomaterial perspective, is not fully decided upon in advance, rather it

begins to emerge from contexts and practices in ways that are not always anticipated or predicted (Fenwick *et al.*, 2011; Fenwick & Nerland, 2014). These contexts and practices are also not static or given, but are dynamic, contingent and unpredictable, in which practices, knowings and subjectivities are constituted (Fenwick & Nerland, 2014). More broadly, sociomaterial approaches have shifted the focus beyond humans towards networks of humans and non-humans, which includes material objects and arrangements (Fenwick *et al.*, 2011; Fenwick & Nerland, 2014). In the next section, practice and practice theory are expanded upon to develop a theoretical positioning of professional learning as a 'Post-Cartesian' approach to learning.

2.6. Practice-based Approaches

The term 'practice' is also complex, contested and ambiguous in meaning and scope (Gherardi, 2009b; 2012; Tsoukas, 2009; Hager, 2012; Hager *et al.*, 2012c). Practice has been described as the performative, situational, and social understanding of daily work tasks and activities (Gherardi, 2001; Schatzki, 2001a; 2006; Orlikowski, 2002; Nicolini, 2009). Moreover, practice, learning and knowing are mutually constituted, in embodied performances, situated in space and time, in a complex web of relationships among people, material artefacts and activities (Gherardi, 2001; 2009a). For Schatzki (2001a, p. 2), practices are "embodied, materially mediated arrays of human activity centrally organised round shared practical understanding". Though Kemmis (2005, p. 422) simply notes that practice "is what people do, in a particular place and time". In other words:

> Practices exist and evolve in historical and social contexts – times, places and circumstances – and they take shape at the intersection of complex social forces, including the operations of power. (Hager *et al.*, 2012c, p. 4)

In applying Foucault's (1991) notion of 'governmentality', particular regimes of practices govern and shape the way we learn, work and practice – it is used to govern both ourselves and others (Hager *et al.*, 2012c). It shapes the way we think and act across local contexts and circumstances (*ibid.*). More recently, the rise of neoliberal government reforms, particularly in the Public Sector, have introduced new kinds of learning and work practices situated around a culture of managerialist policies and practices (Hood, 1995; Boyask *et al.*, 2004; McGettigan, 2014). This neoliberal culture is reconfigured around corporatist ideals of efficiency, entrepreneurialism, strong management and customer-focused principles (By *et al.*, 2008; Winter, 2009; Hussey & Smith, 2010). These principles extend into constructing new

accountability, auditing and performativity regimes within the Public Sector (Evetts, 2003; Mäkitalo, 2012). From a HE sector perspective, these regimes of practices would include the *Research Excellence Framework* (REF), *Teaching Excellence and Student Outcomes Framework* (TEF)[2], and *Knowledge Exchange Framework* (KEF)[3] – these are governmental frameworks used for judging the quality of institutional research, teaching and knowledge exchange activities respectively.

The 'practice turn' represents an important shift in social theory and philosophy that espouses practices as the primary form of social analysis (Schatzki *et al.*, 2001). This shift emphasises the inseparability of people and things through their collective attributes and actions, from the point they were originally produced, to how they eventually go on to operate together. Schatzki (1997) positions practices ontologically by claiming that social order transpires through the 'intelligibility' and 'sociality' acquired through shared relational practices. Understanding practice has important analytical implications when examining what and how professionals learn in specific contexts. According to Beckett and Hager (2002), a practice-based analysis can offer insights into the social, cultural, and contextual factors from which practices are produced.

However, Fenwick (2012a) suggests that practice-based learning fails to pay particular attention to materiality, such as those codified approved practices (e.g. professional standards), those everyday routines that are recognised, but are rarely codified (e.g. peer-mentoring), and those adaptive processes (e.g. workarounds) that are often applied to make codified practices work. Some practices are more implicit and widely understood (e.g. memory practices, tool practices), they are often taken for granted and no longer become visible.

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[2] In October 2017, the TEF scheme was renamed as the *Teaching Excellence and Student Outcomes Framework*, reflecting the addition of new metrics (from the *Longitudinal Educational Outcomes* dataset) on student employment outcomes, including those on graduate earnings. Although the full name of the exercise changes, the acronym will remain as TEF (DfE, 2017).

[3] The *Knowledge Exchange Framework* (KEF) was proposed in October 2017, focusing attention upon "the third leg of the HE stool" - knowledge transfer and commercial outcomes. It is anticipated that allocations for *Higher Education Innovations Funding* (HEIF) will be informed by the outcomes of the KEF (Coiffait, 2017; Johnson, 2017).

2.7. Sociomaterial Approaches

A sociomaterial perspective recognises that social, material and affective relations are inseparable and are interconnected in everyday practice (Orlikowski, 2007; Sykes *et al.*, 2011). The purpose of a sociomaterial approach is not to reify or bring into sharp relief things, but to:

> ...contest the notion that things (including objects, texts, human bodies, intensions, concepts etc.) exist separately and prior to the lines of relations that must be constructed among them, and to examine the dynamic process of materialization – including material and discursive practices – through which things emerge and act in what are indeterminate entanglements of local everyday practice. (Fenwick, 2010a, p. 107)

Non-humans and humans act upon one another in ways that mutually transform their features and activities (Fenwick *et al.*, 2011). Learning is therefore not treated as something external, enduring, or owned by an individual. Learning is entangled in the sociomateriality of performing practices, in relations among people as well as materials (Davis & Sumara, 2008; Fenwick, 2010a; Fenwick & Edwards, 2011; Fenwick *et al.*, 2012).

Drawing upon a comprehensive review of the literature employing a sociomaterial perspective, Jones (2014) derived the following key features of sociomateriality, which are related to particular philosophical assumptions:

- *Materiality* – situating materiality at the centre of our understanding phenomena related to contemporary organisations;

- *Inseparability* – denotes the view that the social and material are not isolated phenomena, but inextricably intertwined or mutually interdependent;

- *Relationality* – takes the position that relations are an essential aspect of any contemporary phenomenon;

- *Performativity* – observing the relations and boundaries between the social and material are a situated performance and not a solely human capacity; and

- *Practices* – understanding how these relations and boundaries act and interact within routine activities and practices, rather than discourses or cognition.

These five key features can begin to provide an explanation of what is meant by the term "entanglement" that is often used in sociomaterial studies, though these features are far from being uncontested as philosophical assumptions. Indeed, these features are applied very differently in current sociomaterial studies. First, only a few of the articles identified by Jones (2014) address "all of the notions that ... are entailed in sociomateriality" (p. 895). Second, in addition to differences in the number of key features considered, the philosophical assumptions themselves can be interpreted and employed very differently. Thus, Jones (2014) suggests that "a number of variants are possible that take different positions on these" key features (p. 922), such as the "weak" and "strong" accounts of sociomateriality. Advocates of the "weak" sociomateriality argue that, while objects and humans are highly interdependent and able to produce effects only in concert, social and material phenomena can still be considered as separate yet interacting. In contrast, for scholars adhering to "strong" sociomateriality, boundaries between properties of objects and humans do not exist as such, but emerge from their relations in a particular situation. A detailed account of sociomateriality will be presented in Chapter 3, which will discuss the study's theoretical framework.

A variety of sociomaterial frameworks have introduced a rich set of theoretical tools and resources to investigate and analyse the relation between the social and material worlds (Orlikowski & Scott, 2008; Fenwick *et al.*, 2011; Fenwick & Nerland, 2014). These theoretical tools include (but are not limited to):

- *complexity theory* (see Fenwick *et al.*, 2011);

- *cultural-historical activity theory* (CHAT) and other generations of activity theory (see Engeström, 1987; 2001);

- *actor-network theory* (ANT) (see Latour, 1987; Law & Hassard, 1999) and 'after-ANT' (see Latour, 2005; Law, 2008); and

- *spatial theory* (see Lefebvre, 1991; Soja, 1996; Thrift, 1996; 2005; 2008; Massey, 2005); and

Common to these different theoretical tools is a concept of *emergence* or *becoming* (Hager, 2011). Emergence (the *emergence principle*) concerns how in a complex adaptive system (e.g. a professional learning event), a novel (the *novelty principle*) phenomenon arises out of

recursive interactions with existing phenomena (e.g. HE academics using social media) (Davis & Sumara, 2008; Osberg & Biesta, 2008). Attempts to trace any causation or human intent from these interactions to their outcomes may prove futile as the initial phenomena is effaced by reiterations making it literally impossible to 'track back' to the beginning of the initial phenomena (Fenwick, 2009a; 2010a; 2012b; Dahlgren *et al.*, 2016). There are different ways to express emergence, the most common of these is "weak" and "strong" emergence. The former describes high-level properties (e.g. classroom) being reducible to its individual constituents at a lower level (e.g. table, chairs, books). The latter describes high-level properties (e.g. consciousness) being autonomous and irreducible to its individual constituents at a lower level (e.g. brain, neurons) (Blee, 2013; Cook, 2013; Leidenhag, 2013; Guay & Sartenaer, 2016). All four theoretical tools are also heterogeneous and contested sites of inquiry yet have had wide uptake over time and across multiple fields of interests. The next four sections will briefly discuss complexity theory, cultural-historical activity theory, actor-network theory and spatial theory in developing a theoretical understanding of professional learning that is constituted of social, material and affective relations, which are inseparable and interconnected in everyday practice.

2.7.1. Complexity Theory

Complexity Theory comprises a highly heterogeneous set of perspectives with origins from mathematical and ecological systems (Fenwick, 2012b). It has provided theorists with a useful way of understanding how things (individuals, tools, technologies, ideas and environments), activity, knowledge, and communities are continually brought forth in unpredictable, non-linear and self-organising systems in the process of professional learning (Fenwick, 2008b; Fenwick & Nerland, 2014). Complexity theory states that global patterns arise from the behaviour of local interacting agents, but this global pattern cannot be traced back to the behaviour of any individual agent, rather this behaviour emerges and is novel with respect to the individual agents (De Wolf & Holvoet, 2004; Fenwick, 2012b). Learning is conceived as a continuing and emergent process through which individuals become capable of more refined, adaptable and creative actions and behaviours, and the relationships that bind these together (Fenwick, 2008b; Fenwick & Nerland, 2014). However, according to Fenwick (2012b), complexity theory is unable to address issues surrounding inequalities, hierarchies, exclusions or oppression in social practices. Nevertheless, complexity is able to offer insights into these non-linear processes of emergences that can include those entities, patterns and activities that give rise to inequality and oppression (*ibid.*).

2.7.2. Cultural-Historical Activity Theory

Cultural-Historical Activity Theory (CHAT) is derived from Marxist traditions and later expanded upon by Vygotsky (1978) and Engeström (1987; 1999; 2001; 2011). CHAT primarily focuses on activity as the unit of analysis by highlighting the relations in a collective, artefact-mediated, and object-oriented activity system (Miettinen *et al.*, 2008; Fenwick, 2012a). These systems encompass individual and collective perspectives, which are understood through their historicity and are driven by contradictions and instabilities (Engeström, 1999; Fenwick, 2012a). CHAT adopts an 'expansive' view of learning, which centralises communities over individual learners, horizontal movement and hybridization over vertical one-way improvement from incompetence to competence, and processes that formulate theoretical knowledge and concepts over the acquisition of knowledge (Engeström, 2011). In other words: "learners learn something that is not yet there" (Engeström, 2011, p. 74). Furthermore, material objects (e.g. tools, technologies, signs) are the primary means of passing on knowledge because objects are understood to consolidate knowledge, mediate social interaction and the negotiation of knowledge, and suggest alternative modes of operation (Miettinen *et al.*, 2008). However, CHAT has been criticised for using overly prescribed analyses that are determined by models of triangles, its neglect of emotion and subjectivity in systems, and its failure (in some cases) to address significant contradictions of capitalism (Fenwick, 2012a). Nevertheless, CHAT has been useful in highlighting how learning is situated in activity, how history (re)configures culture and power, and how objects mediate professional and workplace learning and practices (*ibid.*).

2.7.3. Actor-Network Theory

Actor-Network Theory (ANT) is conceived as being part of a family of theories, a loose 'toolkit' or a "sensibility to the materiality, relationality and uncertainty of practices" (Latour, 2005; Law & Singleton, 2013, p. 491). ANT is broadly known for its "commitment to practice and stuff of the world" (Law, 2008, p. 643) and how practices are productive and make things (Law, 2007). Learning is taken to be a combined exercise within a network that traverses space and time that includes non-human (e.g. tools, pens, white boards, computers, charts) as well as human entities. Learning is a performed accomplishment, that is "no agent or knowledge has an essential existence outside a given network: Nothing is given in the order of things but performs itself into existence" (Fenwick, 2006, pp. 294-295). ANT employs a process known as 'translation', whereby human and non-human entities come together and

connect (Latour, 2005). These entities change ('translate') one another to form links that will bring forth networks of co-ordinated action and things (Fenwick, 2012a). Indeed, these networks produce forces and other effects, for example, knowledge, identities, rules, routines, new technologies, regulatory regimes and so on (*ibid*.). As such, no foundational categories, such as 'human being', are recognised, but ANT is able to highlight different forms of participation in practice (Latour, 2005; Law, 2007; 2008). ANT is particularly useful for tracing (or following) the ways that entities come together by showing which things are included or excluded, how some connections work and other do not, and how these connections are strengthened to make them stable and durable (Fenwick, 2012a). A detailed account of ANT will be presented in Section 3.5 of Chapter 3, which will position ANT as the first of the study's two theoretical tools.

2.7.4. Spatial Theory

Spatial Theory followed from the 'spatial turn' that was prevalent within the social sciences during the 1990s. It draws on Marxism, post-colonialism, science and technology, as well as geography and architecture (Gulson & Symes, 2007). Space is conceived as being transient and social in nature, that is "space is a construct not a given, [it] is relative not absolute", with spaces for learning being particularly "fluid and ephemeral" (*ibid*., p.105). These spaces for learning are relational and "constituted in textual, temporal and pedagogic processes" (Mulcahy *et al*., 2015, p. 580). Spatial Theory examines the social and material constitution of space and is concerned with understanding the political, economic, or power relationships and dynamics of social practices within it (Edwards *et al*., 2011). In education, spatial theory has been adopted to understand how space has been constituted in "ways that enable or inhibit learning, create inequities or exclusions, or open and limit possibilities for new practices and knowledge" (Fenwick *et al*., 2011, p. 11). Space is not conceived as a static empty container, but as a "dynamic multiplicity that is constantly being enacted by simultaneous practices" (Edwards *et al*., 2011, p. 221). It has been increasingly acknowledged in education that the spatial is socially constituted and space and time are conjoined (Leander *et al*., 2010; Boys, 2011; Mulcahy *et al*., 2015).

More recently, new forms of spatial thinking have emerged from human geography, which have been labelled as *non-representational theory* (NRT) (Thrift, 1996; 2005; 2008). NRT offers a conceptualisation of space that is composed of an abundance of multiple forces; it is decisively materialist in character; the body and embodiment is already conceived as being in a spatial set of relations; that affective intensities and forces act upon and through the human

body; and that it encompasses a political practice (Beyes & Steyaert, 2011). A detailed account of NRT will be presented in Section 3.6 of Chapter 3, which will position NRT as the second of the study's two theoretical tools to examine how people, spaces and objects can enable or encumber an academic's ability to engage with their professional learning.

2.8. The Relationship between Work and Learning

Throughout the review of the literature, attention has been given to the number of professional and workplace theories of learning that exist to explain and understand how professionals learn in a workplace environment. As Fenwick (2010b) notes, professional and workplace learning is made up of "messy objects and blurry maps". Studies, such as the recent project by Malcolm and Zukas (2014), indicate that professional learning and (academic) work cannot be treated separately as distinct and discreet categories situated within isolated and specific contexts, rather "work and learning are intricately inter-related" (Mulcahy, 2011, p. 204) as advanced by practice-based and sociomaterial perspectives.

A recent body of research literature in professional learning is providing fresh insights by unpacking and problematising this work-learning entanglement issue – learning and work are being treated as (co-)emergent. For example, Hopwood (2014) reveals the different 'textures' that constitute professional learning, specifically *time*, *space*, *bodies* and *things*. He suggests that *affect* could be a fifth 'texture'. Implicit in these four 'textures' is the assumption that learning is built on a:

> ... performative notion of knowledge (knowing); an epistemology characterised by provisionality, uncertainty, contingency and multiplicity; and ontological assumptions in which knowing and multiple realities are fluid, fragile and in constant flux through mutual connection. (Hopwood, 2014, p. 360)

Building upon this work on 'textures', Reich, Rooney and Hopwood (2017) introduce the concept of 'sites of emergent learning' (SEL), which emerge "through and are constituted in relationships between social practices and the materialities of work" (p. 566). It is a particularly important concept as it recognises those practices that are often regarded as mundane, routine or principally about an exchange of information, rather than new knowledge production. Other studies that focus upon sites of learning at work are emerging, for example, Zukas and Kilminster (2012) introduced the concept of 'critically intensive learning periods' (CILPS) to explain the interrelationships between learning, practice and regimes of familiarity. From the perspective of medical education, they argue that too much

attention is paid to formal codified knowledge and not enough on the everyday aspects – these critically intensive learning periods addresses the learning of doctors in transitioning to new levels of responsibility and their career trajectory. These will become useful ideas in exploring the professional learning of academics in higher education, within the context of academic work and practice.

2.9. Summary

This review of literature has highlighted that professional learning is a messy and complex endeavour involving informal, practical, collective, and materially-entangled phenomenon. Instead of using psychological or socio-cultural conceptual tools, this complexity has prompted a call for a "reconceptualisation of professionals' learning" (Fenwick & Nerland, 2014), which draws upon *sociomaterial* tools and resources that has the potential to lead to better materially-sensitive descriptions of professional learning in higher education, and offers new ways of investigating and theorising professional and vocational practice and learning in organisations and society (*ibid*., p. 2).

In the light of the detailed consideration of the literature, this study aims to explore those conditions that have come to enable or encumber an academic's engagement with professional learning. I formulated the research questions that shaped the thinking behind the development of the research design, which is discussed in Chapter 4. The research questions are listed below:

1. What are the conditions (e.g. academic role) that enable or encumber the professional learning of academics in higher education?

2. To what extent does an academic give precedence to one form of professional knowledge (e.g. subject discipline) over another (e.g. institutional policy)?

In the next chapter, I will advance the notion of *sociomateriality*, as introduced in Section 2.7, as the theoretical framework that will underpin the study. Specifically, I will discuss the adoption of two theoretical tools, briefly introduced in Sections 2.7.3 and 2.7.4 respectively, *Actor-Network Theory* (ANT) and *Non-Representational Theory* (NRT) that will enable me to investigate and offer particular insights into professional learning of HE academics. I will extend the discussion on ANT and NRT to familiarise the reader with its unique concepts and terminologies so that it will be helpful to comprehend the discussion on findings and analysis in Chapter 5.

03

THEORETICAL FRAMEWORK

3.1. Introduction

In the previous chapter, I examined the key concept of professional learning along with closely related terms: informal learning and workplace learning. The review of literature highlighted that professional learning is a messy and complex concept and endeavour involving informal, practical, collective, and materially-entangled phenomenon.

Sociomateriality provides a set of theoretical tools and resources to enable the "reconceptualisation of professionals' learning"(Fenwick & Nerland, 2014, p. 2) through elucidating how those conditions (e.g. academic role), situations (e.g. time pressures), spaces occupied (e.g. shared offices) and tools used (e.g. e-mail) can act and interact upon an academic's engagement with their professional learning. A sociomaterial approach is concerned with the complex relationships that occur between human and non-human entities (Law, 2008). However, sociomaterial research into the professional learning of HE academics is sparse. Where these accounts do exist (*c.f.* Malcolm & Zukas, 2014), the teaching dimension is often privileged (*c.f.* Knight *et al.*, 2006). This study aims to contribute to the literature on the professional learning of HE academics through a sociomaterial perspective by:

1. Drawing upon the core components of academic practice to develop a wider picture of professional learning in HE; and

2. Contributing to an area of research that provides academics with a much sought after voice as learners in discourses around their professional learning.

3.1.1. Section Overview

This chapter begins in Section 3.2 by offering a rationale for adopting this theoretical framework for the study. Section 3.3 considers what is understood by the term 'sociomaterial', and why it has become important to research and studies into professional and vocational learning. In Section 3.4, a brief discussion follows on using *aspectuality* to reconcile some of the issues associated with sociomaterial approaches. Next, I discuss two theoretical tools that enable the researcher to investigate and offer particular insights into professional learning: *Actor-Network Theory* (ANT) (see Section 3.5) and *Non-Representational Theory* (NRT) (see Section 3.6) - both of which I will be using as part of this study. I will extend the discussion to introduce the reader to concepts and terminologies that are particular to ANT and NRT. The chapter concludes in Section 3.7 by explaining how the

two different tools, ANT and NRT, are able to be reconciled, enabling this study to trace human and non-human encounters, and the (pre)cognitive, affective and sensual human experiences associated in the professional learning of HE academics.

3.2. Rationale for the Theoretical Framework

Academics face a complex and uncertain HE milieu when negotiating their professional learning. This complexity and uncertainty can be understood from a sociomaterial perspective. Doing so enables the researcher to examine the relations between the academics (social) with the *what*, *how*, *when* and *where* elements of their professional learning activities (material). Sociomateriality has been used in the field of work, education and professional learning (Fenwick, 2009b; 2010a; Fenwick *et al*., 2011; Fenwick & Nerland, 2014). A range of theoretical tools (e.g. ANT, NRT) have been adopted to explore these sociomaterial practices, affective encounters, material agencies and spatial engagements across varying locations, situations and practices.

Whilst sociomateriality is my overarching theoretical framework, I employ two supporting theoretical tools, ANT and NRT, to further investigate the sociomateriality of professional learning amongst HE academics. While this may appear to introduce unnecessary complexity to an already complex situation, the use of secondary theories has given me a way of looking at the world that both honours the messiness of experience while also empowering actions. ANT is particularly powerful at tracing those human and non-human 'actors' (e.g. people, organisations, objects, technologies, spaces) that are implicated in an academic's engagement with their professional learning. These 'actors' will be responsible for strengthening or weakening that engagement. This study is concerned with what conditions can enable or encumber an academic's engagement with professional learning. NRT, on the other hand, is receptive in capturing those affective sensibilities. Scholars argue that professional learning can be an emotional experience (Sylwester, 1994; Linnenbrink, 2007; Shuck *et al*., 2007; Pekrun *et al*., 2011; Quinlan, 2016). Moreover, the objects used and the occupation of certain places and spaces are imbued with an emotional attachment that may enable and/or encumber the professional learning of academics (Proshansky *et al*., 1983; Morgan, 2010; Scannell & Gifford, 2010; Baxter *et al*., 2015; 2016).

The use of ANT and NRT to understand the professional learning of HE academics has been under-explored. An opportunity exists for ANT and NRT to be used as theoretical tools to inform and enhance our understanding of academics' professional learning engagement. I will

be exploring sociomateriality, Actor-Network Theory and Non-Representation Theory further in the following sections of this chapter.

3.3. Sociomateriality

3.3.1. What is Sociomateriality?

Studies into professional and vocational practices and learning have privileged the social, political and cultural domains of learning activity, placing human beings at the centre of these investigations (Fenwick, 2010a; 2012a). As such, the social and material elements of everyday life are treated as distinct entities. This perspective has been challenged by a group of researchers who have been working with a relational ontology that rejects the notion that the world is composed of distinct entities (Pickering, 1995; Knorr Cetina, 1997; Mol, 2002; Barad, 2003; 2007; Latour, 2005; Suchman, 2007; Thrift, 2008; Malcolm & Zukas, 2014).

Instead, everyday life is considered to consist of an intimate relationship between the social and the material, which blurs the distinction between the two (Orlikowski & Scott, 2008). Here, the 'social' sphere may refer to all human aspects of action: discourses, ideas, symbols, politics, desires, fears, language and practices. The 'material' world, on the other hand, may refer to the animate and inanimate components of action: humans, animals, pencils, paper, email, desks, spaces, software, work allocation forms, passwords and policy documents. In reality, these social and material categories are not distinctive in any way (Leonardi, 2011). Thereby:

> ...in this relational and performative ontology, objects and humans only come into existence when they enter intra-actions. They have no inherent, a priori properties, they only acquire them through their mutual interpenetration in their mutually constitutive and emergent relationships, representing a completely relational ontology. This makes social and material essentially inseparable. (Tunçalp, 2016, p. 1074)

The notion of *intra-action* is used to replace the term 'interaction'. Here, interaction assumes that there are separate individual agencies that precede their interaction. In contrast, intra-action recognises that distinct agencies do not precede their interaction, rather they emerge through their particular intra-actions (Barad, 2007, p. 33). As Barad notes, the "distinct" agencies are only distinctive in a relational sense, they do not exist as individual elements (*ibid.*).

According to Tunçalp (2016), this *intra-action* between the social and the material is critical in configuring professional learning as a set of practices that encompasses particular ways of knowing, deciding and doing that are enacted throughout professional learning activities (Fenwick & Nerland, 2014). Thus, a sociomaterial framework does not ask *why* things happen; rather it asks "*how* they occur. *How* they arrange themselves. *How* the materials of the world (social, technical, documentary, natural, human, animal) get themselves done" (Law, 2008, p. 632, original emphasis).

However, within sociomateriality there are many differing theoretical and ontological positions in which the everyday relationship between the social and material are expressed (Jones, 2014; Martine & Cooren, 2016; Weißenfels *et al.*, 2016). These varying positions include:

- *entanglement* – the social and material are treated as comparable and inseparable agencies, where the social and the material mutually co-constitute each other (Barad, 2007; Orlikowski, 2007);

- *imbrication* – the social and material are regarded as interrelated agencies that are distinct elements of overlapping patterns, so that the elements function interdependently (Leonardi, 2011);

- *assemblage* – the relationship between the social and material are viewed as constitutive components. As such, this combination of components is either positioned as inseparable or separable. This results in activity that changes over time and/or context leading towards different sociomaterial practices (Suchman, 2007); and

- *aspectuality* – the social and material worlds are regarded as offering two contrasting, yet intractable ways (or *aspects*) in which everything that comes into existence is experienced or expressed through its relational embodiments (Martine & Cooren, 2016). Later on in the chapter, I will be explaining why I have adopted aspectuality as my ontological position.

Other concepts that feature this intimate relationship between the social and the material, include *intra-action*, *interweaving*, *interlocking* and *intertwining* (Kautz & Jensen, 2012; 2013). Furthermore, these variants articulate "weak" and "strong" accounts of sociomateriality (Jones, 2014). Briefly, a "weak" account argues that while humans and non-humans are

interdependent, social and material phenomena can still be separate yet interacting. Conversely, a "strong" account argues that social and material phenomena are inseparable and cannot preserve their distinctiveness.

3.3.2. Criticisms of Sociomaterial Inquiry

Adopting a sociomaterial inquiry is becoming a popular approach amongst researchers (Jarzabkowski & Pinch, 2013). However, there are concerns that researchers have a superficial understanding of sociomateriality, particularly in their treatment of human and non-human agencies (Jarzabkowski & Pinch, 2013; Martine & Cooren, 2016). Critics argue that sociomateriality is just a "buzzword" (Sutton, 2010; Weißenfels *et al*., 2016) and that the term is nonsensical with ambiguous real world applications. In other words, researchers should be using foundational categories like 'user', 'technology' and 'software' instead.

Mutch (2013), for example, has raised ontological concerns with sociomaterial approaches. He argues that sociomaterial accounts fail to be specific about the technologies involved and neglect to articulate adequately broader social structures (Mutch, 2013). His claims have been dismissed because he has critiqued earlier work that could have "quite easily [drawn] on poor interpretations or applications" and "cannot constitute credible evidence against" sociomateriality (Scott & Orlikowski, 2013, p. 78). Others have argued that there are methodological issues because sociomateriality conflates the social and material worlds into the same constituent (Leonardi, 2011; Tunçalp, 2016). For researchers, the social and material components are neither phenomenologically nor analytically distinct (Leonardi, 2011). By combining the social and the material, this can leave researchers theoretically vulnerable as it weakens their analytical power to explicate how the social and material worlds stand and change differently (*ibid*.). In an attempt to bridge the gap between the social and the material, the notion of *aspectuality* provides a conceptual tool which considers sociality and materiality as being two contrasting, yet intractable ways (or *aspects*) in which everything that comes into existence is experienced or expressed through its relational embodiments (Martine & Cooren, 2016).

3.4. Aspectuality

The notion of aspectuality was developed from a Communication as Constitutive of Organizations (CCO)[4] perspective. It presents the social and material worlds as being two contrasting, yet intractable "aspects of everything that exists, whether we are talking about emotions, ideas, discourses, practices, institutions, computers or rocks" (Martine & Cooren, 2016, p. 143). In other words, from an aspectuality perspective, the social and the material co-exist and represents two sides of the same enactment.

As such, aspectuality refutes the concept of imbrication, as proposed by Leonardi (2011), because it makes a distinction made between the social world, on one side, and the material world, on the other side. The concept of entanglement, as proposed by Barad (2007) and adopted by Orlikowski (2007) implies that the social and material are intertwined is also problematic. This implies that their ontological distinction is still maintained, even if their entanglement makes this distinction difficult to make (Martine & Cooren, 2016).

By highlighting the social aspect of an entity, this places a focus on the relations that connect it with other entities. In contrast, by highlighting the material aspect of an entity, this places a focus on what sustains its existence (*ibid.*). The social and material aspects of an entity are therefore inseparable, not because they are entangled, but recognising that everything has *both* social and material aspects - this is what is meant by 'aspect' (Martine & Cooren, 2016; Wilhoit, 2018). In discussing the sociality and materiality of an entity, it does not mean these two terms are synonymous, but rather:

> The material and social aspects of something are thus somewhat unique in the sense that, although irreducibly different one from the other, they cannot present themselves one without the other. (*ibid.*, p. 150)

The importance of aspectuality to this study is to ensure that the social entities are not neglected in favour of the material entities.

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[4] CCO approach posits that the elements of communication, rather than being fixed in advance, are reflexively constituted within the act of communication itself. It is argued that the CCO approach is compatible with materiality, and will allow for "tackling the questions of materiality and relationality in a manner that is at once practical, embodied, and dynamic" (Martine & Cooren, 2016, p. 144).

3.5. Actor-Network Theory (ANT)

In the following sections, an explanation of ANT is presented first, followed by an introduction of the key concepts of ANT, and finally criticisms associated with ANT.

3.5.1. What is ANT?

Actor-Network Theory (ANT) was developed in Europe during the 1970s and 1980s within the field of Science and Technology Studies (e.g. Callon, 1984; 1986; Latour, 1986; 1987; Law, 1986; 1992). It provided scientists with a set of sociological tools to explain the nature of scientific knowledge and facts within the social and political domains in which they operate (Law, 1992; Van House, 2004; Best & Walters, 2013). ANT's strength lies in its adaptability (Callon, 1999; Mol, 2010), where it is proposed as a loose 'toolkit' or a "sensibility to the materiality, relationality and uncertainty of practices" (Law & Singleton, 2013, p. 491).

However, attempts to provide a tidy definition of ANT or characterise it in a "series of abstract bullet points" (Law & Singleton, 2013, p. 485) are resisted as ANT takes an anti-reductionist stance to working with complexity. ANT is neither a "single thing" nor a multiplicity of "random heap of bits and pieces" (Law, 1999, p. 12), it is something "in-between" (Murdoch, 1997b). It is critical of binary dualism often found in (social) science, i.e. structure / agency, objectivity / subjectivity, and so forth (Murdoch 1997a; 1997b), which restricts a range of theoretical and practical possibilities (Law, 1999). ANT comes with a unique repertoire of concepts and vocabulary that are used in explorative and experimental ways to interrogate how 'actors' are attuned and "assembled in those practices" (Mol, 2010; Law & Singleton, 2013).

3.5.2. Key Concepts in ANT

3.5.2.1. The Actor

Broadly speaking, an actor refers to any entity (human or non-human) that can either be a distinct individual (e.g. an academic at a university) or a collective unit (e.g. HEIs within a community). An actor will constitute a particular network (e.g. an office, an organisation) and is able to make a difference. Actors are only seen as the sum of their interactions with other actors in the network (Walsham, 1997; Michael, 2017).

3.5.2.2. Focal Actor

The focal actor is the central actor within the network. It is this actor that attempts to translate the interests of other actors within the network to their cause (e.g. assessment policy document) (Callon, 1984; Michael, 2017).

3.5.2.3. Intermediaries and Mediators

The intermediary and mediator are particular types of actor. An intermediary reliably transports meaning without changing it, so that an association can be accomplished (Latour, 2005). The mediator, on the other hand, can transform, translate, distort, and modify the meaning that they are supposed to be carrying. These do not simply disrupt or destroy associations, but can proliferate and complicate them, thus making them unpredictable (*ibid.*)

3.5.2.4. Actor-Network

An actor-network emerges from the successful alignment of human and non-human actors who will jointly engage in some organised collective activity on behalf of the focal actor. Apart from being complex, these actor-networks are also intrinsically local, contingent, and unstable over time. Their strength and solidity depends on the level of engagement and on the number of associations achieved by the actors involved, according to which they may enlarge, shrink, or in some cases even totally collapse and/or be replaced by other networks (Law, 1992; Michael, 2017).

3.5.2.5. Agnosticism, Generalised Symmetry and Free Association

ANT addresses the issue concerning the analysis of the production of knowledge through the application of three guiding principles.

The first guiding principle is known as *agnosticism*. By advocating it, ANT imposes *a priori* analytical impartiality to the researcher, in an attempt to produce unprivileged interpretations of the data collected on the actor-networks under investigation (Callon, 1984; 1986; Ritzer, 2005). In other words, such a principle categorically forces the researcher to start his/her study with no preconceived ideas about the field.

The second guiding principle, which is central to ANT, is called *generalised symmetry*. It adopts the stance that humans and non-humans play an equally essential part in the construction of actor-networks (Callon, 1984; 1986; Ritzer, 2005; Cressman, 2009). In other words, rather

than generalised symmetry being interpreted in its extreme form, it implies that there is a commitment to employ the very same analytical and descriptive framework when dealing with human and non-human actors. By advocating this principle, ANT does not erase the differences between humans and non-humans. On the contrary, ANT recognises agency but not intentionality in non-humans, as the latter remains a peculiar characteristic of human beings (Latour, 2005).

The third guiding principle, which is the fundamental cornerstone of ANT, is called *free association*. It imposes no *a priori* distinctions between natural and social phenomena. Such distinctions are to be intended only as effects of networked activity, never as its causes (Callon, 1984; 1986; Ritzer, 2005).

3.5.2.6. Sociology of Translation

The three guiding principles, as noted above, introduce a novel approach to power relations, that of the "sociology of translation" (Callon, 1984; 1986; Ritzer, 2005). This refers to the process that enables the network to be defined and controlled. It is through the actors negotiating and agreeing upon the outcome of the process, that the actors' identities are established and attributed, power relations are recognised, and scenarios are delineated. Translators, or 'spokespersons', play a key role in this process. This process consists of four interrelated stages or "moments":

1. *problematisation* – a focal entity (an individual or a group) defines the nature of the problem, identifies the other entities (human and/or non-human individual or group) involved in forming the network, suggests how this problem is resolved and, in the process, makes the focal entity "indispensable" to other entities (Callon, 1984, pp. 203-206).

2. *intéressement* – the focal entity seeks out other entities and "locks" them into their assumed roles within the network so that the problem can be resolved (*ibid.*, pp. 206-211).

3. *enrolment* – the focal entity defines roles and relationships that other entities have assumed within the network (*ibid.*, pp. 211-214).

4. *mobilisation* – the focal entity ensures that a spokesperson(s) for the various collective entities within the network are able to 'represent' their respective members (*ibid*., pp. 214-219).

During the translation stages, the "identity of actors, the possibility of interaction and the margins of manoeuvre are negotiated and delimited" (*ibid*., p. 203).

3.5.2.7. Immutable and Mutable Mobile

An immutable mobile states that objects are created through inscription[5] which can be transported over a long distance and still convey unchanging information, since they are not affected by local uncertainties (Latour, 1987; Ritzer, 2005). In contrast, mutable mobile asserts that objects can reconfigure themselves, that different realities may be loosely rather than rigidly associated, and that multiple actor networks can exist, not just singular ones (*ibid*.).

3.5.2.8. Betrayal

Betrayal describes a situation when actors do not abide by the agreements (translations) achieved by their spokesperson (Latour, 1987; Ritzer, 2005).

3.5.3. Criticisms of ANT

Since ANT began to develop as a conceptual tool, it has been subject to a flow of criticism. Broadly, five strands of criticism have emerged. The first strand (undoubtedly, the most controversial) problematizes the notion of 'generalised symmetry' that positions human and non-human actors as being inseparable with non-human actors having agency (Walsham and Sahay 1999; Doolin and Lowe 2002; Kipnis, 2015; Michael, 2017). Latour (2005) argues that without the relevant actors being present and participating within a network, it would be challenging to perform any given tasks.

The second strand is concerned that ANT is reductionist in some sense: that it focuses more upon local considerations rather than global ones, thus diminishing the number of possibilities available for translation (Kim & Kaplan, 2006; Vuokko & Karsten, 2007). However, an alternative ANT approach has been proposed where local and global networks are mobilised by forming a single locus which shapes, mobilises and controls all transactions

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[5] This is the process of creating textual, cartographic, or visual artefacts that remain stable through space and time ensuring the interests of the actor-network are protected and the roles of actors are recorded.

between the two networks. This particular approach has been used as a framework in some ANT studies (*c.f.* Stanforth 2006; Strong and Letch, 2012).

The third strand positions ANT as being amoral as it fails to consider social, political and moral consequences of technological choices (Vuokko & Karsten, 2007; Heeks, 2013). However, it has been argued that the amorality of ANT is not a necessity. Moral and political positions are possible, but one must first describe the network before taking up such positions (Bijker, 1993, Walsham, 1997).

The fourth strand argues that ANT case studies are often highly descriptive and, limited in providing explanations. However, Latour (2005) invites researchers to "follow the actors themselves" (p. 179), though decisions will need to be made as to which actors to include or exclude from the network (Miller, 1997; Bloomfield & Vurdubakis, 1999; Mitev, 2009). However, ANT practitioners argue that researchers need to ensure that the parameters are "explicitly defined and justified" and actors clearly identified and accounted for (O'Connell, *et al*., 2014). Nevertheless, researchers cannot follow actors everywhere (Latour, 2005) and will have to engage in a "practice of ordering, sorting and selection" (McLean & Hassard, 2004, p. 500).

Finally, the fifth strand argues that there are three shortcomings of ANT: its failure to accommodate the unexpected, its lack of a notion of 'the event', and a neglect of the corporeal capacities of humans (Thrift, 2000a; Bear, 2013; Müller & Schurr, 2016). It has been argued that Non-Representational Theory (NRT) is able to provide some conceptual tools, such as *affect* and *atmosphere* that can bridge this gap (Thrift, 1996; 2005; 2008). The next section will cover NRT in some detail.

3.6. Non-Representational Theory (NRT)

In the following sections, an explanation of NRT and its properties is presented first, followed by an introduction to the key concepts of NRT, and finally criticisms associated with NRT.

3.6.1. What is NRT?

Non-Representational Theory (NRT) emerged from the innovations of non-representational thought, performances and practices developed by the counterculture of the 1960s (Rycroft, 2007). During the mid-1990s, Nigel Thrift (see Thrift, 1996; 2005; 2008) and associates (Dewsbury, 2000; 2003; Dewsbury *et al*., 2002; Wylie, 2005) developed NRT further. For

Thrift (2008), NRT's interest lies in "the geography of what happens". This offers a descriptive "bare bones of actual occasions" (p. 2) with an accent on "how space and time emerge through embodied practice" (Macpherson, 2010, p. 1-2). The philosophical antecedents of NRT are located in the phenomenological traditions of Heidegger, Merleau-Ponty and Wittgenstein, the neovitalist approaches of Bergson, Foucault and Deleuze, and the poststructuralist perspectives of Butler and Haraway (Cadman, 2009; Macpherson, 2010; Vannini, 2015).

NRT provides researchers with a rich and eclectic set of resources to investigate the "more-than-human, more-than-textual, multisensual worlds" (Lorimer, 2005, p. 83) that can be used to "unlock and animate new (human and nonhuman) potentialities" (Thrift & Dewsbury, 2000, p. 411). Researchers are encouraged to re-examine their reliance on representation through "social constructionist" accounts and move "away from a view of the world based on contemplative models of thought and action toward theories of practice which amplify the potential flow of events" (Thrift, 2000b, p. 556). That is not to say representation is not taken seriously, but rather NRT challenges us to view representation as a form of "presentation" (Dewsbury *et al.*, 2002, p. 438), or something that is "more-than representational" (Lorimer, 2005).

3.6.2. Properties of NRT

NRT is not a theory and defies definition (Cadman, 2009; Waterton, 2013): it can be regarded as a "style of thinking" that places import upon praxis (Thrift, 2000a, p. 216), or even as a series of "tactical suggestions" (Dewsbury *et al.*, 2002, p. 439). In his latest articulation of NRT, Thrift (2008) formulates his "hybrid genre for a hybrid world" (Vannini, 2015, p. 3) into seven core tenets (Thrift, 2008):

1. To "capture the 'onflow' ... of everyday life" (p. 5);
2. To be "resolutely anti-biographical and pre-individual" (p. 7);
3. To focus upon practices, performances and actions (p. 8);
4. To recognise the agency of human / non-human actants (p. 9);
5. To be experimental (p. 12);
6. To stress the importance of affect and sensation (p. 12); and
7. To incorporate formations ("poetics") of space (p. 15).

Designed to sharpen researchers' senses, these tenets enable them to "hear the world" and allow the world to "speak back" by developing techniques and ways of thinking that generate fresh ideas and opens up the imagination and sense of play (Thrift, 2008, pp. 18-20). NRT is

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challenging and, at times, oblique. For example, memory is often neglected or has a "ghostly presence", where its "close cousins" affect, emotion and imagination are privileged in the research and literature (Jones, 2011, p. 875). Where memory is entangled with emotion, affect is entwined with imagination and creativity (*ibid*.). It is a piece of "transgressive data" that is often unaccounted for (St. Pierre, 1997).

Nevertheless, NRT offers an "ideographic presentation of detailed descriptions gathered from a variety of sensitivities" (Hill *et al*., 2014, p. 384). For example, there are areas of daily life that are rarely valued, quickly forgotten or remain uncaptured by traditional research methods. These can be revived (Dewsbury, 2003), allowing for a new range of human and non-human actors to be examined (Anderson & Harrison, 2010).

3.6.3. Key Concepts in NRT

3.6.3.1. Affect

Affect is an important philosophical concept for NRT and more broadly in sociomaterial approaches. It refers to the reciprocal capacity for bodies to affect and be affected, it is linked to the self-feeling of being alive - that is vitality (Cadman, 2009; Thrift, 2004). According to Nigel Thrift (2008), affect is regarded as those "energetic flows" or intensities that pass between bodies (human and non-human) in ways that generate some form of change (Hill *et al*., 2014). The concept of affect encompasses passions, moods, feelings, and emotions, but it is not defined by theories of emotion, though affect and emotion have been erroneously used interchangeably (Cadman, 2009; Hill *et al*., 2014). As Thompson and Hoggett (2012) explain:

> Affect concerns the more embodied, unformed and less conscious dimension of human feeling, whereas emotion concerns the feelings which are more conscious since they are more anchored in language and meaning. (pp. 2-3)

For example, we can tell if someone is angry by how they look, walk, carry themselves, by the gestures they deploy, by the tension that may be visible in their bodies, all this we register before they even speak.

3.6.3.2. Atmosphere

Within the social sciences there is growing literature on the concept of *atmosphere* (Anderson, 2009; Bissell, 2010; Biehl-Missal & Saren, 2012; Adey *et al*., 2013; Anderson & Ash, 2015). In such work, this concept has opened new approaches for thinking towards and around the

relationship between bodies and spaces in ways that attend to the often-taken-for-granted, and the implicit effects that encounters between human and non-human bodies can generate (Adey *et al*., 2013; Anderson & Ash, 2015). As Dyson (2009) notes:

> [T]he atmospheric suggests a relationship not only with the body and its immediate space but with a permeable body integrated within, and subject to, a global system: one that combines the air we breathe, the weather we feel, the pulses and waves of the electromagnetic spectrum that subtends and enables technologies, old and new, and circulates ... in the excitable tissues of the heart. (p. 17)

Thus, atmosphere can be understood in a meteorological sense as "a turbulent zone of gaseous matter surrounding the earth and through the lower reaches of which human and non-human life moves". Atmosphere can also be understood in an affective sense as "something distributed yet palpable, a quality of environmental immersion that registers in and through sensing bodies while also remaining diffuse, in the air, ethereal" (McCormack, 2008, p. 413).

3.6.4. Criticisms of NRT

A major criticism of NRT is that it is an ambiguous concept, partly because of its complex ideas and partly because of its limited application in research (Vannini, 2015). Specifically, there are concerns around the notion of "non-representational" and how researchers "represent" something that is "fundamentally non-representable" (McCormack, 2002; Carolan, 2008). The issue arises when analytical attempts to explain non-representational phenomena "ultimately dies" (Carolan, 2008, p. 412). Scholars using NRT consider the term "more-than representational" as a suitable compromise (Lorimer, 2005).

3.7. Reconciling ANT with NRT

Actor-Network Theory and Non-Representational Theory are affiliated to the same "praxeological family of theories" (Reckwitz, 2002, p. 244) that emphasises practice, action and performance. Both perspectives embrace relational materialism, recognising agency of human and non-human actors and rejecting binary dualism, such as nature / culture (Murdoch 1997a; 1997b; Cadman, 2009; Hill *et al*., 2014). However, these approaches are not without their differences (Marshall, 2008).

ANT is particularly strong in centring the learning process and aligning that with the material (Fenwick, 2010a), but it may overlook the precognitive world (e.g. habits and involuntary

actions) as precedence is given over to non-human actors (Hill *et al.*, 2014). While NRT is able to sharpen focus upon the daily life situations across a range of (pre)cognitive, affective and sensual human experiences, encounters, interactions and routines that occur within an increasingly post-human world (Lorimer, 2005; Campbell *et al.*, 2010; Hill *et al.*, 2014), it is particularly here that ANT and NRT are able to complement each other. The adoption of aspectuality brings together the material aspects of ANT with the social aspects of NRT.

3.8. Summary

In this chapter I positioned sociomateriality as the over-arching theoretical framework supported by two powerful theoretical tools, Actor-Network Theory and Non-Representational Theory, in which to reconceptualise the professional learning of HE academics. I argued that the rationale for using these theoretical tools was to generate novel and fresh ideas regarding academic work and practice. However, I noted that the treatment of the social and material worlds had varying theoretical and ontological positions (Jones, 2014; Martine & Cooren, 2016; Weißenfels *et al.*, 2016). As such, these could offer the researcher either "weak" or "strong" accounts of sociomateriality. I posited that *aspectuality* offered a theoretical and ontological position whereby the social and the material co-existed and represented two sides of the same phenomena (Martine & Cooren, 2016). I argued that other sociomaterial theoretical and ontological positions failed to discern social and material properties.

A critique was offered on the application of ANT and NRT as theoretical tools that can be used to explore the extent to which HE academics enacted and constituted their professional learning through their dynamic intra-actions with various material and spatial encounters. Furthermore, these interactions are situated within a continuum of temporal and affective sensitivities. The drawing of these combined interactions, encounters and sensitivities are further circumscribed by institutional, national and global policies and agendas, forming a complex research assemblage. I extended the discussion to introduce the reader to the rich vocabulary that is often used in ANT and NRT studies, so that it would be helpful to comprehend the discussion on findings and analysis in Chapter 5 later on.

In the next chapter, I will introduce the methods and methodology used in the study. There will be some discussion around my positionality and ethical considerations within the study, and highlight the challenges and opportunities in conducting 'insider' research. I will justify my choice of using a mixed methods transformative design. Each data collection method will

be critiqued, along with how that method was implemented. I will extend the discussion to include issues surrounding the transcription of interviews.

04

METHODOLOGY & METHODS

4.1. Introduction

4.1.1. Section Overview

In the previous chapter, I outlined the sociomaterial theoretical framework that underpins the study. In this chapter, I will be presenting an appreciation of the relevant methodological issues and research method instruments employed during the research process. The choice of research method instruments is critical to the exploration of complex and entangled practices in the professional learning of HE academics in the UK. The methodology is situated within a sociomaterial perspective, which considers the interrelated relationships associated with space, time, objects, policies and power.

Decisions and choices should be informed by the most important aspect of research design: the research questions (Blaikie, 2010). The rationale for this chapter is to demonstrate how my chosen research methodology is able to respond to the challenges and issues arising from investigating the following research questions formulated from the literature review in Chapter 2:

1. What are the conditions (e.g. academic role) that enable or encumber the professional learning of academics in higher education?

2. To what extent does an academic give precedence to one form of professional knowledge (e.g. subject discipline) over another (e.g. institutional policy)?

This chapter begins by setting out the aims and objectives of the research project (Section 4.1.2). This is followed by Section 4.2 where I address my positionality, issues relating to 'insider' research, and highlight the ethical considerations regarding this study. In Section 4.3, I explain why I have adopted a mixed methods design, in particular, the transformative design. I provide a rationale for the use of the transformative design in relation to the methods used, and offer some commentary regarding the sample population. Next, Section 4.4 details the three data collection methods used and, in particular, the 'photovoice' method, which is unique to sociomaterial studies and within the field of education. Some commentary on the nature of transcription is provided. Section 4.4 will also explain how the 535 respondents for the questionnaire were selected, from which 12 participants were recruited to take part in the interview and photovoice elements of the research project. In the final section (Section 4.5),

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an original methodological contribution is offered by discussing the efficacy of the photovoice method as a powerful tool for sociomaterial investigation.

4.1.2. Aims & Objectives

To explain the inseparability of the social and material worlds, the research is underpinned by a relational ontology and performative epistemology. A relational ontology underlines the constitution and reconstitution of humans and non-humans in their connectivity and intertwined histories (Orlikowski, 2007; Orlikowski & Scott, 2008), that is how "everything that is has no existence apart from its relation to other things" (Langley & Tsoukas, 2010, p. 3). A performative epistemology moves the attention away from 'knowledge about things' to 'performance of practices' (Barad, 2003) that accentuates 'knowing as a practice', that is to say knowledge is performed and not locked away in our minds (Orlikowski, 2002).

Professional learning is complex and messy (Law, 2004), involving a multiplicity of formal (e.g. a workshop) and informal (e.g. a conversation) learning encounters, often intertwined with other aspects of academic work (e.g. marking assignments). These learning encounters occur in a range of spaces (e.g. office corridor, online discussion forum) at any time and may involve an array of objects (e.g. pencil, mobile phone). The purpose of this research is not to seek to bring order to this 'messiness', but to recognise that the professional learning of UK HE academics is complex and to provide a vocabulary that enables us to articulate this complexity. Using a qualitative-led mixed methods approach (Creswell, 2013a; 2013b; Bryman, 2016), the data collection will be made up of three strands forming a rich data set of policies, discourses, texts, spaces, objects, technologies, ideas and encounters. This data set will be used to inform the case study of a single research site and will entail:

- Strand 1 - online questionnaire for academic staff.

- Strand 2 - individual, semi-structured interviews with academic staff.

- Strand 3 - individual, photovoice slideshow and commentary collated by academic staff.

4.2. Axiology

Axiology is concerned with the researcher's values in the research process (Tomar, 2014; Biedenbach & Jacobsson, 2016). Values influence the research process and how the results

will be regarded. A positivist axiology locates research as being free of value, and the researcher is independent from the data and maintains an objective stance (Biddle & Schafft, 2014; Lincoln *et al.*, 2017). In contrast, an interpretivist axiology takes the position that research is value bound, and the researcher is part of what is being researched. Thus, the researcher cannot be separated and so will be subjective (Biddle & Schafft, 2014; Lincoln *et al.*, 2017). The values held by the researcher can have an impact on the research being conducted, even though this may not try to influence the outcomes of the research. Hence, it is important to declare that my values may influence the process of this study and may also have an effect on the outcomes. This section will address my positionality; issues relating to 'insider' research, and highlight ethical considerations.

4.2.1. Positionality

I come to this research as someone who has been involved in HE as a student, a researcher and as a member of professional services staff working within an academic professional development (APD) department at a UK HEI. My position as a learning technologist and academic professional developer has afforded me comparatively easy access to academic staff and the wider academic community within the university.

However, it raises issues of a "dual-role conflict" (Hammack, 1997, p. 249), where my role as a learning technologist has potential to conflict with my role as researcher. The dual-role conflict also questions the decision to research my contribution to academic professional development, which from a positivistic perspective would be viewed as introducing bias. Nevertheless, as is consistent with the 'insider' research approach taken in this study, it recognises that my dual-role conflict offers insights that would have not been possible by a researcher who was not working in an HEI (Miles *et al.*, 2014).

4.2.2. 'Insider' Research

Much has been written about 'insider' research (or "endogenous research") as a particular research tradition (Mercer, 2007; Taylor, 2011; Trowler, 2011; 2014; Rogers, 2012). It is concerned with conducting research around one's own local or indigenous community, such as one's profession, workplace, society or culture, which brings a "contextual understanding" that outsiders lack (Innes, 2009). The researcher may encounter challenges because of the "over-familiarity" with the community setting, research context and participants (DeLyser, 2001; Kim, 2012). However, it could be argued that an insider researcher who is a part of a

community can be considered as an outsider if they do not share that community's particular set of characteristics (Le Gallais, 2003; Floyd & Arthur, 2012; Kim, 2012). In my case, I am not an academic, as my professional context is very different to the participants in the study. Nevertheless, there are tangible benefits for HEIs involved in a study as research findings may impact upon institutional policies and practices (LSE Public Policy Group, 2011).

When conducting 'insider' research it may not be possible to protect and preserve institutional and personal anonymity (Trowler, 2011; 2014). The usual approaches in providing anonymity may compromise data analysis and transparency. It may have "limited value" given that my identity as the researcher, and therefore my place of work, are already known in this thesis (Floyd & Arthur, 2012). It has been argued that researchers should "work on the assumption that the site of their study cannot be anonymous" (*ibid.*, p. 177). Instead, every effort was made to ensure that the participants remain anonymous. This was achieved by not providing pen-portraits that demonstrated the demographic of the sample as these could make it relatively easy to identify colleagues. Therefore, when quoting, I refrained from attributing specific contributions using a coding system (e.g. Colleague 1). Instead, participants' quotes were framed around a particular theme.

4.2.3. Ethical Considerations

The notion of risk, as applied to research, tends to be defined as the "potential physical or psychological harm, discomfort, stress or reputational risk to human participants that a research project might generate" (ESRC, 2015, p. 27). I am appreciative of the principles, standards and values associated with research ethics. Within this research project, these values are circumscribed by professional research associations such as the *British Educational Research Association* (BERA, 2011), *British Sociological Association* (BSA, 2002), and the *Economic and Social Research Council* (ESRC, 2015). Furthermore, my professional values are aligned to professional codes of practice (BCS, 2011; HEA, 2013; SEDA, 2015; ALT, 2016) that I subscribe to (i.e. professionalism, respect, fairness, and a tireless concern for knowledge and self-improvement).

In receiving institutional ethical approval (see *Appendix I*), I have attempted to cultivate a "responsible research relationship" (Miller *et al.*, 2012), which considers the ethical issues, sensitivities, and potential power imbalances that can be intrinsic in research. All voluntary participants were given information about the study (see *Appendix III*), the nature of their participation, and their freedom to withdraw at any time or not to participate (see *Appendix*

IV). Participants were not asked to put their name to any document. They were assured that their answers remain confidential and reported anonymously. Complying with current data protection legislature (Data Protection Act, 1998) and institutional research protocols (CCCU, 2007; 2013; 2015a; 2015b; 2016), strategies were implemented for the secure and confidential recording and storing of all data obtained. These include: password protection, encryption, kept in a locked office and data being destroyed after five years following completion of the study. Audio recordings were used for the purposes of transcription and were deleted once transcription and analysis was completed. The study uses photographs with participants acting as co-researchers in the production of their individual photovoice slideshow (see *Appendix V*). Each participant was briefed to ensure they adhered to the strict ethical obligations and practices of the study.

4.3. Methodology

4.3.1. Mixed Methods Approach

This study adopts a mixed methods approach, enabling me to collect and analyse data drawn from both qualitative and quantitative sources within the same research project (Driscoll *et al.*, 2007; Johnson *et al.*, 2007; Given, 2008; Robson & McCartan, 2016). This allows me to offer explanations on qualitative results with complementary quantitative data (Migiro & Magangi, 2011). As a sociomaterial account, I can draw upon data that is construed as being "uncodable, excessive, out-of-control, [and] out-of-category" (St. Pierre, 1997, p. 179). This type of data, known as "transgressive data" (*ibid.*), can include affective information (e.g. emotions, feelings, senses) drawn from the research participants in their various encounters and interactions with spaces (Thrift, 1996; 2005; 2008) and objects (Latour, 2005; Law, 2008; Miller, 2010).

Moreover, the value of sociomaterial approaches is that these "offer to recognise and trace the multifarious struggles, negotiations and accommodations" whose properties constitute those 'things' in professional learning (Fenwick, 2014, para. 7). These 'things' can include students, colleagues, technologies and spaces, texts, policies, curriculum design and so forth. Furthermore, sociomaterial perspectives offer researchers important theoretical tools for "understanding the power relations and politics that constitute" professional learning (*ibid.*). These theoretical tools offer ways in which to interfere, interrupt or intensify powerful networks that have been assembled as knowledge (*ibid.*).

The mixed methods approach can be configured to one of six different design strategies (Creswell & Plano Clark, 2017). The most well-known of these is the ' triangulation design' (or 'convergent parallel design'), allowing the researcher to converge and corroborate findings from more than one source. However, a transformative design (see *Figure 1* below) was used in this mixed methods study. A transformative design elevates the voices of the participants to develop a call for action using data sources that can challenge injustices and provide evidence that is acceptable to stakeholders (Creswell, 2013b; Shannon-Baker, 2016; Creswell & Plano Clark, 2017). The transformative design requires the researcher to have considerable knowledge of the community being researched, its history, and have a strong relationship with that community (Shannon-Baker, 2016). In this sense, it is very complementary towards an 'insider' research approach. Furthermore, it is a type of design where quantitative and qualitative data are collected, analysed separately and then merged.
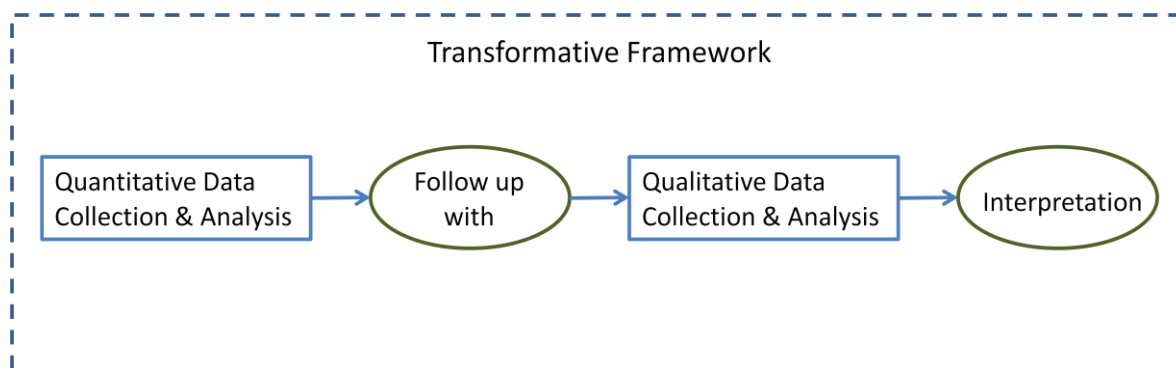
Figure 1: Transformative Mixed Methods Design

A mixed methods approach enables the researcher to develop a rounded perspective, especially where the focus of research (i.e. professional learning) is complex and entangled (Given, 2008; De Lisle, 2011; Malina *et al.*, 2011; Shannon-Baker, 2016). This creates a research outcome that draws upon the combined strengths of qualitative and quantitative methods, helping to inform theory and practice (Lieber, 2009; Malina *et al.*, 2011). In amalgamating the research methods, it allows the researcher to respond to confirmatory and exploratory questions at once, and consequently corroborate and construct theory within the same study (Tashakkori & Teddlie, 2010; Migiro & Magangi, 2011).

However, critics argue that combining methods rooted in different epistemologies is wholly inappropriate and untenable. They claim that certain paradigms and methods cannot "fit" together legitimately (Smith, 1983; Newman & Hitchcock, 2011) as this could lead towards conflicting and ambiguous results (Blaikie, 1991; Ahmed & Sil, 2012). Even though the incompatibility argument has been rejected by many (Johnson & Onwuegbuzie, 2004;

Tashakkori & Teddlie, 2010; Creswell & Plano Clark, 2017), methodological divisions still exist. There are concerns too, that researchers using different methods tend to 'gloss over', or worse, fail to provide a sufficient account of where tensions or contradictions have arisen between the findings, thus negating a possible "multi-dimensional view of reality" (Meetoo & Temple, 2003).

Nevertheless, a mixed method approach has a number of advantages for the researcher. First, choosing methods intrinsically different, but complementary, may offer a better estimate to 'the' answer and enhance interpretability of the findings (Migiro & Magangi, 2011; Creswell & Plano Clark, 2017). Second, the researcher is able to answer a broader range of research questions as the researcher is not confined to a single method or approach (*ibid*.). Third, a mixed method approach can add insight and understanding that might otherwise be missed when using a single method approach (*ibid*.). Fourth, this style of research encourages the use of multiple worldviews (i.e. beliefs and values), rather than the typical association of certain worldviews garnered from a single method (Creswell & Plano Clark, 2017). Fifth, it provides a practical solution for researchers in the sense that, a) the researcher is able to use all methods possible to address a research problem; and b) individuals tend to solve problems using a mixture of words and numbers, which facilitates inductive and deductive thinking leading towards abductive thinking (*ibid*.). Finally, a mixed method approach provides an opportunity for researchers to produce multiple written publications from a single study. These publications may include articles that highlight the quantitative, qualitative and mixed method strands drawn from the single study (*ibid*.).

4.3.2. The Rationale for the Mixed Methods Approach

In this section, I show how each method in this study was necessary in order to respond to the research questions and achieve the following outcomes:

1. Identify and survey academics on whether their professional learning at the research site was being enabled or encumbered (Strand 1).

2. Identify and recruit academics in participating in the substantive phase of the research project (referred to henceforth as 'the participants') (Strand 1).

3. Establish the 'personal' position of the participants into the processes and practices of their professional learning (Strand 2).

4. Establish the 'sociomaterial' position of the participants by capturing their individual professional learning perspectives through a visual medium (Strand 3).

Drawing upon these four outcomes, I was then able to present the findings and develop a sociomaterial account of professional learning amongst the research participants at a UK university.

The questionnaire (Strand 1) provided academic staff with an opportunity to comment on institutional strategies and policies and reflect upon their own professional learning experiences. Moreover, it allowed for a cohort of research participants to be identified as being willing to participate in the substantive phase of the study (i.e. Strands 2 and 3). The results from the questionnaire suggested some initial themes, which necessitated further exploration and investigation. Interviewing the cohort of research participants was required to gain an understanding of these emergent themes.

The semi-structured interview (Strand 2) allowed for the further exploration and investigation into the processes and practices of the participants' professional learning. The purpose of the interview was three-fold:

1) to find out *how*, *when*, *where* and *why* academics engage in professional learning;
2) to know *how*, *when*, *where* and *why* academic professional learning is enabled or encumbered; and
3) to understand *how*, *when* and *why* academics prioritise one form of knowledge (e.g. subject discipline) over another (e.g. institutional policy).

The interviews provided a rich, thick description, but a visual approach can illuminate upon those social and material dimensions of professional learning. This invited the participants to capture their individual professional learning perspectives through a visual medium.

The photovoice exercise (Strand 3) provided the participants with an opportunity to take photographs of those things they perceived as either enabling or encumbering their professional learning. The participants were able to photograph those areas and artefacts that are ordinarily out-of-bounds to me (e.g. their home). Critically, this exercise situated the participants as co-researchers within the study, empowering them to create, select *and* organise those photographs for inclusion within their slideshow. Throughout the slideshow, there are references to the participant's responses in the questionnaire and interview stages to help 'close the loop'.

4.3.3. The Population

The population under consideration are academic staff working at a multi-site university located in the South-East of England. The university has been awarded *Investors in People* (IIP)[6] three times over the last twelve years. At the time of the study (January to July 2016), the university employed approximately 3,000 staff (a mix of full-time, part-time, and sessional) with around 1,600 being academic staff. The *Questionnaire* and *Semi-Structured Interviews* sections provide a more detailed account on *how* and *why* the sample was selected.

4.4. Data Collection Methods

4.4.1. Questionnaire

4.4.1.1. Overview

The online questionnaire serves three purposes. Firstly, to foreground the extent to which the professional learning of HE academics at the university is enabled or encumbered. Secondly, the data captured was used to assist in the development of the semi-structured interviews and the photovoice slideshow. Finally, interview / photovoice participants were drawn up from a list of respondents who expressed an interest in taking part in the follow-up stages (Strands 2 and 3).

The questionnaire is a widely used and useful instrument for collecting survey information. It offers the researcher a structured way of asking questions and a simple means of collecting data. The questionnaire can be administered (via paper or electronically) with or without the researcher being present. It can be completed anonymously by the respondent at a place and time of their choosing. However, such an enterprise can often be time-consuming as researchers are required to make repeated reminders to respondents to ensure a satisfactory response rate (Bryman, 2016; Robson & McCartan, 2016). Questionnaires that are self-administered, thereby requiring little or no researcher involvement, are said to be less prone to information bias (e.g. *social desirability bias*) and interviewer effects (Edwards, 2010; Cohen *et al.*, 2017). They offer transparency or accountability, enabling interested parties to assess the veracity of the implementation and design (Hakim, 2000; Bryman, 2016).

However, poorly constructed questions can undermine the questionnaire's *internal validity* to the extent that researchers may not obtain valid information from respondents (Robson &

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[6] The IIP award is an industry standard for people management. See: https://www.investorsinpeople.com/

McCartan, 2016). Insensitive or inappropriate questions can represent an intrusion to a respondent's privacy, which raises ethical issues (Norton, 2009; Artino *et al.*, 2011). By piloting questionnaires first, researchers can fine-tune questions to ensure clarity of understanding and precision in responses (Edwards, 2010; Cohen *et al.*, 2017). Furthermore, researchers can develop strategies for handling missing data, such as excluding incomplete data (i.e. *case deletion method*), or replacing missing data with their imputed equivalent (i.e. *imputation-based method*) (Cheema, 2014).

4.4.1.2. Implementation

The questionnaire was piloted with academic staff across four faculties (*Arts & Humanities*; *Education*; *Health & Wellbeing*; *Social & Applied Sciences*). They were asked to consider the questions and comment upon the style and layout. Based upon the collective feedback taken from the pilot, a revised version of the questionnaire (see *Appendix VI*) was constructed and delivered using *Qualtrics* (2017). It was open for two calendar weeks (11th to 24th January 2016). The questions were organised into two sections:

1. *Professional learning* (e.g. how many hours are spent on professional learning, what barriers prevent you from engaging with professional learning)
2. *Demographic information* (e.g. age, gender)

A purposive sample of five hundred and thirty-five (535) academic staff within the university was drawn up using an expanded version of the 'Academic Role Profiles' (JNCHES, 2005) (see *Appendix XI*). The respondents were recruited by drawing up names of academic staff who occupied one or more of the following criteria:

- a participant on the *University Certificate of Academic Practice* (UCAP) programme or its precursor ;
- a participant on the *Postgraduate Certificate of Academic Practice* (PGCAP) programme or its precursor;
- a participant in the *Research Excellence Framework* (REF) 2014 exercise;
- a recipient of the *University Teaching Excellence Awards* (UTEA);
- a recipient of the Higher Education Academy's *National Teaching Fellow Scheme* (NTFS);
- in the role of Head of School or Section;
- in the role of Programme Director;
- in a Professional Services role occupying around 50% or more of their time;

- in a role that includes some professional / industrial practice or expertise.

In addition, demographic representations were applied, reflecting the heterogeneous character of academic staff:

- gender;
- age;
- faculty affiliation (e.g. Education);
- campus location (e.g. Canterbury).

In January 2016, a personalised e-mail was sent to the 535 academic staff members with an invitation to participate in an online questionnaire on their professional learning experiences.

The questionnaire returned a sample of one hundred and eighty-two (*n*: 182) responses from academic staff from across all four faculties, representing a completion rate of 34%. From the 182 respondents, forty-seven (47) individuals explicitly expressed an interest in participating in the interview and photovoice stages of the research project.

4.4.1.3. Questionnaire Limitations

Upon reflection, while there were questions that related to conversations with colleagues, students and peers and guidance from a mentor / supervisor, there could have been some more questions that related explicitly to informal learning. Although respondents were asked to identify their faculty affiliation, another question concerning affiliation to a discipline could have been asked, thus it could have been used to identify any possible disciplinary differences with regards to the professional learning of academics (Becher & Trowler, 2001; Malcolm & Zukas, 2009; Trowler *et al*., 2012; Gornall *et al*., 2013; Zukas & Malcolm, 2017).

4.4.1.4. Selecting the Academic Participants

A number of variables[7] within the questionnaire dataset required recoding. This was to ensure data consistency and for the data to be 'handled' correctly and appropriately by the statistical analysis software: *IBM® SPSS® Statistics Faculty Pack 23 for Windows* (SPSS, 2017). The use of Multinomial Logistic Regression analysis was particularly helpful in determining the strength of influence an academic's age, gender, role, highest qualification and teaching

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[7] The questionnaire variables that needed to be recoded were 'age', 'gender', 'disability', 'highest qualification', 'faculty', 'employment status', 'employment contract' and the 'number of years working in HE'. Each of these variables included a 'Prefer not to say' option. This option needed to be recoded to ensure consistency so that SPSS could 'handle' the data correctly.

experience has upon the variety of professional learning activities, where these activities take place and how often they are able to set aside time for their professional learning.

In conducting a Multinomial Logistic Regression analysis within *SPSS®*, a group of individuals who occupied the role of a 'Module Leader' were identified as being of special interest. This particular role featured in a number of analyses relating to barriers, engagement, activities and preferred locations to and for professional learning. Drawing upon the 47 individuals who expressed an interest in taking part in the latter stages of the research project, this sample was refined to include those academic staff members:

- who occupy a Module Leader role – identified as being of special interest (*Criteria 1*);
- who have a permanent contract – because they would be more available and accessible than those on sessional or fixed-term contracts (*Criteria 2*);
- were based at one of the university's four main campuses – because of ease of access and opportunity for the researcher (*Criteria 3*); and
- who have between 1 to 20 years of experience in teaching in HE – as this would offer a range of experiences, capabilities and perspectives (*Criteria 4*).

The above criteria were selected to elicit a broad spread of academic staff. The questionnaire data pertaining to the 47 respondents was transferred into *Microsoft® Excel* from *SPSS®*. Using the filtering tool within *Microsoft® Excel*, each of the above criteria were applied one at a time. First, *Criteria 1* was applied, reducing the 47 respondents to 16. Second, *Criteria 2* reduced the 16 respondent to 15. Third, *Criteria 3* saw a reduction of 15 respondents to 14. Finally, applying *Criteria 4* reduced the 14 respondents to produce a sample of twelve (12) research participants. Incidentally, all of the participants occupied additional roles such as 'Programme Director', 'Year Group Leader', or chairing various groups or committees. This suggests that the participants' time for professional learning activities could be constrained and/or restricted.

4.4.1.5. Participant Demographic

The demographic of the participants is representative of the academic staff population within the research site (see *Table 1* below). There are, however, some disparities between the participant sample and the research site population. Specifically, the gender difference of the population at the research site has a ratio of 3:2 in favour of female academic staff. A possible explanation for this may be found in the gender difference of those 47 respondents, who occupied a module leader role, which had a ratio of 3:5 in favour of male academic staff.

Table 2: Demographic of the Participants

		Participants	% (*n*: 12)
Gender	**Female**	4	*33*
	Male	8	*67*
Age Group	**21-30**	0	*0*
	31-40	1	*8*
	41-50	8	*67*
	51-60	3	*25*
	60+	0	*0*
Employment Contract	**Part -Time**	2	*17*
	Full-Time	10	*83*
	Sessional	0	*0*
Faculty Affiliation	**Arts & Humanities**	1	*8*
	Education	2	*17*
	Health & Wellbeing	4	*33*
	Social & Applied Sciences	5	*42*

It should also be noted that the response rate from the Faculty of Social and Applied Sciences is greater than any other faculty. I am the learning technologist supporting this particular faculty and, thus, relatively well known to academic staff there. However, it is also plausible that members of this faculty had more understanding of this research and its wider value to the institution. These reasons may explain why this faculty responded well to my invitation to take part in the questionnaire.

4.4.2. Semi-Structured Interviews

4.4.2.1. Overview

The semi-structured interviews with academic staff delve deeper into the processes and practices of their professional learning. The purpose of the interviews is three-fold:

1. to find out *how*, *when*, *where* and *why* academics engage in professional learning;
2. to know *how*, *when*, *where* and *why* academic professional learning is enabled or encumbered; and
3. to understand *how*, *when* and *why* academics prioritise one form of knowledge (e.g. subject discipline) over another (e.g. institutional policy).

The interview is a widely used and flexible instrument for data collection enabling multi-sensory channels to be used (e.g. verbal, non-verbal, and listening). The order in which interviews are conducted can be controlled whilst providing opportunities for serendipitous spontaneity. Researchers are able to probe more deeply where responses are incomplete or issues that are deep, entangled and complex (Norton, 2009; Turner, 2010; Rowley, 2012). It is a method that will cause the least disruption to the participants' working day whilst still providing rich, in-depth data (King, 2004; Cohen *et al.*, 2017).

The *semi-structured interview* is one of three basic types; the others being *structured* and *unstructured*. The structured approach consists of predetermined questions with fixed wording, usually in a specific order, whereby the researcher is able to clarify responses. The unstructured approach is more conversational and based around a limited number of themes or topics. The semi-structured approach, conversely, can be flexible and consists of predetermined questions, but the order can be modified based on what researchers consider to be appropriate at the time. At the researcher's discretion, some questions can be omitted or additional ones included (Norton, 2009; Rowley, 2012; Bryman, 2016).

However, an interview is *not* the same as an ordinary, everyday conversation (Dyer, 1995; Given, 2008). It is constructed around a specific purpose and tends to be question-driven. The questions are usually asked by the interviewer and not the interviewee with the "asymmetry of power" resting upon the interviewer (Qu & Dumay, 2011). There is a misconception that conducting interviews is a simple endeavour. This is based upon the questionable assumption that interviewees are "competent" and "moral truth teller[s]" who act in the "service of science", providing information needed to "reveal the 'interiors'" of the interviewee or organisational practices (Alvesson, 2011).

My approach to addressing these challenges was to ensure that I planned my interviews carefully and allowed sufficient time for preparation (Qu & Dumay, 2011). My interview schedule (see *Appendix VII*) was influenced by my two research questions, the literature relating to the professional learning of academics in HE, and the questions raised from the results of the online questionnaire for academic staff. The interview schedule contained a number of scheduled probes for each question. I factored in some time for asking some unscheduled probes should I want to draw out more information from a particular response made by the participant that was either interesting or required further clarification.

4.4.2.2. Transcription

Transcription is the 'cornerstone' in any qualitative analysis involving interview data (*albeit* audio or video) (Lapadat, 2000; Oliver *et al.,* 2005; Widodo, 2014). It can be quite an onerous task, but to omit it in favour of coding or field notes can result in loss of clarity and completeness (Lapadat & Lindsay, 1999; Bryman, 2016; Cohen *et al.,* 2017). It is also a failing on the researcher's part not to try and "preserve [...] data in a more permanent, retrievable, examinable, and flexible manner" (Lapadat & Lindsay, 1999, p. 80). Hence, I recognise that transcription is an integral component in the qualitative analysis of the semi-structured interviews *and* 'photovoice' slideshow.

I wanted the transcription to be 'natural' (i.e. every utterance is transcribed) because I was keen for those interviews to be situated in the 'real world' (or at least a semblance of it) and for my social presence as interviewer to be documented. I employed a professional transcriber to produce the 'first' draft of the transcription. They could produce the transcription more expediently than me. However, I worked upon successive reiterations of the transcripts, by moving back-and-forth between the recordings and the transcripts themselves, until I had generated the definitive copy. In doing so, this enabled me to assume responsibility for the interpretation of the conversation between the interviewee and myself.

A transcriber is not a 'neutral agent' who is able to put aside their own prejudices and biases. They could make "interpretive decisions" (Lapadat, 2000; Bryman, 2016) and hear the interview "through [their] own cultural-linguistic filters" (Oliver *et al.,* 2005, p. 1282). This may result in 'tidying up' sentence structures, excluding or mishearing material (Poland, 1995; Lapadat, 2000; Bryman, 2016). To ensure rigour into the transcription process, I introduced a couple of strategies:

1) a transcription notation crib sheet was created (see *Appendix X*); and
2) working collaboratively with both the transcriber and the interviewee to ensure that the transcription was a fair and accurate account of the original interview by sharing drafts of the interview transcriptions (Lapadat, 2000; Bryman, 2016; Cohen *et al.,* 2017).

4.4.2.3. Implementation

Influenced by the research questions, the literature and the results from the online questionnaire, an interview schedule was developed (see *Appendix VII*). The interviews took place between March and May 2016 in a secure and private office.

4.4.2.4. Developing the Anonymised Participant Profiles

In analysing the participant interviews, I began with using *NVivo*, but I found the process was too reductive and it did not lend itself well to sociomaterial sensibilities, particularly in following the actors involved. Instead, the data was presented through a form of emplotment, which would enable me to trace the actors involved. This approach had been adopted in a project by Malcolm and Zukas (2014). The first stage of the analysis involved writing up an anonymised participant profile (see *Appendix XII*) of the data generated for each participant. This profile, or case narrative, includes data drawn from the questionnaire, interview and photovoice activities (see *Appendix XIII* for worked examples).

Each profile contained demographic, employment, HE experience information, along with the tools and technologies used, the spaces and places occupied, the various people and discourses that the participants engaged with, and some additional commentary that developed a narrative of the complex sociomaterial practice of professional learning. The profile also contains information regarding the participant's disciplinary affiliation, which covered such fields as allied health, business, humanities, nursing, applied science, social science and teacher education. In creating these profiles, the analysis would allow me to identify those 'actors' that have a significant influence over the professional learning of the participants. In identifying the 'actors', I can begin to trace their connections and interactions and how these have come to enable and/or encumber particular professional learning activities and practices.

4.4.3. Photovoice Slideshow

4.4.3.1. Overview

The third and final strand used the same participants as the interview strand. They were asked to take photographs of spaces, places, tools, and objects that they perceive as either enhancing or encumbering their professional learning. The participants collated and verbally presented these photographs in a form of an individual slideshow. Participants could use

Microsoft PowerPoint (or similar) to display their photographs. Throughout the slideshow, references were made to the participant's responses in the questionnaire and interview stages to help 'close the loop'. Furthermore, this strand critically situates the participants as a community of professional learners within a social, political, economic and cultural context who are co-researchers within the inquiry (Spry, 2001; Mackenzie *et al.*, 2012).

The individual slideshow uses the *photovoice* participatory action research method (Wang & Burris, 1994; 1997; Wang *et al.*, 1996; Wang, 1999) and is unique to sociomaterial studies and within the field of education (Ciolan & Manasia, 2017). Photovoice is one of several qualitative methods utilised in Community-Based Participatory Research (CBPR) (Nykiforuk *et al.*, 2011). It was originally conceived as:

> ...a process by which people can identify, represent, and enhance their community through a specific photographic technique. It entrusts cameras to the hands of people to enable them to act as recorders, and potential catalysts for change, in their own communities. It uses the immediacy of the visual image to furnish evidence and to promote an effective, participatory means of sharing expertise and knowledge (Wang & Burris, 1997, p. 369)

Three major theoretical frameworks underpin and support the photovoice method. Firstly, the method uses Paulo Freire's (1970) theory of *critical consciousness*. This concerns empowering individuals to critically engage in dialogue and thinking about their community and circumstances. Secondly, *feminist theory* is applied to give a 'voice' to those marginalised and vulnerable populations and takes into consideration male bias that has influenced participatory research. Lastly, the notion of *documentary photography* is used as an attempt to provide visual expression to social conscience (Wang & Burris, 1997; Ciolan & Manasia, 2017). The photovoice method empowers the participants to create, select *and* organise those images that they wish to use in their slideshow. However, the researcher is still in control of the study, in terms of direction and the themes to be explored. By increasing the involvement of the participant in the research process, the validity of the data also increases (Julien *et al.*, 2013; Ciolan & Manasia, 2017).

Whilst the photovoice method has considerable advantages, a number of limitations do exist. For example, participants may take photographs without a subject's permission or in areas that are prohibited. As a researcher, I needed to ensure participants are made aware of and compliant with strict and robust ethical practices, by providing the necessary tools and resources to mitigate against such challenges (Julien *et al.*, 2013; Woodgate *et al.*, 2017). Failure to do so poses a significant risk to the usability of the resultant data and study as a

whole (*ibid.*). Photovoice projects can be expensive in terms of time (i.e. participant's commitment) and resources (i.e. photographic equipment). Nonetheless, technology has progressed sufficiently and cheaply in alleviating this as an issue. Given the visual nature of this method, this is a potential barrier to participants with visual impairments. Researchers will need to consider whether to exclude individuals who could make an invaluable contribution to the study, simply because of their inability to take photographs or critique visual images (*ibid.*). Despite these limitations, the photovoice method is gifted with many strengths. There is an opportunity to create new knowledge around the conceptualisation of professional learning amongst academic staff.

4.4.3.2. Implementation

In preparation for these slideshows, each participant took part in a 15 to 30 minute briefing session with me. Firstly, this was to ensure that participants were clear about what they were supposed to be photographing. It was reiterated that participants needed to photograph spaces, places and objects that either helped or hindered their professional learning engagement. Secondly, to ensure they understood the highly sensitive and ethical nature of their own research within the wider study. Each participant received a briefing guide (see *Appendix VIII*) to take away with them.

Each participant was given a USB memory stick to store their photographs. They could use the memory stick to store their slideshow, which might be prepared using *Microsoft PowerPoint* (or similar). The participants had control over which photographs they could use in the slideshow and the order in which these could be displayed. The slideshow informed the participants' own personal narrative or commentary concerning the opportunities and challenges around their professional learning. The slideshow presentations took place between May and July 2016 between the participant and me in a secure and private office.

4.4.3.3. Tracing the Spaces, Objects and People

Once the data had been typed up into the anonymised profiles, the second stage of analysis involved drawing information from both the interviews and the photovoice activities to identify a set of actors, such as 'Study Area', 'Pens / Pencils', 'Colleague (Academic)', that enabled and/or encumbered professional learning. Each actor was placed in one of three sociomaterial groups: 'space/place', 'material objects' and 'people'. Working through each of the twelve profiles, a single point was allocated to each actor that was mentioned. That point would be recorded in either the 'Enable' or 'Encumber' column. Some actors, such as 'Email',

were mentioned as having enabled and encumbered professional learning. In these instances, a point would be allocated in both the 'Enable' and 'Encumber' columns (see *Appendix XIV* for detailed account).

Those actors that scored highly (seven or more) were identified by most of the participants as having a significant effect upon their ability to engage with their professional learning activities. It would be these actors that I would follow, looking for commonalities, differences, and surprises that might emerge from the analysis (see *Appendix XV* for detailed account).

4.5. Original Methodological Contribution: Photovoice

4.5.1. Introduction

The use of the photovoice method is an original contribution to methodological knowledge, offering a unique and a powerful addition to the sociomaterial 'toolbox', and within the field of education itself, in which photovoice is underutilised (Ciolan & Manasia, 2017). The photovoice method has three broad aims:

1. to encourage participants to record and reflect upon their concerns and experiences;
2. to enable participants to find their voice and a common cause with others in the same situation, through sharing and group dialogue of their photographs;
3. to reach out and educate powerful others (e.g. policy makers) in better understanding the realities of the participants' situation (Wang & Redwood-Jones, 2001).

As such, the photovoice method is positioned as a participatory action research enterprise. Typically, the method involves a group of individuals, who share a common interest, meeting together and deciding on a particular theme that they want to explore and raise awareness about. The participants will take photographs around this theme, these are shared and discussed within the group. The group decides which of the photographs will be used to form a photovoice exhibition. Captions are produced in helping to develop a narrative for the photographs. Influential people are invited to see the photovoice exhibition and who are in a position to bring about change based upon the issues highlighted in the exhibition (Bryce, 2012). A tool like photovoice can provide "a thoughtful and 'material' elaboration of the 'social life of things'" (Geismar & Horst, 2004, p. 8).

4.5.2. Modifying the Photovoice Method

I modified the photovoice method so that it became an individualised experience rather than a community-based one. There are some examples where photovoice has been adopted as an individual experience (see: Castleden *et al.*, 2008; Julien *et al.*, 2013; Hermanns *et al.*, 2015). The primary reason for adopting an individualised approach was to ensure that the anonymity of the participants was preserved, a consequence of which meant that focus group meetings would be inappropriate as this would have undermined that anonymity. The method was flexible enough to allow for individual action, not just community action (Wang, 1999). This is particularly pertinent as the purpose of the photovoice activity was to allow the participants, within their institutional, faculty and departmental contexts, to explore through their photographs and associated accounts to events, encounters, relationships and practices that affected their engagement with professional learning, rather than assessing the needs of the academic learning community. As such, it was not appropriate to select and recruit a target audience of policy makers or leaders, even though they had the political means to put the recommendations of the participants into effect. The participants needed the opportunity to reflect and work through those factors that affected their professional learning. In a community photovoice project conducted by Royce, Parra-Medina and Messias (2006), they note that it is not always feasible to follow all of the recommended steps, such as not involving policy makers into the project.

4.5.3. Challenges with the Photovoice Method

The photovoice exercise presented some challenges for both me and the participants. Specifically, those challenges related to:

1. *photographing people* – In the briefing sessions, it was made clear to the participants that they were not to photograph people for ethical reasons. For some participants, certain people were important to their professional learning context. My advice was to photograph something that relates to the context in which that person(s) was important to the participant;

2. *missed photograph opportunities* – Some of the participants spoke of missing particular photos. Some reported that they did not have their camera with them when an opportunity occurred. Some remembered on the day of their photovoice slideshow

that they had forgotten to include a photograph of an object or space that was important to their professional learning; and

3. *time commitment* – After the briefing session, the participants were given three weeks to complete the task. In reality, this did not happen. The turnaround time to complete the task ranged from four to fourteen weeks. For many of the participants, the months of May to June were taken up with the final examination period, marking scripts, attending examination boards, and meeting with external examiners. Some of the participants are external examiners themselves, so would have been travelling to other universities or reviewing examples of student work remotely. This was the primary reason for the delay in completing the task. However, feedback from the participants regarding the three week turnaround suggested that they were more than happy with it:

> The three weeks was realistic. Although looking back, I spent too much
> time worrying about whether the ideas and thoughts that came to mind
> were right or not.

Nevertheless, where research is being conducted involving academic participants, timings are critical. It requires a complete familiarisation of the academic year, identifying potential windows of opportunities and pressure points.

The issues reported in the photovoice literature relating to supplying a camera and training the participant to take pictures did not materialise. The participants owned smartphones with built-in cameras. They were very comfortable in using their own devices for this project, as these devices were familiar and personal to them.

4.5.4. Developing a Non-Representational Photographic Style

From a non-representational perspective, photography presents researchers with a challenge. Photographs provide a means to capture, present, critique and appreciate the world-at-large and the human condition. Photographs can make us laugh or cry, shock or enrage us, change the way we think and preoccupy our thoughts and dreams. Nevertheless, from a 'show and tell' perspective, the photograph can come across as being representational as it appropriates the very thing that is being photographed. But, non-representational thinking is concerned with:

...how life takes shape and gains expression in shared experiences, everyday routines, fleeting encounters, embodied movements, precognitive triggers, affective intensities, enduring urges, unexceptional interactions and sensuous dispositions. (Lorimer, 2005, p. 84)

Non-Representational Theory has engaged with both cultural artefacts (Latham and McCormack, 2009) and the agency of the digital (Kitchin & Dodge, 2011; Thrift, 2014), allowing me to begin to position digital photographs as being non-representational artefacts. In providing me with a nuanced understanding of what images can do, Roberts (2012) refashions research photographs with having a 'haunted' quality. By 'haunted', Roberts posits that photographs have an ambivalent in-between property, where images haunt between what is present and what is absent, between the real and virtual, and between the material and immaterial. As such, photographs can be conceptualised as being both representational and non-representational (*ibid*.). According to Roberts (2012), these 'haunted' photographs manifest themselves in different ways: where past reminders, such as social injustices, erupt and intrude upon the present; and where marginalised voices resist and disrupt the dominant discourses and modes of thought - enabling those marginalised voices and narratives to be heard and come into being.

To think about digital photographs in a way that is non-representational, requires a different way of seeing and the subsequent affect it has upon us (Berger, 1972). This can be done in terms of "duration, narration and movement" by bringing the image's affective qualities to the fore (Bleyen, 2012, p. xii). According to Boyd (2017, p. 87), a non-representational style of photography can be approached in three ways to achieve this "duration, narration and movement" effect:

1. Capturing fast movements with a moderate exposure. It leaves a trace, emphasising the temporal (*duration*) quality of the photograph.

2. Using photomontage (*narration*). By breaking up images and using odd placements of fragmented photographs, these can be used to disrupt our perception of the normal world.

3. The production of short segments of video using stop-frame animation (*movement*).

For the purposes of the study, only the first two approaches were attempted by the participants, which I will discuss shortly. However, the animation element would have been

both technically challenging and time consuming for the participants to engage in within the allotted time of the research.

4.5.4.1. Technique #1: Temporality (Duration)

Photographs are time exposures that capture a distinct moment in time. Photographs can only provide an imaginary notion of movement. In setting a digital camera on to a continuous shooting mode (burst mode), it can take a series of pictures from anywhere between 2.5 to 5 frames (still images) per second. It results in a series of images that emphasises continuity of movement and exposing the temporality of the image (Plummer, 2012).

However, these photographs can appear to be static, especially as the participants wants to presents those things (e.g. objects, technologies, texts, spaces) that enable or encumber their professional learning. This can be done by presenting close-ups that objectifies the non-human, rather than the human. Here, the images of the non-human can be altered in some way (e.g. through light, moisture) and is isolated from the surrounding space and time. The participant can present the affective, expressive, and relational qualities of professional learning by intentionally avoiding close-ups of the human subject, and emphasising movement and relation (Boyd, 2017). An example of which can be found in the participant-produced photograph in *Photograph 1* below.

Photograph 1: Close up of bumblebee resting on tarmac pavement (participant-produced photograph)

In this photograph, the participant was taken by the juxtaposition of the agrarian (symbolised by the bumblebee) and urban environments (symbolised by the tarmac pavement) that are co-located on the institution's campus. Specifically, this image reminded them that within the

institution they were actively encouraged to think differently and to be stimulated creatively. In adopting this particular mindset, this participant found creative ways in which to engage with their professional learning and academic work.

4.5.4.2. Technique #2: Photomontage (Narration)

Photomontage involves a process of selecting, editing, contrasting, and "piecing together" different photographs to precipitate an affect that privileges "politics over aesthetics and of substance over style" (Doel & Clarke, 2007, p. 890). It suggests jolts to the content that invoke "eventfulness", affect, materiality, disclosure, intercession, passing and witnessing (*ibid*., p. 898). For Doel and Clarke (2007), montage is the "essential gesture of nonrepresentational styles of thought and action [that] makes the [whole] palpable and formlessness tangible" (p. 899).

Through this process of selecting, editing, contrasting, and "piecing together" different photographs, gives rise to two features of photomontage: stoppage and repetition. Through a series of stops and restarts (i.e. piecing different photographs together), the co-researcher is able to interrupt the photograph's meaning by creating resistance and introducing 'ands' and 'buts' to convey a multiplicity of becoming (*ibid*., p. 900). The viewer of this photomontage is driven into a becoming reality that has some "semblance of a world that is produced, rather than ready-made" (Boyd, 2017, p. 89). An example of a participant-produced photomontage can be found in *Photograph 2* below. The images of the participant's secret 'hidey hole' were haphazardly arranged in a stop-and-restart fashion depicting different aspects of the 'hidey hole'.

Photograph 2: The participant arranged these images into a photomontage of their secret 'hidey hole'

4.5.5. Photovoice Method: Empowering Participants

The creativity and a sense of agency gained from taking the photographs contributed towards a sense of empowerment and developing a voice concerning their professional learning. Studies adopting the photovoice method have reported participants feeling liberated and being on a journey of self-discovery (Schell *et al.*, 2009; Bryce, 2012; Simmonds *et al.*, 2015; Valiquette-Tessier *et al.*, 2015; Woodgate *et al.*, 2017). Schell and her students declared that photovoice offered them a "unique learning opportunity" (Schell *et al.*, 2009, p. 346). For Simmonds and colleagues, their participants mentioned "having fun" during the process (Simmonds *et al.*, 2015, p. 45). In Valiquette-Tessier and colleagues' project, their participants suggested that the photovoice process gave them an "increased optimism", the opportunity of "being unburdened", and developing a "sense of agency" (Valiquette-Tessier *et al.*, 2015). Woodgate and colleagues, on the other hand, suggested that the photovoice process was "therapeutic" and created a "safe space for expression" (Woodgate *et al.*, 2017). These accounts echo the responses and feedback that I received from my participants.

Three months after the last photovoice slideshow, I contacted the participant with a follow-up e-mail to register their thoughts about the photovoice process. I was heartened to discover that they had enjoyed the photovoice process, and some had found it quite cathartic. For one participant, the photovoice process gave them the space and time to reflect upon how they engaged with their professional learning:

> I found using the photovoice approach very interesting and thought provoking ... I had not really had the opportunity or head space before to think about how I manage my professional learning. Your process gave me permission to do this. So it was interesting to identify the different ways I engage with it and also how much I do in many non-formal activities.

For another participant, the process offered an opportunity for self-discovery and to "unburdened" themselves:

> The relaxed and informal approach ... helped me to "say it as it is" and enabled me to explore some topics that I hadn't previously had the opportunity to explore. In that respect it was a valuable learning experience!

For others, the photovoice process enabled them to recognise imbalances between work, learning and family life and seek to rebalance these areas:

> I now try to plan ahead in order to make more time for the family!

This imbalance was recognised by another participant:

> It gave me space to think about how I process things and how I divide my time between being an academic and being me, and where the lines get blurred.

Using photovoice to co-research those things that help or hinder their engagement with professional learning had provided the participants with valuable insights about their learning and the situations they found themselves in (e.g. lack of space and time, too many distractions, doing more with less). For me, I had the privilege of being both a co-learner in the participants' journey of self-discovery, and a confessor to those areas in their lives where the professional and personal domains had become blurred and entangled (e.g. guilt for not spending enough time for family, dissatisfaction with career).

4.6. Summary

The methodology and methods discussed in this chapter have been selected to construct, define and determine the complex and entangled practices in the professional learning of HE academics. Furthermore, the methodology is framed around a sociomaterial perspective to examine this complexity, making use of the photovoice method to do this. This sociomaterial perspective allows the researcher to investigate and seek out where "differences, interferences and exclusions" (Keevers & Treleaven, 2011) may exist. I noted that the photovoice method was unique to sociomaterial studies and within the field of education. The

chapter also discussed the contentious role and efficacy of 'insider' research and the ethical dimensions that such a project would pose by the dual-role of the researcher. There, too, was an explanation on how the 535 respondents for the questionnaire were selected, from which the 12 participants were then recruited to take part in the substantive parts of the research project: the interview and the photovoice exercise. Finally, there was some discussion around the efficacy and viability of the photovoice method as a tool for sociomaterial investigation. I offered some suggestions on how digital photography could be used to develop a non-representational style to photography.

In the next chapter, I will present my findings from the research. Through four vignettes, I set out to untangle and make visible the multitude of actors and networks that become assembled in constructing particular enactments, relations and embodiments of academic professional learning. I will introduce the reader to some new vocabulary that has enabled me to explicate what is going on within this social *and* material activity. I will also be using the research participants' photographs to illustrate those places and objects that they have identified as helping and/or hindering their professional learning engagement.

05

FINDINGS & ANALYSIS

5.1. Introduction

5.1.1. Section Overview

In the previous chapter, I examined the relevant methodological issues and outlined the research method instruments employed during the research process. In this chapter, I present the research findings and analysis. I seek to demonstrate how the social and material worlds are not inherently separate within the experiences and tensions the research participants have described. Rather, through their many embodiments and relations, the social *and* material worlds represent two different and intractable aspects of everything that comes to exist and be. This is the sociomaterial perspective known as *aspectuality* (Martine & Cooren, 2016) that was discussed in Chapter 3 (Section 3.4). These embodiments and relations bring forth particular forms of knowledge, spaces, time, objects, and power.

In the analysis of the data, I was expecting to see clear references to a range of disciplinary behaviours and patterns in relation to those sociomaterial phenomena that enabled and/or encumbered professional learning, such as the use of specific buildings, rooms, text books, journals or particular networks that relate to the participant's discipline. This would have been consistent with the research literature on academic disciplines (Becher & Trowler, 2001; Malcolm & Zukas, 2009; Trowler *et al.*, 2012; Gornall *et al.*, 2013; Zukas & Malcolm, 2017).

However, interestingly, the data did not emphasise any strong preferences towards any particular disciplinary practices, though there was some mention around particular specialised spaces (i.e. laboratories) and specialised equipment (i.e. microscope), but these were not the focus of the participants' narratives. While I did not ask specifically about disciplinary practices, the participants were free to raise these had they wished to do so. On the contrary, the data highlighted themes and activities that ran across disciplinary areas. It is these transdisciplinary instances that this chapter will be focussing on.

This chapter features four vignettes intended to demonstrate the complexities involved in engaging with academic professional learning from the perspective of the research participants. Each vignette will be untangled to make visible the multitude of actors assembled that generate particular enactments of academic professional learning. I then discuss what properties have arisen from these enactments. My analysis draws upon both thematic analysis and the sensibilities of Actor-Network Theory (ANT) and Non-Representational Theory (NRT). The vignettes are illustrated with the research participants'

photographs of those places and objects that the participants have identified as helping and/or hindering their professional learning.

5.1.2. A Note about New Vocabularies

I will be introducing new vocabularies that I have constructed to help express some of the ideas that I am formulating throughout this chapter. To help the reader, I will be signposting these before the start of each vignette in a sub-section called 'New Terms'. I will also be highlighting the first use of these new terms using bold-italic letters for easy referencing.

5.2. Sociomaterial Enactments, Encounters and Engagements

In the vignettes that follow, I explore those enactments, encounters, and engagements that "touch[es], invade[s] and permeate[s]" through human and non-human bodies (Biehl-Missal & Saren, 2012, p. 170). I consider how these spatialities and materialities (per)form professional learning as they (de)territorialise and (dis)connect various boundaries of space (e.g. physical, digital) and time (e.g. work, personal). In other words, there is no separation of the object (i.e. the car) from the subject (i.e. the academic) (Edwards, 2010). I am, therefore, concerned with those relations in which the object and the subject emerge through their various enactments, encounters and engagements. Moreover, I consider the specificity of this emergence as spatio-temporal borders and boundaries continuously shift and change.

5.2.1. Vignette #1 – Institutional Noise

5.2.1.1. New Terms

In this vignette, I introduce the following new terms:

- *Institutional Noise* – These are the excessive interruptions and disruptions generated by the everyday processes, procedures and practices of a HEI that impact upon an academic's ability to get learning / work done.

- *Negative Affect* – This is a condition whereby human and non-human actors have an adverse influence upon a person. It can manifest itself in many ways, e.g. stress.

- *Positive Affect* – This is a condition whereby human and non-human actors have an affirmative influence upon a person. It can manifest itself in many ways, e.g. contentment.

- *Data-Communications-Machine* – The is the convergence of data sources, communication networks, hardware, software and cables that assembles itself into a machine that tethers the individual to the workplace.

- *Technological Entrapment* – This is a situation whereby a person is given to responding in a particular way to a particular stimulus generated by a technological object.

- *Temporal Entrapment* – This is a situation whereby a person is given to responding in a particular way to a particular stimulus generated by a particular event.

- *(Un)Scheduled Visitations* – This concerns a person receiving a number of solicited and unsolicited visits from a variety of individuals. These visits can either present opportunities or obstacles for a person.

5.2.1.2. Preamble

All of the 12 participants have engaged with a multiplicity of technologies (e.g. e-mail, telephone), processes (e.g. marking), discourses (e.g. changes to assessment practices) and documents (e.g. Extenuating Circumstances Request Forms[8]), which at various times interrupt and disrupt their working day.

Depending upon their roles (e.g. Senior Lecturer) and responsibilities (e.g. Module Leader), most of the participants will share an office with one or more colleagues (see *Photograph 3* below). This creates another form of interruption as an assortment of people (i.e. colleagues, peers, students) occupy and disturb the participants' working space vying for the participants' and/or their co-workers' attention.

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[8] This is a process whereby a student can make a request for an extension or another opportunity to undertake the assessment due to extenuating circumstances, e.g. illness.

Photograph 3: A shared office space

In this vignette, the focus is upon two forms of interruption: digital interruption (e.g. e-mail) and physical interruption (e.g. sharing office space). Most of the participants have identified e-mail and office sharing as being a source of disruption to their working day. These encounters and engagements can enable and/or encumber the participants to perform a range of professional learning and work-based activities.

5.2.1.3. Institutional Noise

During their working day on the university campus, all of the participants encounter a variety of interruptions and disruptions from telephone calls; receiving e-mails requiring an immediate response; forms and documents requiring to be processed; colleagues seeking information; and students seeking help.

All of these encounters create a property that I term as ***institutional noise***. It is *institutional* because it relates to the everyday processes, procedures and practices that keeps an HEI functioning, i.e. finance, governance, student retention. It is *noise* because the HEI generates an excessive amount of information or activity, which distracts the participants from doing what is currently important to them, i.e. marking, learning, writing. This, of course, can be in conflict with what is important to the HEI, i.e. student satisfaction, teaching excellence, funding opportunities. As I will discuss later (see *Section 6.2.4*), the participants have taken a pragmatic approach in how they prioritise their time and workload.

Photograph 4: A participant's smartphone is used to receive work e-mails

An example of this *institutional noise* can be found in the pervasiveness of networked devices, such as tablets and smartphones (see *Photograph 4* above), especially where these begin to infringe upon the participants' time in spaces outside of the university campus, e.g. placement visits, conferences, client meetings. Some participants reported that they can find it difficult to relax during their leisure time at home:

> I can look at e-mails on my iPad … Even over the weekend, if I get an e-mail, I'll probably try and reply. If an e-mail comes up and I've got time, I will respond … because I've got so many other things to do [at work].

Although actors (see *Section 3.5.2.1* for description) such as e-mail, smartphones and other mobile technologies seemingly offer greater flexibility and control over work, these technologies can frequently overwhelm the participants with an overload of information and additional work. This form of *institutional noise* can generate what I term as **negative affect**. This *negative affect* can manifest itself in many ways, such as stress or developing an obsessive compulsion, as illustrated by this participant:

> [M]y e-mails always go "beep, beep", and I want to then look at it straight away. I'm one of those people, that if I get a text or an e-mail, I need to look at it straight away.

Akin to classical conditioning, this participant is compelled to react upon their smartphone making a notification sound, signifying the arrival of a message that needs their immediate attention. Through the combination of a message, smartphone and audio notification, this participant becomes a casualty of another property, which I term as **technological entrapment**. They find themselves unable to resist the call ("beep, beep") that compels them

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to act upon a particular event (i.e. a text message) that has been facilitated by their networked devices (i.e. smartphone). In this sense, technology has locked the participant in a particular set of behaviours. My analysis highlights that more agency is being assigned to objects and technologies as human actors become increasingly dependent and compliant towards them. It is suggestive that these objects and technologies can be perceived as having both addiction-like qualities and enslavement-like properties.

5.2.1.4. The Data-Communications-Machine

The ubiquitous nature of mobile, networked devices enables work to encroach upon those times and places that participants previously thought were safe from workplace intrusion (Middleton & Cukier, 2006). Some of the participants have become "technologically tethered" (Murray & Rostis, 2007) to the materiality of the workplace as communication networks (e.g. Wi-Fi, broadband), software (e.g. *Microsoft® Outlook*), hardware (e.g. laptop computer), cloud-based services (e.g. virtual learning environments), data, code, fibre-optic cables, and electricity converge and configure what I term as a ***data-communications-machine***[9]. The participants become casualties of a property that I have labelled as ***temporal entrapment***, because they feel compelled to work outside of their contractual working hours. The impact of these *technological* and *temporal entrapments* upon the participants suggests that little or no time is available for professional learning. This means that the participants have to give precedence over to work that has the most pressing deadlines. This is a pragmatic choice, but one that could easily be normalised.

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[9] My use of *machine* in this sense, is derived from the work by Deleuze and Guattari (1983). The *machine* itself comprises of a system of devices that are integrated and interact with each other in some way. The power of the machine resides in its relations with each other and what passes (i.e. flow, energy) between them. These system of devices are simultaneously given to machinic enslavement as well as social subjection.

5.2.1.5. Digital Interruption: E-mail
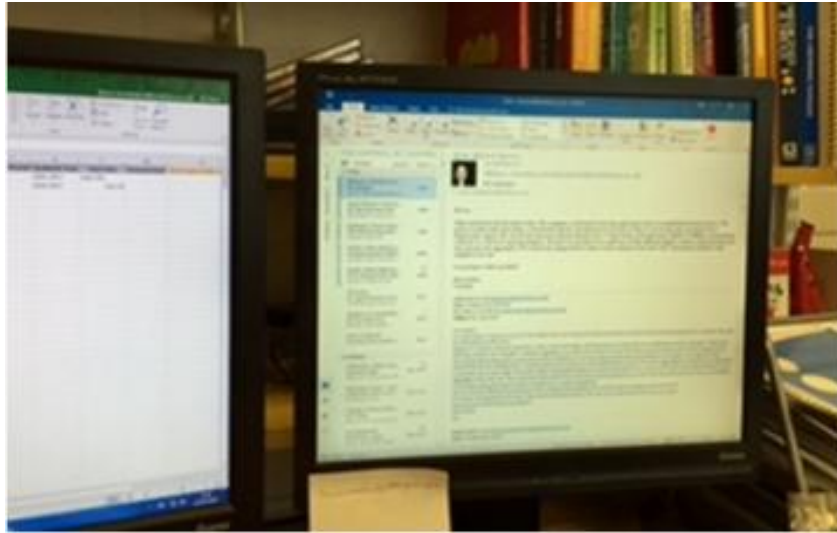
Photograph 5: The Microsoft Outlook inbox belonging to one of the participants

All university staff and students, along with external examiners and partners, have a unique university username, password and e-mail address. They also have access to *Microsoft®* *Outlook* (Microsoft, 2017) to read and send e-mail messages (see *Photograph 5* above).

Furthermore, *Microsoft® Outlook* allows people to maintain and manage a contact list and a calendar, which can be shared with others. The increasing volume and frequency of e-mails for a number of participants can also generate a *negative affect*, which can be a real "source and symbol of stress" and anxiety (Barley *et al.*, 2011; Kushlev & Dunn, 2015):

> I see so many people getting stressed out … some of my colleagues, they'll respond to
> e-mails or they'll e-mail you at 8, 9, or 10 o'clock at night and that's wrong. You don't
> want to be doing that. You feel like you're never off-duty if you're going to be like that.

This participant observes colleagues becoming overwhelmed ("stressed out") with work. They believe that working beyond the contractual hours is inappropriate ("wrong"), otherwise there is no respite from work ("never off-duty"). A number of Schools and Faculties within the university have established their own internal student communications policies. These policies set out concise and coherent guidelines for staff and students, which provides clear information as to when students can reasonably expect a response to their e-mail messages. Typically, students can expect a response to their e-mail messages within two to three working days upon receipt. However, some of the participants are compelled to deal with any student e-mails much sooner:

> I mean, I'm always getting told off for going out and looking at my e-mails to stay up-to-
> date, because I have a fear of not replying to students. So I'll try and reply straight
> away.

For this participant, "fear" induces another form of *negative affect* if they fail to reply to student emails in a timely manner. It could be considered as a form of "iDisorder"[10] (Rosen *et al.*, 2013). This near-obsessive and repetitive behaviour causes friction ("getting told off") between the participant and significant others.

However, other participants feel they have a sense of agency over *how*, *when* and *where* they work:

> I'm quite happy to e-mail a student back even if it's relatively late. [T]hen there's the
> whole thing about working hours ... I sort of feel quite content that it's part of the, you
> know, ongoing support that you give [to students]. The university is very flexible with
> your time.

It is not just the volume and frequency of e-mails that can be challenging. The author and the content of an e-mail can provoke an immediate reaction from the participants:

> What I've learnt from being [at the university], is that you have to read your e-mails
> that are sent to you from the Administration. If you don't, you are in trouble [...] So
> when you get an e-mail that says: change of something; you can't just throw it in file
> because you then won't be able to find the stuff that's online. I've learnt that the hard
> way.

The e-mail can be used to *raise awareness* ("change of something") and *inform* the reader. It offers the reader with another *information channel*, where existing channels (i.e. corporate website) may be problematic ("[unable] to find the stuff that's online"). There is an implicit expectation that academic staff should be reading e-mails sent by colleagues in an administrative, management or leadership role which relate to institutional processes, procedures and practices. Failure to do so could have profound consequences ("you are in trouble") for the academic. Thus, academic staff have a *professional responsibility* (towards their colleagues) and a *duty of care* (towards their students) to ensure their professional knowledge is maintained and kept current.

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[10] *iDisorder* refers to a proposed psychological condition which suggests a negative relationship between technology usage and psychological health.

5.2.1.6. Physical Interruption: Shared Office Space

Most academic staff will share office space with colleagues. Some academic staff, through luck or circumstance, have managed to secure an office to themselves. However, it is academic staff who hold very senior roles (e.g. Professor) and/or significant responsibilities (e.g. Head of School) who enjoy the privilege of having their own office, which is often associated with their status and authority within the institution.

There is a notion that shared academic offices can be an *incubator for ideas* which, in turn, produce *creative hubs* for research and development. Academic staff are, therefore, engendered with an "entrepreneurial spirit" (Lam, 2010). However, with shared office space comes an increased footfall of colleagues, peers and students who visit the participants and/or their co-workers wishing to talk, seek advice, pass on work or packages and so on and so forth. These take on the form of what I term as *(un)scheduled visitations* - the visit will either be pre-arranged or not. As a consequence, a multiplicity of opportunities and obstacles for the participants can emerge from such encounters. Whilst some interruptions are desired (e.g. a break from the screen), others can incur a high cost towards the participant (e.g. an increase in errors)

In the following extract, the participant offers two accounts (the first set in the past, and second set in the present) relating to their different experiences of sharing an office. In their first account:

> I was sharing with..., I think it was six people in an office that really should've only had about three. And I really struggled. I would do things like get in early and stay late just so that I could get my work done on my own. My heart would sink if everybody turned up.

For this participant, there is a palpable *negative affect* ("my heart would sink"), should all six academic staff members turn up on the same day. The anxiety and discomfort felt ("I really struggled") for not being able to do a day's work meant they had to make some *temporal adjustments* to their working day ("get in early and stay late") in order to do their job. However, in their second account:

> I think that's why I feel so comfortable now [in my new office], because I know that my colleague is very rarely going to be there... [S]he is a person that just gets her head down because she needs to get work done on the days she is in. We don't really chit-chat. I think we both realise we are just there to get on with things.

In their new office surroundings, they are much more "comfortable". This creates what I term as a ***positive affect***. It is, in part, due to their office co-worker not always being around. It is also "comforting" to the participant that their office co-worker shares similar values and work ethic ("we both realise we are just there to get on with things"). Another participant has adopted a particular strategy in dealing with excessive *institutional noise*:

> [I]n my own office; I'm often just here on my own ... so I can get quite a lot of work done. But when everyone is in, you get lots of disturbances so you just put your headphones on and you can just get on with things ... [I]f you don't do that, you know, you get interruptions...

Something as banal as a set of headphones can take on many aspects. The participant's use of headphones in the office signals a number of properties and indicators. The headphones can enable *noise reduction* and allow the participant to focus upon that task at hand ("just get on with things"). The participant does not necessarily need to play any audio output through them. The headphones indicate to the other occupants in the room that the participant is busy and does not wish to be disturbed. Thus, the headphones act as a *personal door* to the participant working in an open-planned office, a *privacy filter* to exclude any external noise that might otherwise distract the participant, and as a *work mode* indicator to the participant's co-workers.

5.2.1.7. Postamble

In summary, *institutional noise* materialises through the various interruptions and disruptions to the participants by a number of actors that take the form of technology (e.g. e-mail, telephone), processes (e.g. marking), discourses that require the participants' attention, and documents that need acting upon by the participants. Such noise can generate *negative affects* within the participant. As institutions reconfigure their real estate for different purposes, some academics find themselves sharing office workspace with colleagues. This, too, generates additional *institutional noise* for the participants as they negotiate a sequence of *(un)scheduled visitations* from colleagues, peers and students, whilst developing strategies for lessening the impact.

Technologies like smartphones and tablets along with work-based e-mail can "technologically tether" (Murray & Rostis, 2007) the participant to the workplace, irrespective of the participant's location or contractual hours. Through the *data-communications-machine*, the participants are casualties of *technological entrapment* and *temporal entrapment*. The

combination of technology and workplace environment will have material effects upon the participant's body, some will be detrimental to the participant's health and wellbeing.

5.2.2. Vignette #2 – Surrogate and Transient Workspaces

5.2.2.1. New Terms

In this vignette, I introduce the following new terms:

- *Surrogate Workspace* – This space has been fashioned into an individual's office workspace. This space is not located at the individual's place of work. This space tends to be permanent and private.

- *Transient Workspace* – This space has been fashioned into an individual's office workspace. This space is not located at the individual's home or place of work. This space tends to be temporary and public.

- *Mnemonic Space* – This is a mental space that evokes particular thoughts and sensations that have been triggered by a number of multi-sensual stimuli.

- *Immersive Induction* – This is a particular property of a human and non-human entity, which facilitates a particular state of mind whereby the individual is fully immersed on the task at hand.

- *Reminiscence Induction* – This is a particular property of a human and non-human entity, which facilitates the surfacing of memories and recollections within an individual.

5.2.2.2. Preamble

Photograph 6: Different spaces in which participants escapes to. FLTR: home office, allotment, lounge, woodlands

For most of the participants, the workplace is not necessarily the most conducive place to learn, to think, to plan, to create, or get work done, such as marking or writing reports. They will seek out other spaces to escape (see *Photograph 6* above) from the *institutional noise* that inhibits their ability to learn and/or work.

This vignette concerns the need and desire of the participants to seek respite and refuge in those hidden places and secret spaces that they have constructed for themselves, as they find ways to escape from the burgeoning demands of the workplace.

5.2.2.3. Surrogate Workspaces

This section draws upon those participants who have replicated their work space at home:

> [M]y home office … is where I do the majority of my professional learning. My research activity is at home. [M]y [home office] chair is very comfortable and helps me in my learning. It helps me in doing my research and writing my projects … I like listening to music when I do my work as well. [I]t's very important to me so I can sort of escape the world. You know, I can kind of get into my own zone.

A notion of *comfort* (such as the "chair") is important when engaging with professional learning, especially if the participant is planning to spend long periods of time engaged with the process. Once again, headphones are used as a *privacy filter*, but this time from *domestic noise*, such as those of children playing, family dog barking, or noisy neighbours. The music from the headphones have another property, which I call **immersive induction**, whereby the music is able to help the participant ("escape the world") to become fully immersed ("my own zone") upon the activity or task at hand. This property shares similar features to those of

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Csikszentmihalyi's (1990) concept of "flow"[11] and Ylijoki & Mäntylä's (2003) notion of "timeless time"[12].

Another participant has a more restrictive use of their workplace office:

> I use the office space at work not as a work space in terms of academic work, but for industry, for the mechanics of being an academic ... because [I] have colleagues, students and people that [I] have to interact with.

There is a preference to use this space for some of the more administrative ("mechanics") or service-related ("industry") aspects to being an academic. It is also a space that enables them to receive ("interact") *(un)scheduled visitations* (i.e. colleagues, peers, students). Their office workspace is not used for professional learning, or the more scholarly aspects of their academic work; those kinds of activities take place at their home:

> I have a room at home which is my library (see *Photograph 7* bottom-left) and it's got three walls full of books [...] if I'm sitting there in the chair, or I'm turned on one side or the other side, I can then remember things that are in other books or another author I should be looking at or thinking about. I just find that it is a really good reflective space for thinking about ideas [...] I found that those three walls are all ingrained in my head. So often I can think of an idea in a book and I can visualise where it is in my library [...] So I find that really quite an important space.

The library is *open*, *airy* and *informal*. The soft furnishings enable the participant to relax and allow their mind to wander ("a really good reflective space for thinking"). The books on the shelves are containers to ideas, critical friends ("author[s]") and knowledge. The order in which the books are stacked on the bookcase ("visualise where ... in my library"), and the *past history* which the participant has with those books ("ingrained in my head"), through what I call a **mnemonic space**. This mental 'space' has multi-sensual associations that are used to trigger memories about the books and the authors. This is suggestive that the space has a property that I label as **reminiscence induction**, whereby recollections begin to surface, connections are made, and ideas start to take shape.

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[11] *Flow* is an optimal mental state for learning whereby the learner is fully immersed or focused upon performing a particular activity or task.

[12] *Timeless time* is a temporal structure wherein the learner loses all sense of time as they become entirely immersed in the particular activity or task at hand.

The participant makes use of another space at home:

Photograph 7: FLTR: home library, home office

> I just for some reason found that it's just easier to have this separate office space (see
> *Photograph 7* top-right) where I'll do bits of everything. So, bits of university work, my
> own typing up in terms of research, and things like that … I [feel] more comfortable and
> have more privacy [there] … The creative space is the [library] … and the [office] is
> where it all kind of comes together in many respects because that's where I do all of my
> writing really.

The home office is *closed*, *private* and *formal*. The furnishings are harder and sharper, designed to keep the participant focused and alert. The personal computer and digital storage devices makes this a place for the production of ideas, projects and concepts ("where it all kind of comes together"). Here is where the actual labour and toil of academic work begins. For this participant, it is the home, not the work place, where creativity, thinking, learning and scholarship are constructed and produced. The participant has invested and constructed two separate *spatial identities* within their home. The library, or reading space, that facilitates reflective and creative thinking of ideas and concepts; and the office, or writing space, where ideas and concepts take form and shape through the written word. Thus, these spaces compartmentalise two different aspects of academic work: reading and writing. Another participant made use of an actual *secret space* that came as part of their house:

> This is my hidey-hole (see *Photograph 8* below). It's a room that was never meant to be
> there in my house. It was due to a design fault [...] But our neighbours told us that this
> room – which had already been modified by the time we moved into the house – was
> this sort of hidden room somewhere. It's quite a small space [...] I've got shelves there.
> So I've got all my work folders that run along the wall by the computer. I've got storage
> boxes ... [I]f I'm working from home, I use the remote desktop service.

Photograph 8: A participant's 'hidey-hole'

A quirk in the design of the house ("design fault") means the participant has an extra space for work-related activities and is removed from any *domestic noise* (i.e. family pets, music playing downstairs) that may occur. There are folders and boxes to store work-related materials to help maximise space. They use their own computer to access the university's services ("remote desktop service") for university-related work. The walls and ceiling of this space are decorated with an assortment of family photographs and posters and postcards from art exhibitions, concerts, gigs, and various trips:

> So when I'm working on something, or I'm studying in the office, I look around for inspiration or just to, to kind of take break. And I never tire of looking at the photographs or pictures that are on the wall ... I can remember all of the places I've been to, all of the things we've done, and all the trips and things we've been to are on there.

This tiny space also has a powerful *reminiscence induction* property, and is an endless ("I never tire") source of inspiration (from the "photographs or pictures...on the wall") that is able to inform and shape the participant's learning and work-related activities.

Replicating their office workspace in a space which is not their work place has allowed the participants to construct what I term as a **surrogate workspace**. The *surrogate workspace* has some of the features found in an office workspace, such as desk, chair, book shelves. The *surrogate workspace* shares a number of properties similar to a private study room. The *surrogate workspace* is *personal* and *private*, offering the participant a *cocoon* in which to learn and work. It promotes *comfort*, it enables *creativity* and *productivity* to flourish, it can be a source of *inspiration*, a *sounding board* for expressing thoughts and ideas aloud, and it is a

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space that invites *exploration* and *experimentation*. More importantly, this is a space that the participant has control over in terms of lighting, temperature, furnishings, decor and visitors.

5.2.2.4. Transient Workspaces

Some of the participants will seek out spaces in which to hide or escape from the *institutional noise* in order to engage in a variety of professional learning and/or academic work-related activities, such as this participant:

> [M]arking will not take place in the office because my time there tends to be quite interrupted by staff. I will do it at home or I tend to do it at [another university] campus (see *Photograph 9* below) ... because it's a still on university premises, so I have access to Wi-Fi, etc. But, I don't teach there. I don't have students there. Nobody knows me there.

Photograph 9: The participant uses a café area within another university campus

For this participant, marking is a high-stakes endeavour requiring complete concentration. The university has a number of campuses across the South-East of England. This participant lives close-by to one of these campuses, but does not teach there. Despite being a member of university staff, they are able to move around the campus in *complete anonymity* ("[n]obody knows me there") and avoid *(un)scheduled visitations* ("by staff"). They are able to take their laptop and make use of the university's Wi-Fi service. Another participant occupies quite a different space for learning and thinking:

There is no electricity on my allotment (see *Photograph 10* below). I can't do anything technical up there. But, it's a good thinking space and I sometimes, if a storm breaks out or I'm having a bit of a tea break from digging; I go and sit on my little chair in there and I might listen to a podcast or a documentary or something like that on my phone. I might do some Google searching for something that I need to find out about. My allotment's great for that.

Photograph 10: The participant's allotment

The allotment is a natural, green space, it becomes a place that facilitates thinking and reflection ("a good thinking space"). The addition of a smartphone becomes a powerful *learning aid*. The participant is able to use the phone to listen to podcasts or documentaries. Thus, the phone becomes a *conduit for information*, whereby the participant is able to perform searches on the internet. There is an interesting juxtaposition between the old way of life (i.e. allotment) and the new way (i.e. smartphone). For this participant, there is a harmonious symbiosis between the old and new worlds. This space represents a form of escape: an escape from *institutional* and *domestic noise*, and an escape from roles and responsibilities, such as parent, teacher, colleague.

For other participants, they are literally on the move and have to make the most productive use of the space and time that is available to them:

I do a lot of travelling to and from work but also travelling to events, meeting people [...] Consequently, I take my laptop with me everywhere - whether it's train, plane, bus - so that I can work; or I'll take a notepad with me so that I can work. Sometimes, it works out really well because you just have a good flow of ideas ... if the train or bus

gets too crowded … just [setting aside some] thinking time where … you can work through ideas mentally. I find that really, really productive.

How the participant will make use of their journey time will depend on how busy their travelling space (i.e. bus or train carriage) becomes (see *Photograph 11* below). If the travelling space is relatively calm and quiet, the participant will undertake work that will involve the use of either a laptop or a notepad.

Photograph 11: Participant working on a train

The use of public transport can be a *precarious space* in terms of privacy and productivity. If it becomes too busy or noisy, the journey time is not wasted as the participant is able to make use of the temporary space for thinking time ("work through ideas mentally"). However, additional support may be required to facilitate their productivity:

> I had the earplugs out because it just means you can blank out of that conversation.
> Quite often I don't even put the music on. It's just a case of noise reduction and that
> means I can then get on and do whatever I've got to do.

The earplugs, like the headphones, become a *privacy filter*. Where the participant chooses not to have music playing through the earplugs, these have the additional properties of *noise reduction* and *perceptual isolation* (i.e. isolating the senses from one's surroundings). Through an *immersive induction* property, the participant is able to focus ("I can then get on…") and channel their energies and thoughts into working or thinking. Precious time is, therefore, not wasted as the participant moves between locations.

For some of the participants, the less-than formal spaces they have occupied for thinking, planning, learning or working can be short-term or temporary. I call these pop-up offices as a **transient workspace**. Unlike the *surrogate workspace*, the *transient workspace* can be *(im)personal*, *(in)convenient*, and often *public*. It is predicated by *variability* in what can be enacted in that space, and *availability* as to when something can be enacted in that space. However, it offers an *opportunity* to think, be creative or reflect. It provides a *buffer* between home and the work place, sharing similarities with Oldenburg's (1989, 2001) notion of "third place"[13] and Soja's (1996) concept of "thirdspace"[14].

5.2.2.5. Postamble

To summarise, a *surrogate* or *transient workspace* will materialise as participants find a means to escape or hide from the *institutional noise* that prevents them from engaging with a variety of professional learning and academic work-related activities. A *surrogate workspace* is typically fixed (i.e. replicating the office workspace), and a *transient workspace* is typically fluid (i.e. a café).

A *surrogate workspace* has been constructed, often at home, around *comfort* and being *private*, enabling *creativity* and *productivity* to flourish, and inviting *exploration* and *experimentation*. The *transient workspace*, on the other hand, is more temporary and often constructed around happenstance. Engaging with this form of workspace is dependent upon its *availability* and there is often *variability* in the encounters and experiences.

5.2.3. Vignette #3 – The Car and the Journey (to and from work)

5.2.3.1. New Terms

In this vignette, I introduce the following new terms:

- *Human-Automobile* – This hybrid emerges from the driver and the automobile interacting with each other in unison.

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[13] The *third place* are the social surroundings which are separate from the social environments of home ("first place") and the office ("second place"). Examples include cafes, public libraries, or parks.

[14] The first (i.e. university campus) and second (i.e. place of learning) spaces are two different, and possibly conflicting, spatial groupings where people interact physically and socially. The *thirdspace* represent the in-between, or hybrid, spaces, where the first and second spaces come together to construct a new third space (i.e. place to meet socially).

5.2.3.2. Preamble

All twelve of the research participants make a journey of some kind to and from the university. This journey may involve walking, taking public transport, cycling, driving, or a combination of more than one mode of transportation. In this vignette, the focus is upon one mode of transportation: the car (see *Photograph 12* below) *and* the participant's journey. The participants have identified the car as a particular space that enables them to perform a range of professional learning and work-based activities. The car journey itself, provides the participant a temporal space in which to perform these activities. As this vignette will demonstrate, the car is a specific example of a *transient workspace*.

Photograph 12: A participant's car used to travel to and from work

5.2.3.3. The Car

A number of participants travel daily to and from the university by car. For some, this journey can take anywhere between 30 to 45 minutes, depending on road and traffic conditions, and across different terrains (e.g. coastal, rural, urban). The time of year will determine whether the participant is driving in daylight or darkness. One of the participants, for example, makes productive use of their journey time to work:

> I might be thinking about planning, and sometimes, I find that's when my mind is half-occupied with something else, sometimes things come to me […]. Sometimes, you know, I'll be thinking … all of a sudden an idea will pop into my head. I formulate, you know, something. Two ideas have come together and it's made a connection. So, sometimes in the car that happens, and I'll be planning perhaps a lecture, or planning experiments to do, or just planning.

On the journey to work, whilst the participant's body is physically located within a confined space (i.e. the car), they are occupying another space that is *cognitive* ("my mind") and *dialogic* ("two ideas have come together and it's made a connection"). Thus, from a linear sequence of processes, patterns begin to emerge, and ideas start to connect within these spatial configurations. There are other productive uses of the journey time:

> I will just try and fit [my ideas] all together and I just sort of have that in my head [...] If
> I'm driving, I will say: "OK. Right. Today what we're going to do is, we're going to do
> such and such. Now I want you to think for a second is...[sic]" And I'm trying to think:
> "Right. How do I engage them? What's my hook to make sure my lecture story is really
> clear". So sometimes, I will rehearse like the opening lines out loud in the car.

This participant also occupies a space that is *cognitive* ("my head"), but it is *linguistic* ("I will rehearse...the opening lines out loud") in character. The car is more than just a piece of sophisticated machinery that is able to transport the occupant(s) from one destination to another, as one participant noted:

> It sort of occurred to me, perhaps we undervalue the car in terms of a thinking space.
> It's almost your private little reflective pod really isn't it?

The enclosed space of the car offers the participant with a *private space*. For the participants, the car becomes a cocoon ("pod") that facilitates a multiplicity of aspects: it is an incubator for ideas; a stage to rehearse or perform a lecture; a platform for talking or thinking aloud / allowed; and a drawing board for planning. These aspects are bestowed with an array of properties: it is *private*, it is *secure*, it enables *thinking*, it encourages *performance*, it suggests a *near future* (i.e. how the working day might progress), and is a space in which the individual has a *sense of control*, but also a *sense of urgency* as they travel *to* work. The lines between professional learning and academic work become blurred and entwined as a reciprocal interaction between the participants and the car space form a *sounding board* to *self-monitor*, as ideas, information, and approaches are verbalised within the car space.

However, for the journey time home, the car *and* the participant's journey take on another aspect:

> But on the reverse journey, funnily enough, it's switch-off time. That's a lovely amount
> of time to switch off between the two [destinations] [...] So it means that, you know,
> here is family time, free time, whatever. Here is where I work [gestures to the room].

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So it's like, I switch into a mode of work when I'm [at work]. So, I try and get all my professional learning done within [work location], I suppose.

For some, these new aspects can take on a different character:

You do a lot of thinking in the car [...] Reflect coming back from work.

On the journey home, the ambience of the car shifts. There is an element of *surprise* ("funnily enough"). The surprise is a *nice* one ("lovely"). The car becomes a rest room to relax and unwind; a sanctuary to restore mind, body and soul; and a confessional box to reflect and talk-through troubling thoughts. The car space is still *private* and it is still *secure*. However, it is bestowed with new properties: it invites *restoration*, it promotes *relaxation*, it enables *reflection*, it suggests a *recent past* (i.e. how the working day actually progressed), and is a space where the individual still has a *sense of control*, but it comes with a *sense of calm* as they travel *from* work.

However, these properties are fragile and ephemeral, as spatial and temporal borders and boundaries can become disrupted in a split-second. For example, an unexpected road and/or traffic condition may require the driver to be sharp and alert, shaking them from initial "driver inattention" – this is the condition whereby the driver is providing little or no attention to the critical activities required for driving safely (Regan *et al.*, 2011; Regan & Strayer, 2014; Strayer & Fisher, 2016).

5.2.3.4. The In-Car Radio as Actor

Photograph 13: The in-car radio is one of the other actors on the car journey to and from work

Within the cocoon of the car, the driver and the car itself are not the only actors present on the journey. The in-car radio (see *Photograph 13* above) and the audio output from the radio (e.g. music, conversation, play) are the other actors present in the car. They keep the participants company on the journey to and from work:

> I'm a Radio 2 man, unless it's a really irritating and then I put Classic FM on. [...] I don't like fast, heavy music in the car, coz I find my driving changes. I get angry and annoyed. But, if I have something like 'The Carpenters' on, [my mood is] normally OK. Then, I'm quite relaxed by the time I get home.

A sentiment shared by another participant:

> I listen to Radio 4, though it really depends on where my brain is at the time. Sometimes I could drive the whole way to work and I will be formulating my day and have not listened to Radio 4 at all, even though it's on. However, many times there'll be something ... on there that really catches my interest ... This will formulate something in my mind that I will often use in my teaching. I think it's because this is information gathering, and it supplements my thinking about my learning and my teaching.

For one participant, *BBC Radio 2* and *Classic FM* relaxes them (unless "fast, heavy music" is played, then they are "angry and annoyed"). For the other participant, *BBC Radio 4* keeps them informed about current affairs (if it "really catches [their] interest"), which they can draw upon ("formulate") to make their teaching more topical. The inclusion of the in-car radio invites additional properties to the car space: it is a *conduit for information*; it enables *learning*; it provides *entertainment*; and it can create *sensory diversions* and *cognitive distractions* ("angry and annoyed"). Other actors also exist on this car journey (e.g. ignition key, air conditioning system, satnav), though their roles will have varying degrees of import with regard to the participant's professional learning.

5.2.3.5. The Car Journey – Time and Distance Travelled

The car journey itself (see *Photograph 14* below) provides the participants with time. This journey time is an important start and end to the working day. It is time used to prepare for work, and time used to unwind from work. The car and the journey itself provides an invaluable window of opportunity for professional learning to take place by giving the participants the time and space to be able to think, plan and reflect. This journey time represents a slice of time that participants may not necessarily acquire during their working day.
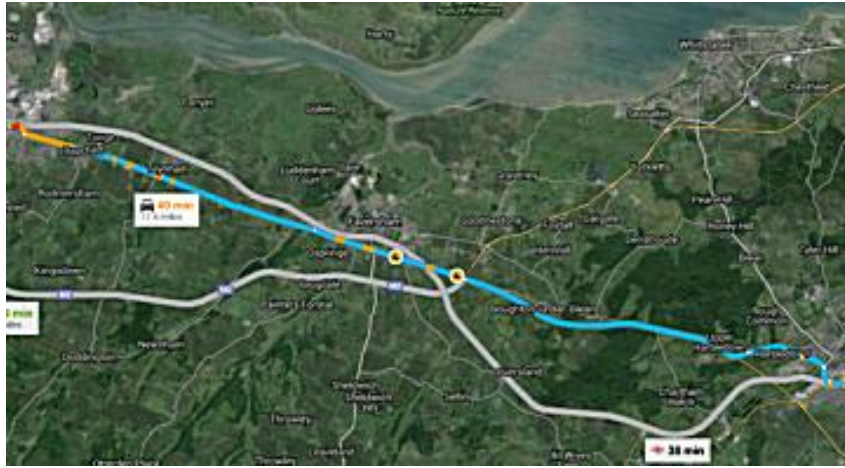
Photograph 14: A map of a participant's journey to and from work (denoted by the straight pale blue line)

The car journey itself is bestowed with a set of properties: it enables a *space*; it creates an *opportunity for action* (i.e. plan, reflect); and it suggests a *purpose* (i.e. going to and from work). Depending upon the direction of travel, and what awaits the participant at their intended destination, geographical distance between departure and arrival points can precipitate a *sense of urgency* or a *sense of calm*:

> I quite like the fact I'm not in [work location] when I'm not working. I think, you know constant reminders of work will ... it's not good for me, so I feel compelled to work.

For this participant, "constant reminders" identify their workplace's geographical location with work, sharing similarities with the concept of "place identity"[15] (Proshansky *et al.*, 1983; Lewicka, 2008; Anton & Lawrence, 2016). This association of the workplace location and "reminders" of work creates anxiety ("not good for me") when in close geographical proximity. They resist temptation ("feel compelled") to work during their leisure time.

5.2.3.6. The Human-Automobile

Humans are made up of a network of musculoskeletal and neurological components. The automobile is made up of a network of mechanical and electrical components. The reciprocal interactions between human biology and automobile technology manifest themselves as the relations between biological senses (i.e. visual), human anatomy (i.e. hands), car components (i.e. steering wheel), and digital sensors (i.e. speedometer) begin to interact in unison. The driver sits in the car with hands on the steering wheel, feet on the accelerator and clutch

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[15] *Place identity* is a sub-construct of a person's self-identity, and consists of knowledge and feelings developed through everyday experiences of physical spaces. It derives from the multiple ways in which place functions to provide a sense of belonging, construct meaning, foster attachments, and mediate change.

pedals. The driver is, therefore, physically and proprioceptively[16] conjoined to the car to become what I call a **human-automobile** hybrid.

Other actors interact with the *human-automobile*, such as the road and weather conditions. The driver, through the tyres of the car, is able to detect the conditions of the road (e.g. wet, icy, pot-holed). Similarly, the driver, through their own senses and the external forces acting upon the car, is able to adjust and compensate for the weather conditions (e.g. rain, snow, wind).

However, those properties that have precipitated from the car space and the journey time are fragile, giving way to interruption and/or disruption at a moment's notice (e.g. icy road conditions, flat tyre). The attention of the *human-automobile* hybrid abruptly returns to the real world of traffic, roads and driving safely. The ephemeral world of professional learning is, temporarily, left behind.

5.2.3.7. Postamble

In summary, the *human-automobile* hybrid materialises during the car journey to and from the university. It is constituted with a number of actors that facilitate professional learning: car, in-car radio, audio output from radio, road and driver. The car journey, itself, facilitates a *space* that creates for the *human-automobile* an *opportunity for action*. Depending on the direction of travel, the journey will suggest a particular *purpose* (i.e. to or from work) for the *human-automobile*.

In this *private* and *secure* car space, the *human-automobile* becomes a *sounding board* in which to *self-monitor* this *opportunity for action*. This *sounding board* can enable and encourage *thinking*, *planning*, *performance* and *reflection*. Depending on the *human-automobile's purpose*, the car space ambience can shift to one that invites and promotes *restoration* and *relaxation*. The inclusion of the in-car radio into the car space offers the *human-automobile* with a *conduit for information* that can enable *learning*, or provides *entertainment*. The audio output from the in-car radio can create various *sensory diversions* and *cognitive distractions* for the *human-automobile*, these too, can promote *restoration* and *relaxation*.

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[16] This refers to a sensory receptor, found chiefly in muscles, tendons, joints, and the inner ear, that detects the motion or position of the body or a limb by responding to stimuli arising within the organism.

5.2.4. Vignette #4 – The Knowledgeable Other

5.2.4.1. New Terms

In this vignette, I introduce the following new terms:

- *Knowledgeable Other* – This is a trusted human or non-human entity that a person will interact with to try to assimilate (or fast-track) a particular piece of information. This particular piece of knowledge often sits outside of an academic's subject area.

- *Knowledgeable Community* – This is a trusted community comprised of knowledgeable others.

- *Academic Authenticity* – This concerns the 'love' and 'care' that an academic has towards their subject, which shapes and informs their values.

5.2.4.2. Preamble

All of the participants have to engage in some form of professional knowledge. Typically, this knowledge will be located around their subject discipline, research and knowledge exchange, teaching and assessment practices, and organisational agendas (see *Figure 2* below). There is an expectation that all academic staff will have to be familiar with these different forms of professional knowledge. For academics to maintain currency with their professional knowledge, they are expected to engage in a variety of professional learning activities.

Figure 2: The University's Strategic Framework

The issue common to most, if not all, academics in the Higher Education sector is *time* for this professional learning to take place. Moreover, as I have demonstrated, finding a suitable *space* in which professional learning can happen is also an issue. In Section 2.1.1., I suggested a definition for professional learning for the purposes of this study. In some sense, this definition as far as the participants are concerned has become something of an 'empty shell',

reducing professional learning to just meeting "present and future organisational objectives". In other words, the participants appear to have little or no say in what they prefer / need to learn.

In this vignette, the focus is upon the various strategies adopted by the participants in an attempt to prioritise one form of professional knowledge (e.g. subject discipline) over another (e.g. institutional policy) against increasing workloads, limited resources and organisational change.

5.2.4.3. Love Thy Discipline

> Well I'm still involved in researching [my subject] because I love it and I always will.

Most of the participants have expressed a "love" towards their subject discipline, akin to Spinoza's (1901, [1662]) notion of "intellectual love". This "intellectual love" combines the cognitive and the affective, it is an *emotional disposition* (e.g. compassion) rather than a passionate one (e.g. lust, greed) (Rowland, 2005; 2008). Another participant expresses a similar "love" for their subject:

> I know I'm very lucky to be in this position and, you know, I think that part of getting to
> this job is that you have this mentality. I think we're all very much like that. I mean if
> not, if I was being pragmatic; I'd probably be in industry earning four times the salary
> [laughs]. But that's the thing. It's because I care and I love the subject. You've got to put
> up with the other stuff that comes along I suppose and the other demands on your
> time.

The participant considers it to be a *privilege* to become an academic ("I'm very lucky to be in this position"). It requires a particular set of *personal values* ("have this mentality") that enables the individual to survive and thrive in Higher Education. These *personal values* are not predicated on any monetary gain ("earning four times the salary") that can be found in the private sector ("industry"). Rather, it is a "care" and a "love" for the subject discipline, or what I call **academic authenticity**, that shapes and informs those values. Furthermore, the participant sometimes has to make a *personal sacrifice* ("put up with the other stuff") and/or undertake *professional acquiescence* ("other demands on your time") in order to maintain and nurture that "care" and "love" for their discipline. Indeed, those *personal values* coupled with an *academic authenticity* are the building blocks to *becoming an academic*:

I have been told by one academic, many years ago, that an academic who stops reading and educating themselves stops being an academic.

For this participant, *being an academic* is strongly tied towards professional learning ("reading and educating themselves"). It would seem that academic identity is profoundly affected by institutional processes and values (Winter, 2009) through *personal sacrifice* and *professional acquiescence*. Furthermore, academic identity involves a continuous cycle of construction, deconstruction and reconstruction of personal (*personal values*) and professional (*academic authenticity*) identities (Henkel, 2000; Fitzmaurice, 2013; Sheridan, 2013) whilst acceding to a multitude of shifting ideals (Haamer *et al*., 2012; McNaughton & Billot, 2016).

Most academics are aware that there are organisational expectations to integrate and embed a number of Higher Education initiatives, such as employability, within the curriculum of their subject discipline. For this participant, they take a creative and revolutionary approach to assimilating other knowledge forms within their subject discipline:

For those [institutional] issues and initiatives around, say employability; I just think of creative ways of working with them or trying to subvert them. That way it makes it much more revolutionary for students [...] You know, so it's constantly making those points of connection and it makes the discipline come alive [...] So, I find them a challenge, to overcome, rather than a barrier that imposes restrictions on what I can do.

The participant understands that they need to incorporate disparate discourses, such as employability, within the curriculum of their discipline. They perceive this institutional requirement to be a "challenge" rather than a "barrier". The participant adopts an innovative strategy ("revolutionary"), based around *creativity* ("creative ways") or *subversion* ("trying to subvert"), to integrate those disparate knowledges into their teaching and subject discipline. The participant demonstrates an *academic activism* because they want to be able to have agency over these types of knowledge that they perceive as being coerced upon them. For this participant, *academic activism* serves their students in a number of ways: it can demonstrate a different way of thinking about a problem or issue; it makes parallels and associations ("points of connection") between different types of knowledge; and it reinvigorates the curriculum by making it relevant in the real world ("discipline come alive").

5.2.4.4. The Knowledgeable Other

An academic's role and responsibilities will determine how much information they will need to synthesise. Where institutions are undergoing organisational change, this can be unsettling time for a number of academics as they try to assimilate an overabundance of information, or *knowledge regimes*, that can sometimes be vague, open to different interpretations or in conflict with other information sources (see *Figure 3* below). For a number of the participants, rather than read the organisational documentation on a particular policy, procedure or process, they will seek out a trusted colleague whom they perceive to have a good understanding of it - here I introduce the term **knowledgeable other**.

> I have to confess that I'm not keen on the process stuff. I wish someone else would just do that for me. It gets in the way of my creative flow sometimes, but it seems like a necessary evil that needs to be done ... I'm not very good at retaining information about things I'm not really interested in and the process stuff ... I look at my colleagues and see how they manage that stuff and how they're successful in it so I've particularly found this the case since I've taken on the lead role of one of the programmes that I'm teaching on so, you know, the buck starts to stop with me...
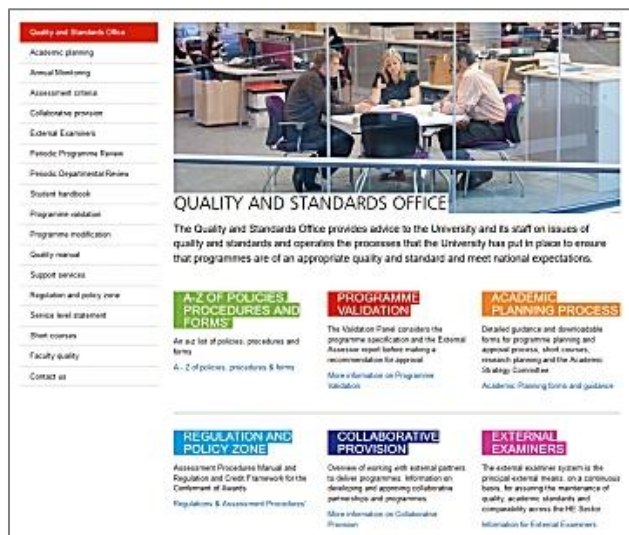
Figure 3: The Quality and Standards Office website

This participant offers a *confession*, they are neither "keen" nor "interested" in the "process stuff" (i.e. assessment procedures, sustainability), as they are unable to retain this information. The "process stuff" interferes and disrupts ("gets in the way") with the things that interest and stimulate them ("creative flow"). It creates a *knowledge dissonance* between their interests and disinterests. They perceive the "process stuff" to be *inconvenient*

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("necessary evil"), but concede that they still need to engage with it, as there are *unfavourable consequences* if they do not ("the buck starts to stop with me"). They would prefer another colleague to look after the "process stuff", but are forced to seek out those colleagues who can help them. This rather questions the validity of the "process stuff". The participants spend a long time learning about these rules and regulations, but is it helpful towards the student or staff experience? It is not always clear that there is a shared understanding with regards to the "process stuff" as different staff will have different interpretations towards it. What then happens when the rules and regulations change? Are these changes helpful or necessary? Who benefits from these changes: students, staff or the institution?

The participant goes on to compare themselves unfavourably to their more "successful" colleagues who are able to embrace all dimensions of academic work. This *knowledge dissonance* is echoed by another participant:

> I'm probably naughty. I don't retain rules and regulations as well as I probably should, and when these turn up, I tend to go to other staff members who I know will know that information better than me ... I'm not classed as a management level member of staff ... so, I think those members of staff will be better placed to have to know that [information], as opposed to me having to know it.

This participant also offers a *confession* ("I'm probably naughty"). There seems to be a trend amongst the participants in feeling anxious and being 'on the back foot' and needing to confess their 'crimes' of professional responsibility, which arguably are foisted upon them illegitimately. On the one hand, the participants are trying very hard to maintain their *academic authenticity*: it is what they, their colleagues and their students expect of them. On the other hand, the participants are trying very hard to meet the challenges and expectations placed upon them by their institution. As such, these two spheres of interest can be problematic for the participants to successfully negotiate.

The participant also has responsibilities towards a programme they are teaching on. Likewise, they are unable to retain information ("rules and regulations") that they are not interested in. Unlike the previous participant, this participant is of the firm conviction that it is their senior colleagues ("management level") who should be the gatekeepers for this information, because they are "better placed". Thus, these senior colleagues are the *knowledgeable others* that this participant will seek out for further help and advice.

However, for some participants, assumptions have been made as to what kind of professional knowledge they should know and be able to confidently act upon:

> Subject knowledge I think of as my own responsibility. For the other sort of knowledge, there is a good support network ... I mean, a lot of this stuff is new to me, some of the administrative stuff is new to me. I'm learning it all the time, but there are people that know more than me about these things, and I lean on them quite a bit to say: "OK! How do I do this? I've been asked to do this. What's all this about?". There is an assumption that you know what you're doing even if you've never done it before.

This participant is of the firm belief that subject knowledge is their responsibility, which seems to suggest that other forms of knowledge are not. Here, they rely on what I term **knowledgeable communities** ("good support network") and *knowledgeable others* to provide the information they seek regarding knowledge that sits outside of their subject area. The working practices and regimes of university are still relatively new to the participant ("a lot of this stuff is new to me"). It is possible that, in time, this participant will become one of the *knowledgeable others* ("I'm learning it all the time"). However, there is a *knowledge detachment* between what the institution thinks academics should know and what academics actually (or want / choose to) know with regards to non-subject knowledge and institutional policies, processes and procedures (or *knowledge regimes*). The implications of this 'detachment' can see academic staff becoming less engaged with the "process stuff", unless it directly affects the student experience. Academic staff may adopt more cursory approaches to assimilating non-subject knowledge because there is too much content to read in a short space of time. Academics may develop a dependency upon the *knowledgeable other* to help 'fast track' this information because they do not want to be overwhelmed with an over-abundance of information.

5.2.4.5. Postamble

To summarise, as academics, the participants in this study profess a love of their subject discipline. However, academic identity is shaped and informed by institutional processes and values and is constantly reconfigured through *personal sacrifice* and *professional acquiescence*. They will be expected to be familiar with professional knowledge that is situated outside of their subject discipline. Some will adopt *academic activism* in trying to integrate and embed non-subject knowledge within the discipline.

For other academics, these new *knowledge regimes* can be unsettling and troublesome. There, too, is a *knowledge detachment* between what the institution believes their academics should know, and what academics actually know with regards to these *knowledge regimes*. In reconciling gaps in their non-subject knowledge, academics will seek out trusted *knowledgeable communities* and *knowledgeable others* to provide the information they require in order to fill these knowledge gaps.

5.3. Summary

In this chapter, two sociomaterial theoretical frameworks, Actor-Network Theory and Non-Representational Theory, were used to analyse the professional learning experiences, encounters and engagements of the research participants. Each of the four vignettes presented sought to untangle and make visible the multitude of actors and networks that become assembled in constructing these particular enactments, relations and embodiments of academic professional learning.

The research participants' working day is variously interrupted or disrupted through the materialising of *institutional noise*. This noise can take the form of technology, processes, discourses, documents, and *(un)scheduled visitations* from colleagues, peers and students, particularly where participants are expected to share office space with other colleagues. As technologies become more mobile and portable with greater access to university-based online services, like e-mail, the participants become tethered to the workplace, irrespective of their location or contractual hours. The participants become *technologically* and *temporally entrapped*.

In trying to escape and hide from the burgeoning *institutional noise*, the participants will seek to construct a *surrogate* or *transient workspace*. This will enable the participants to engage with a variety of professional learning and academic work-related activities that they are unable to perform in the work place. A particular type of *transient workspace* that has emerged, is the *human-automobile* hybrid. As the participant undertakes a car journey to and from work, the car and a number of other actors, like the in-car radio, facilitate a range of professional learning and academic work-related activities.

Most of the participants profess a love for their discipline and will prioritise their professional learning around their subject. However, as new *knowledge regimes* are introduced (e.g. employability, sustainability), there is an expectation by the institution that academic staff will engage with it. This creates a *knowledge detachment* between what the institution

believes their academics should know, and what academics actually (or want / choose to) know. As such, the participants will seek out trusted *knowledgeable communities* and *knowledgeable others* to fill those gaps emanating from the new *knowledge regimes*.

Through this chapter, I have sought to introduce a new vocabulary that is able to articulate sociomaterial activity in the professional learning of academics in Higher Education. Furthermore, through the application of *aspectuality*, I have attempted two ways of expressing sociomateriality, that of the social *and* material worlds.

In the next chapter, I will emphasise the project's original contribution to knowledge. I will introduce the reader to a notion that I call *coalescent space*, which is constituted with a set of interrelated properties that are conducive for professional learning. These I label as: *transient*, *affective*, *controlled* and *immersive*. Through the introduction of the concepts of *knowledgeable other* and *knowledgeable community*, I argue that the participants adopted a connectivist approach to their professional learning, where the route to knowledge is more important than the knowledge itself. I will offer a more detailed commentary concerning the most original aspects of the study, the four interrelated spatial properties and the 'knowledgeable other', in terms of their implications for practice and further research.

06

DISCUSSION

6.1. Introduction

In the most recent *Student Academic Experience Survey* reports (Buckley *et al*., 2015; Neves & Hillman, 2016; 2017), students placed a high premium upon HE academics being able to teach and/or having the relevant professional experience. An academic being research active did not feature highly in the list of attributes that students sought in their academic tutors, the exception being Russell Group university students. In the academic staff questionnaire, the respondents (n: 182) felt that their professional learning was *currently* prioritised towards:

1. Learning & Teaching (42%)
2. Research / Subject Discipline (26%)
3. Leadership & Management (23%)
4. Administration (6%)

However, given a choice, the respondents reported that *they* would prioritise their professional learning differently:

1. Research / Subject Discipline (51%)
2. Learning & Teaching (28%)
3. Leadership & Management (12%)
4. Knowledge Exchange (5%)

There may be a sense that academics feel a lack of agency in determining their professional learning trajectories, some tough decisions may need to be made in prioritising what is learnt (i.e. subject discipline knowledge versus institutional policies).

The participants in the study highlighted a number of areas that they perceived as being barriers towards their professional learning. Unsurprisingly, time was cited as being a major obstacle (see *Section 6.2.4*). Secondly, having access to a space that was conducive to their professional learning proved problematic when sharing office space with other colleagues (see *Section 6.2.2*). Finally, locating someone or something that could 'fast track' the non-subject discipline knowledge they needed in order maintain their professional responsibilities and remain authentic in front of their students (see *Section 6.3*).

6.1.1. Section Overview

In the previous chapter, I presented four vignettes intended to demonstrate the complexities involved in engaging with academic professional learning from the perspective of the research

participants. This was followed by an analysis of the phenomena described in the four vignettes by locating the findings within a wider national and global context.

This chapter consists of three sections. The first section offers an original contribution to theoretical knowledge by proposing that *coalescent space* is constituted with a set of interrelated properties that are conducive for professional learning. I label these properties as: *transient*, *affective*, *controlled* and *immersive*. The second section also offers an original contribution to theoretical knowledge by introducing the concepts of *knowledgeable other* and *knowledgeable community*. The *knowledgeable other / community* offers academics a trusted point of information. This enables the academic to address gaps in their non-subject discipline knowledge (e.g. new assessment procedures, embedding employability within the curriculum) that are vital in maintaining their professional responsibility towards their colleagues, students and the institution. I go on to argue that for the participants of the study, professional learning adopts a connectivist approach to learning, where the route to knowledge is more important than the knowledge itself. In the final section, I focus on two of the most original aspects of the thesis, the *four interrelated spatial properties* and the *knowledge other*, and discuss their implications for practice and further research.

New insights, such as *coalescent space* and the connectivist approach to acquiring knowledge, will be contextualized within the boundaries of academic professional learning. Possible explanations for the findings and resulting implications will be given, adding to the body of knowledge to the professional learning of academics in HE.

Based on the data analysis (see *Chapter 5*) of the four work strands, the key research findings were:

1. Whilst on campus, academics encounter a variety of technologies, processes, discourses, documents and people that interrupt and disrupt their working day. This disruption prohibits academics from doing those tasks and activities that they perceived to be important to them. I introduce the concept of *institutional noise* to describe this disruption.

2. Academics escape this *institutional noise* by seeking solace in hidden spaces away from their place of work. I introduce the concepts of *surrogate* and *transient workspaces* to describe these hidden spaces that are being occupied for professional learning and academic working. More importantly, academics have a sense of control over these workspaces.

3. The car and the journey to and from work is an important *transient workspace*. Within this space, the academic is given an invaluable window of opportunity to learn, work, think aloud, or rehearse lectures.

4. Academics will seek out trusted *knowledgeable others* and *knowledgeable communities* to 'fast track' and reconcile gaps in their non-discipline knowledge (e.g. employability, sustainability) to enable them to maintain their professional responsibilities. In particular, academics have developed 'mental maps' or routes to locating that knowledge.

6.2. Space and Professional Learning

6.2.1. Introduction

Time is often cited by academic staff as a barrier to their engagement with professional learning, as noted by 69% (n: 126) of the respondents from the academic staff questionnaire. However, the second key research finding (see *Section 6.1* above) from this study suggests that space plays a significant role in the professional learning of academics in HE. During the photovoice process, the participants recognised that certain spaces were increasingly becoming barriers to their professional learning. Two inter-related dimensions[17], *space* and *time*, were recognised as being factors that either helped or hindered the participants' professional learning.

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[17] In this context, I use the term *dimension* to denote that something is an aspect or feature of a particular situation or condition.
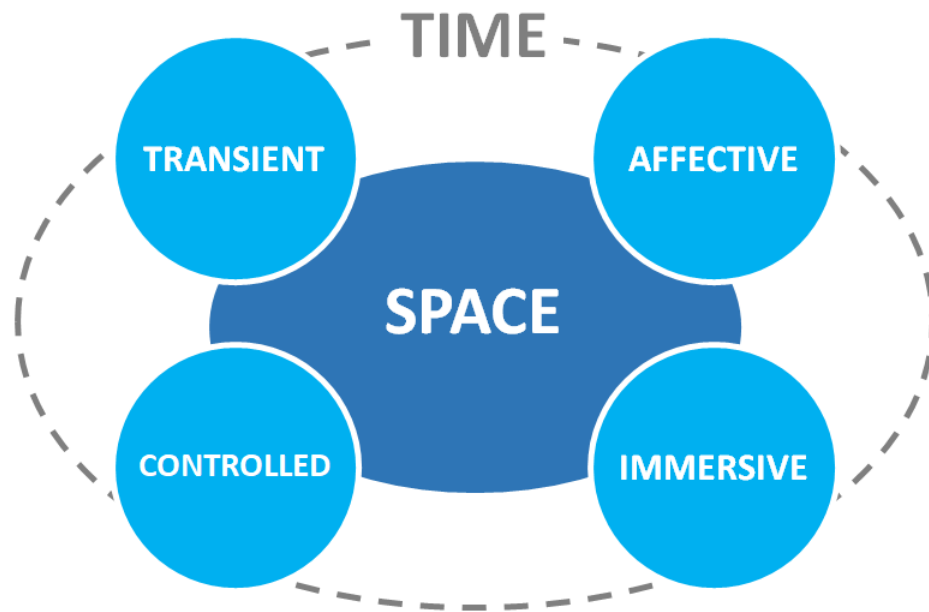
Figure 4: Spatial properties that influence professional learning

However, a set of interrelated spatial properties began to emerge from the sociomaterial analyses that gave some hint as to why some spaces were more conducive for professional learning than other spaces. An original contribution to theoretical knowledge concerns these spatial properties. I conceptualise these spatial properties as *transient*, *affective*, *controlled* and *immersive* (see *Figure 4* above). These spatial properties are important because they describe the dynamics that are taking place within a given space that supports learning. I will now discuss these spatial properties in some detail, in doing so responding to the first research question: *What are the conditions that enable or encumber the professional learning of academics in higher education?*

6.2.2. Dimension #1: Space

Space, for the participants in the study, was commonly cited as either enabling or encumbering their professional learning. Some scholars express space through the abstract language of mathematics, which is Euclidean (parabolic geometry), Non-Euclidean (hyperbolic geometry) or Cartesian (co-ordinates) in character (Law, 2002). Spatial notions of distance, size, shape, direction, proximity and position are reified, giving space physicality. Conversely, other scholars view space as nothing more than a "mechanical and mathematical representation of reality" (Merrifield, 1993, p. 518). This mechanistic vision of the world was greatly influenced by Cartesian mathematics and Newtonian physics wherein space is perceived as being an inert empty container independent of physical phenomena.

Spatial theorists have developed a sophisticated treatment of space arguing that physical space is not neutral, it is imbued with a political (Dikeç, 2012; Massey, 1992), economic (Harvey, 2001; 2009, [1973]), and social (Lefebvre, 1991; Soja, 1980; 1996) dynamic, where interactions between different people occur across different scales of power.

In adopting a sociomaterial approach to space and professional learning, Acton (2017) notes that:

> ... [sociomateriality] carefully illuminates the conjuncture, tensions and lived practice of spatial-social relationships. It allows attention to focus on embodied learning and teaching, the synergies between place and people, the relations between the imagined affordances implicit in infrastructure design and construction, and the experienced realities of the people who inhabit those spaces in practice. (p. 2)

In other words, sociomateriality challenges the perception that academics are somehow separate entities that are disconnected from the spaces they occupy, the objects they use, and the people they are present with. Rather, sociomateriality considers the inherent corporeality of social life and its relations and that "materials *participate* in knowledge practice[s]"(Mulcahy, 2013, p. 1278, original emphasis). According to Acton (2017), sociomateriality strips away this illusion of separation that is said to exist between the human and material domains, and derives a theory that argues for an intrinsically inseparable relational ontology of the social and material. From this perspective, the function of space is not to act as a "container" for human occupation, or provide a setting for action; rather space is lived, enacted in the relations between people, practice and place (Fenwick, 2015; Massey, 2005; Mulcahy *et al.*, 2015). Massey (2005) argues that space is "open, multiple and relational, unfinished and always becoming" (p. 59). I have drawn upon these sophisticated conceptualisations of space as part of my study to introduce an original contribution to theoretical knowledge - the concept of *coalescent space*.

6.2.3. Coalescent Space

There is a danger that space, especially one used for professional learning, is only perceived as a physical space. Yet, a space for professional learning can be enacted, fluid, relational and emergent, constituted with materials that can be physical, digital, psychological, and biological in character. All these spatial configurations may influence an academic's engagement with professional learning. These multiple spatial configurations do not interact with each other in isolation, they overlap, become entangled, and coalesce. Geographically speaking, these

multiple spatial configurations can be in close proximity or quite dispersed to each other. I conceptualise this particular spatial formation: *coalescent space* (see *Figure 5* below).
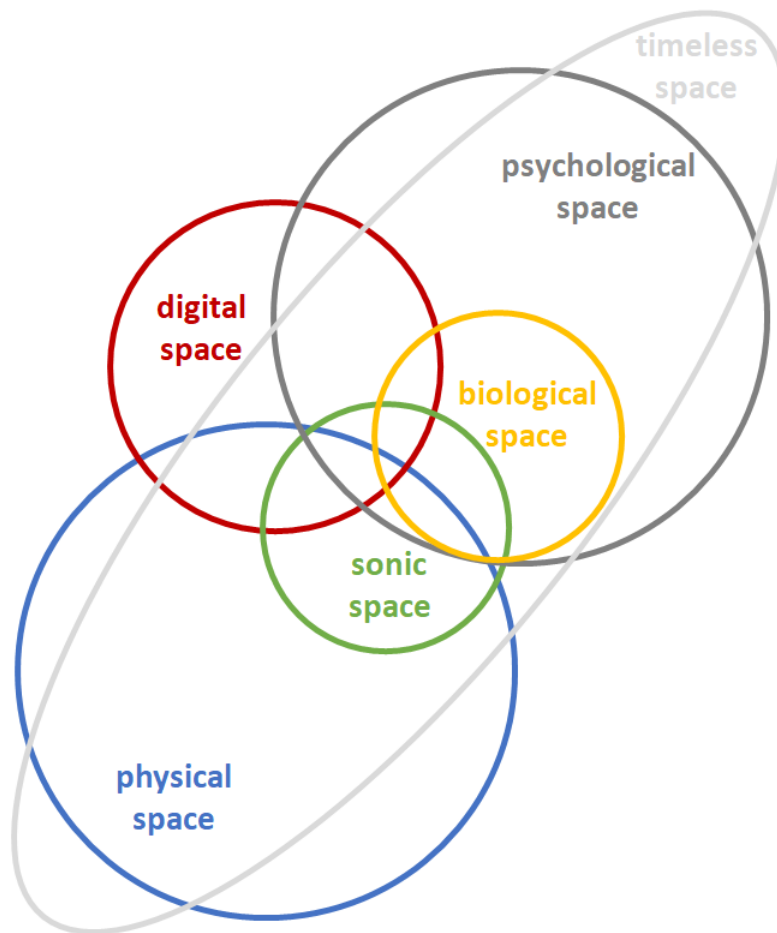
Figure 5: A simplified 2-D diagrammatical example of coalescent space

In the diagram above, I draw upon the different spatial configurations that were identified in the findings and analysis chapter (see *Chapter 5*). I will now clarify what I mean by each of the terms featured in the above illustration.

- *physical space* – This is an area that people naturalise through patterns, behaviours and communications. This type of space emerges when a person becomes aware of what separates them from an object, or what separates two objects. This is when a physical space is conceptualised. In the context of professional learning, this type of space (e.g. office, classroom) is often used for the learning process. However, obstructions, like *institutional noise*, inhibit the academic's ability to learn;

- *psychological space* – Broadly speaking, this concerns how a person cognitively perceives and responds to the world around them, which enables them to solve inferential problems or to navigate themselves within that world. How a person perceives and responds to the world is shaped by an array of 'psychological filters' that include cultural influences, biographical experiences, various life, work, learning and social contexts. From a professional learning perspective, these 'psychological filters' influence a person's decision whether to engage with professional learning or not. Even a person's emotional state may positively or negatively affect the outcomes of professional learning engagement (Núñez & Cooperrider, 2013; Schiller *et al.*, 2015);

- *biological space* – This relates to a person's body and how they are able to physically and sensually orientate their body to react and interact with the world around them. How a person reacts and interacts with the world is dependent upon their body's general health and condition. For example, various physical, sensory and neurological impairments or medical conditions can potentially affect how that person interacts with the world. From a professional learning stance: how an individual develops their brain over time will determine the way the brain can create, recreate and strengthen (or weaken) certain areas of its *connectome*[18]. This may lead the individual to react to stimuli in an almost pre-determined way, which could limit their learning potential (Barnacle, 2009; Radtke & Skouge, 2012; Seung, 2012; Ireland, 2015);

- *digital space* – This refers to what is displayed on the screen of a digital device (e.g. desktop computers, laptops, tablets, or smartphones). This space can take on a multitude of forms, such as data, digital artefacts (e.g. images, movies, text, websites), and software (e.g. word-processor, mobile apps). In the context of professional learning, this space can facilitate synchronous and highly interactive functions (e.g. chat, social networking), but can also enable asynchronous functions (e.g. e-mail, discussion forums) (Kitchin & Dodge, 2011; Weller, 2011a; Sumartojo *et al.*, 2016).

- *sonic space* – This space concerns a person's auditory experience and how this may affect their engagement with professional learning. It is bound to the person as a

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[18] A *connectome* is a map of connections between a brain's neurons - it could be likened to a 'wiring diagram'. Like a fingerprint, a human connectome is unique to each individual, blending genetics, environmental influences and life experiences. This 'map' gets written and rewritten as individuals learn, mature and age (Seung, 2012; Perkel, 2013).

listener and to the state of their auditory surroundings. The individual is in a complex sonic exchange with their environment, making, muting, and altering sound. Thus, not only does it entail what that individual may be hearing, but where they are hearing it. From a professional learning perspective, this space can either enable or encumber a person's ability to engage with any professional learning activity (Fluegge, 2011; Revill, 2016); and

- *timeless space* –This is a space where all sense of time and self-consciousness is lost. The person is cocooned within this space enabling them to be entirely focused upon a particular activity or task at hand. The person will make use of a variety of visual, auditory, olfactory, and/or haptic artefacts to stimulate and create the conditions necessary in generating this space. In the context of professional learning, this space could enable the productivity of uninterrupted and focused learning (Csikszentmihalyi, 1990; Mainemelis, 2001; Ylijoki & Mäntylä, 2003).

To illustrate coalescent space in action, I will draw upon an example involving one of the participants in their capacity of a doctoral supervisor. The participant shares a PhD student with another supervisor who is located in one of the European Union (EU) member states. During the photovoice slideshow, the participant talked about their doctoral supervisory role and the opportunities and challenges that it entails. The participant felt enormous pride in being a doctoral supervisor and held strong beliefs that such an important responsibility was a privilege. The opportunity to learn something new from their PhD student and the second supervisor was something that they looked forward to it.

In the participant's photovoice slideshow, the first thing to note is that the participant and their PhD student (two human bodies) inhabit a *physical space* through their regular face-to-face doctoral supervision meetings that often take place in the participant's office. In this physical space, a dialogue ensues between the participant and their student. There is an exchange of information, knowledge and experience between them. Three spatial configurations begin to emerge here: *sonic space*, *biological space* and *psychological space*.

The space becomes sonic through the spoken word between the participant and their student. The physical configuration of the room will influence the quality of the acoustics, as indeed any noises that are occurring outside of the room, such as road works or noisy people. The space is biological as two human bodies respond to the stimuli created by the room, in terms of acoustics, lighting and temperature. This stimuli is simultaneously generated by the

physical presence of the two human bodies in the room (e.g. eye contact), and the anticipation and outcome of the event. For example, the student may be asked to redraft a thesis chapter. The space becomes psychological as the participant engages their student into a discussion on the student's work so far. There may be some emotional attachment to that work if it has been particularly challenging for the student. The participant will bring to bear their own knowledge and experience in supporting their student. The discussion may draw upon previous discussions that invoke memories, or the discussion looks to the future that may invoke excitement or anxiety. In evoking these affective issues, the atmosphere (see *Section 3.6.3.2* for discussion on the term) in the room may change the relations between the participant and their student. This change in atmosphere will precipitate a change in the space, from one that is warm and supportive to one that is cool and hostile.

At some point in the face-to-face supervisory meeting, the participant introduces a mediator (see *Section 3.5.2.3* for a description) in the form of their smartphone. The smartphone is a mediator because it is changing the way this particular supervisory meeting is being conducted: a second supervisor is engaging with the supervisory meeting process from a remote distance. In this instance, another spatial configuration emerges in the form of *digital space* as the participant launches their *WhatsApp* mobile app to relay a series of questions and pointers, using the institution's Wi-Fi connectivity, to the second supervisor who is located geographically at a distance. The meeting now adopts the form of *face-to-face-to-app* supervisory meeting. A new arrangement has occurred between two human bodies and a non-human body (with the third human body occupying another physical space elsewhere). Whilst the relation between the supervisor(s) and student has not changed, the means of communication has shifted to include technological mediators, that of the smartphone and the *WhatsApp* mobile app. Although the remote supervisor may not be physically present in the room, they nevertheless have a form of presence that allows them to engage in the meeting. Through the performance of a doctoral supervision meeting, a number of spatial configurations, as stipulated, have emerged to form a *coalescent space*.

This coalescent space is not neutral. Power relations can exist between supervisor(s) and student, between supervisor and supervisor, and possibly between the participant and the participant's co-worker who may not be willing to give up the office space. These power relationships are not just confined to human-to-human actors, these can also include human-to-non-human actors (such as the person constantly checking their smartphone), and non-human-to-non-human actors (such as a computer virus affecting the performance of a desktop computer). Furthermore, these power relations are not restricted to a particular

space (e.g. an office), modern communications technology, such as video conferencing, voice-over-IP, and social media, can closely connect geographically distributed actors with each other (Müller, 2015). These power relations can also be between competing ideas and discourses, such as a series of knowledge transactions taking place between the supervisor(s) and their student. Though these transactions can be reciprocal, the PhD student can contribute to the professional learning of the participant by sharing new knowledge that the student has recently acquired. Entwined with these conceptualisations of space is the notion of time. This relationship with time suggests that space is not something static and neutral, but is forever evolving even when the space is unoccupied (Massey, 2005). For Massey, space is a means to consider relationality and connection amongst various material, immaterial, human and non-human elements. I will now present the next original contribution of the study, those four interrelated spatial properties conducive for professional learning. These are: *transient*, *affective*, *controlled* and *immersive*.

6.2.3.1. Spatial Property #1: Transient

The *Oxford English Dictionary* provides four major definitions of the adjective "transient". They are:

1. It describes something that is not permanent or durable, i.e. it is *temporary*.
2. It implies that something is *migratory*; it passes through a place without staying in it, or stays only for a short period. It is akin to the first point above.
3. It suggests that something can *transcend*, as it is able to exceed beyond its possible limits.
4. There is a notion of *transfer* with something passing or flowing from one thing to another (OED, 1989, emphasis mine).

Each of these definitions provides a different account of what it means for something to be transient. In the context of *coalescent space*, these definitions offer a useful way to describing how different spatial configurations emerge and coalesce. In what follows, I briefly explore each of these definitions within the context of this spatial property. I will illustrate this with examples taken from the participants in the study.

One participant makes use of a café for professional learning or academic work. The café comes with table, chairs and wi-fi connectivity enabling the participant to use their laptop, tablet or smartphone devices. The café space performs the function of an office workspace or study. It is both *temporary* and *migratory*. It is temporary in the sense that the café space is

predicated by the variability of what can be achieved in that space and availability as to when that space can be occupied. It is migratory because the participant might choose to spend a few moments in the café catching up with e-mails or for a few hours writing an article. Furthermore, the participant may choose not to visit that café space again, opting to visit another café space. The important thing to note here is that this space does not *belong* to the academic. In an office environment, most people will furnish their office space with personal artefacts (e.g. photograph of family members, postcards from colleagues and students). These personal affects give the space an identity and signals to others that this particular space belongs to someone - it marks out someone's territory within a given space (Brown, 2009; Brown *et al.*, 2014). When academics leave their office space for the day, they can come back to it the next day. Temporary spaces, like hot-desking areas, rarely belong to someone.

Where participants are able to find some free time, they will make use of *psychological space* to try to work through ideas and issues. Through their various internal monologues, the initial idea or issue *transcends* into a resolution, a product or a call to action. The academic will instigate a slice of time in which to think through an issue or idea in an attempt to solve the issue or develop the idea further. In psychology, this is known as the "incubation period" (Segal, 2004; Zhong *et al.*, 2008; Sio & Ormerod, 2009; Gilhooly *et al.*, 2013; Sadler-Smith, 2015; Gilhooly, 2016; Sio *et al.*, 2017). During this "incubation period", the unconscious mind will continue to work on the conundrum in the background, resulting at some point in time, in a resolution.

The fourth transient quality concerns the notion of *transfer* where something can pass or flow from one thing to another. For an academic, this could mean reading a journal article on the screen of their mobile device (*digital space*). This same journal article is then printed out on paper because the academic wants to make annotations and highlight key text (*physical space*). Two forms of transfer are occurring here. The first involves the transfer of the digital version of the journal article (e.g. screen) into an analogue version of the same article (e.g. paper). The second involves the journal article transferring from a space that is digital (i.e. non-tangible) into a space that is physical (i.e. tangible).

Moreover, this notion of transfer could have an affective quality (to be discussed later) whereby a particular sound (*sonic space*), taste or smell (*biological space*) triggers an idea or a memory (*psychological space*). This notion of transfer can extend towards energies or intensities that can happen within a space. Consider, for example, the atmosphere (again an affective property) that descends in a room during the intense discussion that took place

between the participant and their PhD student as exciting ideas are exchanged and emotional sensibilities shared.

6.2.3.2. Spatial Property #2: Affective

As discussed in Section 3.6.3.1, *affect* is an important philosophical concept within NRT and more broadly in sociomaterial approaches. It plays an important part in an academic's engagement with professional learning as illustrated by the following example.

For the participants, affect is experienced during their various engagements with professional learning through their everyday interactions with spaces and objects, or performing prosaic practices (e.g. drinking coffee). Something as simple as absent-mindedly handling a wooden pencil, drinking a cup of coffee or smoking a cigarette, could place the academic in the right mindset to be able to fully focus upon the task at hand. How a particular space has been configured to support professional learning (or, indeed, academic work) is also important, such as a desk and chair facing the window that overlooks the garden. The notion of a room's ambience to facilitate learning is not a new idea, having featured in studies on classrooms and, more recently, learning spaces (Lovat *et al*., 2011; Crook & Mitchell. 2012). These studies extol the values of a room's environmental (e.g. lighting, temperature) and aesthetic (e.g. decor, cleanliness) appeal that help to precipitate learning.

Where there are areas of natural beauty or green spaces, people can be affected by these green surroundings. They can gaze on in "effortless attention" the "soft fascinations" of clouds moving across the sky, trees rustling in the wind, the smell of wet earth, rain creating ripples in the pond, or the sound of birdsong. The "effortless attention" and the "soft fascinations" can help replenish an individual's cognitive and attentional capacities. This phenomenon is known within environmental psychology as "attention restorative theory" (ART) (Kaplan & Kaplan, 1989; Kaplan, 1995; Berman *et al*., 2008; Felsten, 2009; Wright *et al*., 2016). Some of the participants make a special visit to some of the green spaces dotted throughout the university's campus and are becalmed by it. As one participant especially noted:

> It's great to see a bit of the natural world. A bit calm and green and fresh air ... you can put things into perspective and being able to sort of breathe, and then go back to what you're doing before you got a bit overwhelmed by it all.

The participant alludes to the notion of *spaciousness*[19] as having an important positive, affective experience upon them. Conversely, spaciousness has the potential to elicit an intense reaction within a person in the pathological extremes of agoraphobia and claustrophobia. Thus, the affective properties of space in terms of colour (e.g. green vs. grey), shape (e.g. curves vs. angles), spaciousness (e.g. small vs. large), comfort (e.g. soft vs. hard), temperature (e.g. cold vs. hot), and light (e.g. bright vs. dark) will either positively or negatively impact upon academic's engagement with professional learning.

6.2.3.3. Spatial Property #3: Controlled

A recurring theme from the findings (see *Chapter 5*) concerns the participants' desire to *escape* from the various interruptions that occur throughout their working day. In what I call *institutional noise*, these interruptions manifest themselves in the following ways: e-mails, telephone calls, students or colleagues who enter the office to visit them or their co-worker, requests to attend meetings, or provide comment on an important document by the end of the working day. The participants seek refuge in spaces that they feel they have some control over. In the workplace office, the participant perceives having little or no control over their working (and learning) environment, such as adjusting light, temperature or noise levels.

This sense of control draws upon the inclusion / exclusion element that is often articulated in Actor-Network Theory. The academic is able to control elements within their physical working space in order to achieve the necessary conditions to enable them to fully focus upon the task at hand. This is achieved by including or excluding those things that will help facilitate those optimum conditions. For example, an object can be included into a particular space (e.g. a set of earplugs), or be excluded from it (e.g. a smartphone). This control can either be fleeting (e.g. setting the smartphone to silent mode) or protracted (e.g. the use of earplugs to reduce noise levels in a given space). In this example, the academic has sought to remove those distracting sounds from their working space so that they can fully concentrate on the problem or task at hand, without the risk of interruption. The space the academic is occupying is being controlled by them through their various interactions with objects, tools and devices that reside within that space, enabling the academic to achieve the desired outcome (i.e. to achieve silence).

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[19] Spaciousness is a spatial property often associated with having ample room in which to move, and is connected with a sense of being free (Dane, 2016). In the context of a learning environment, spaciousness enables freedom, creativity, spontaneity and serendipity. Learners are able to move unencumbered around the room that benefits learner interaction and communication (*ibid.*).

For example, I have a hearing impairment and wear digital hearing aids in both ears. I would be lost without them as a large part of my job involves talking to people and attending meetings. However, there are times when the noise becomes too much. I do not need to ask the people who share the office with me to be quiet, I simply pull the hearing aids out of each ear and the sound is dramatically reduced. That simple act of pulling the hearing aids out of my ears has enabled me to control (to some extent) that noise.

However, the notion of inclusion and exclusion is more complex than a simplistic binary of *in* and *out* would seem to suggest (Nahon, 2011). New processes and practices have seen a shift in power dynamics among actors in networks. Actors with "gatekeeper privileges" are able to determine which actors can be "in" or "out" of a given network (*ibid*.). For example, a room that is being kept cool by a centrally controlled air conditioning unit, which prevents the occupants from regulating the room temperature themselves. This can make controlling a space quite challenging as the academic seeks out those gatekeepers to negotiate a course of action (i.e. turn the temperature up because they are cold). Alternatively (if at all possible), the academic may include other actors that they have some control over (i.e. wearing a woolly jumper) to facilitate their desired outcome (i.e. to keep warm).

6.2.3.4. Spatial Property #4: Immersive

From 1999 to 2006, I worked as a software engineer and experienced rare moments of intense, uninterrupted immersion. There was a strange sense of being inside the code that I was working on. I was no longer conscious of time or my immediate surroundings, the only thing that mattered was the code. Similar experiences amongst software engineers and computer programmers have been reported elsewhere (LaToza *et al*., 2006; Meyer *et al*., 2014; Minelli *et al*., 2015; Müller & Fritz, 2015; Züger & Fritz, 2015).

This notion of immersive*ness* is not new in the realms of work, learning and gaming. Briefly put, the individual loses all sense of time and self-consciousness as they become entirely involved in a particular activity or task at hand. This intense mental state is said to unlock the doors to creativity and joy, and has variously been labelled as "ecstasy" (May, 1975), "flow" (Csikszentmihalyi, 1990), "timelessness" (Mainemelis, 2001) and "timeless time" (Ylijoki & Mäntylä, 2003). In this thesis, I have referred to this "immersiveness" as *timeless space* whereby some of the participants have placed themselves in a solipsistic bubble with the aid of objects and devices that have *immersive induction* properties, such as headphones playing music or the comfort of a chair.

The participants use a variety of visual, auditory, olfactory, and/or haptic stimulation to create this embodied *timeless space*. Here, one of the participants talks about how the *affective* properties of the music and the *controlling* properties of the headphones are combined to create a sense of immersive*ness* for them:

> I've got my headphones because I like listening to music when I do my work as well. [Music] is very important to me so I can sort of escape the world ... and get into my own zone. Even though I have the music going in my ears, I'm sometimes not actively listening to the music. I'm simply using it to take away any external sound layer, to block out people living in the house where they might disturb me.

This immersive state is predicated upon the academic not being interrupted, which occurs with *institutional noise* (in the workplace office) and, to some extent, *domestic noise* (in the home). Some interruptions are desired, others might incur a high cost towards the academic. These "high costs" can include long resumption lags, slower performance, negative emotions and an increase in errors due to the interruption happening at inopportune moments (Czerwinski *et al.*, 2003; Bailey & Konstan, 2006; Züger & Fritz, 2015).

Over the last decade, many HEIs have created new types of workspaces for their academics, with the desired aim for the:

> ...facilitation and promotion of collaboration and knowledge flow between occupants - the intention being that this will ultimately lead to greater creativity and innovation in research and teaching, which will in turn, have a beneficial impact on society. (Parkin *et al.*, 2011, p. 31)

Given a choice, most, if not all, academics would like to have an office space of their own. It does conjure up the oft-used image associated with academia, that of the ivory tower (Wolff, 2015). The term has become a metaphor that signifies that it is a "place that is protected, a place of privilege and authority and a place removed from the outside world" (Fitzgerald, 2012, p. 114). For professional learning and, indeed, other areas of academic work, academics need a work environment that can equip them with the necessary solitude to support quiet concentrated learning, work and reflection (Parkin *et al.*, 2011; Baldry & Barnes, 2012; Davies & Lee, 2013; Kim & de Dear, 2013; Al Horr *et al.*, 2016). Such a space allows the academic to become immersed in the task at hand, which is vital to the production of knowledge.

6.2.4. Dimension #2: Time

Time was often cited by the participants in the study as being a barrier to their engagement with professional learning. For some researchers, the temporal nature of sociomateriality can be unclear because many of the assumptions around sociomateriality (e.g. that of inseparability) lack any notion of time. It is vague as to whether those assumptions relate to a point in time or to an extended period (Alter, 2012). This vagueness is particularly pressing as concerns have been raised around the accelerated pace of modern life and our inability to keep up with this pace, particularly within the context of academic life (Gornall & Salisbury, 2012; Rosa, 2013; Smith, 2015; Vostal, 2015). Advancements in technology, communications and transportation have enabled a set of academic activities, processes and operations to be produced in greater abundance, more quickly, and arguably more efficiently, in what Harvey (1990) labels as "time-space compression" - the combined process of accelerating time and shrinking distances.

In an attempt to make some sense of the temporality associated with academic life, scholars have introduced categories of "temporal structures" as a way to begin to delineate how academics are consuming, negotiating and mapping out their time (Noonan, 2015; Ylijoki & Mäntylä, 2003). For example, Ylijoki and Mäntylä (2003)[20] proposed four broad time perspectives that both influenced and conflicted with academic work. Moreover, a number of external and internal drivers are beginning to have a demonstrably impact upon an academic's time.

These external drivers include the recent higher education legislation (Higher Education and Research Act 2017) and the UK's proposed withdrawal from the EU (European Union Referendum Act 2015). For example, under the *Higher Education and Research Act 2017*, academics may need to invest time to ensure their subjects are TEF-compliant. In delivering accelerated and/or apprenticeship degrees, universities may have to look at different delivery models that might include academics working in the evening. The impact of the *European Union Referendum Act 2015* on academics might mean investing time in learning a subject area that is unfamiliar to them to ensure courses are able to run. This has been brought about because an EU colleague who was an expert in this particular subject area has returned to their native country. The internal drivers permeate through Higher Education Institutions as

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[20] Ylijoki and Mäntylä (2003) seminal journal article proposed four time perspectives: *Scheduled Time*, *Timeless Time*, *Contracted Time* and *Personal Time*. They argued that there were conflicts between the four time perspectives, which were "closely linked" to the seismic organisational shifts currently experienced by Higher Education Institutions. They were mindful that these four perspectives did not adequately captured "all variations and idiosyncrasies in academics' work-related time experiences" (p. 69).

they enact HE reforms that introduce various accountability, auditing and performativity regimes (Mäkitalo, 2012) which are predominately data-driven (Anderson, 2017). Such technologies of performativity include *Key Performance Indicators* (KPI), *Research Excellence Framework* (REF), and *Teaching Excellence and Student Outcomes Framework* (TEF).

There are other instruments of managerialism, such as fixed term contracts, timetabling, funding deadlines and workload allocation forms, that will restructure and reclassify how an academic's time is constituted (Malcolm & Zukas, 2009). Other institutional narratives such as "turnaround time" (i.e. the time taken to return feedback to students on their assignments) and "contact time" (i.e. the time spent teaching and supporting students) suggest that externally imposed "temporal structures" are being created for particular purposes. As Ylijoki and Mäntylä (2003) argue:

> ...temporal structures in organizations repress individuals' experiences and impose discipline and standardized requirements on them. (p. 57)

In the study, the participants imposed their own "temporal structures" loosely based upon the types of activity they would engage in, which arguably is determined by "clock time". The morning was often reserved for activities where the participants needed to be highly attentive and focused. The afternoon and evening periods tended to elicit activities that were more creative or exploratory. Most of the participants will adopt a pragmatic just-in-time strategy in how they will engage with their professional learning, usually when the participant needs to learn something for a particular activity or future event. The journey to and from work or another site offers the opportunity to engage in activities that can be described as "thought-time" (Noonan, 2015). In describing thought-time, Noonan (2015) suggests it is where:

> People [who] 'lose themselves' in the object of thought or activity … thought-time [has] goals, but the goals are emergent, not imposed; conclusions are discovered by following where the ideas themselves lead. (p. 121)

This "lost in thought" property of thought-time relates to the spatial property I conceptualise as *immersive* (see *Section 6.2.3.4*). The academic may, sometime in the near future, interact with other authors or lecturers within their own field by reading an article that was written in 2007 or watching a video recording of guest lecture that was given in 2014. Knowledge experts from the past can reach out to us in the present and beyond. For the participants, the use of software, like *Microsoft® Outlook* (Microsoft, 2017), can aid in the structuring and organising of their working lives: which meetings they need to attend, a reminder to pick up a birthday card, or an alert for an impending deadline for a journal article. For some

participants, they have used Outlook to set aside some protected time to engage in professional learning. These temporal incidences will have a sociomaterial impact upon a variety of human and non-human actors who are implicated in "reimagining future possibilities, rethinking past routines, reconsidering present concerns" (Kaplan & Orlikowski, 2013, p. 973). Multiple, interdependent, and sometimes conflicting perspectives will emerge in which possible futures are shaped. These in turn have been shaped by past understandings and present concerns (*ibid.*).

6.3. Connecting Knowledge and Professional Learning

6.3.1. Introduction

[A]n academic who stops reading and educating themselves stops being an academic.

The above quote is from one of the participants. At its heart is one of the defining features of being an academic: a lifelong commitment and devotion to professional learning. The once traditional academic role encompassing the "holy trinity" (Finklestein & Schuster, 2001, p. 2) of teaching, research, and administration, now incorporates more complex and diverse roles and responsibilities (Brew & Boud, 1996; Blackmore & Blackwell, 2003; Boyd *et al.*, 2015). The consequence of which means that academics have to learn new knowledge that often sits outside of their disciplinary area. It also means that they have to assimilate this new knowledge in order to do (and keep) their job.

In responding to the second research question: *To what extent does an academic give precedence to one form of professional knowledge (e.g. subject discipline) over another (e.g. institutional policy)?* I will also argue that professional knowledge is inextricably bound up with the material and social context in which it is acquired by introducing another original contribution to theoretical knowledge, that of the *knowledgeable other* and *knowledgeable community*. Furthermore, this professional knowledge resides neither in people's heads, nor in technology, rather it is knowing the route to this knowledge that is more important than the knowledge itself (Hilaricus, 2011), thus suggesting it is a form of *connective knowledge* (Downes, 2007).

6.3.2. Professional Learning: Towards A Pragmatic Approach

> So as things come up ... [it] seems to be my approach that when I need to do something, I will do it.

Many of the participants took a pragmatic (or strategic) 'just-in-time' or a 'need-to-know' approach to their professional learning, as noted by a participant in the above quote. However, some expressed the view that professional learning tended to be a luxury or a 'guilty pleasure'. The demands being made upon their time, such as marking assignments, preparing lectures or writing research bids, take precedence as these activities are perceived to be more important because it affects others (e.g. students, colleagues). It was clear from the findings that most of the participants prioritised their subject discipline rather than develop skills and knowledge in other areas, particularly teaching. It was noted in the academic staff questionnaire, where respondents had expressed a preference for more research/subject discipline based professional learning (51%), rather than any professional learning related to learning and teaching (28%). This outcome echoed the early findings of Allan *et al.* (2003) and Zuber-Skerritt (1992).

At this research site, academics new to teaching in HE are contractually required to undertake a formal postgraduate qualification, in the form of a *Postgraduate Certificate in Academic Practice* (PGCAP)[21]. Academics who have been teaching full time in HE for a number of years are encouraged to apply for one of the fellowships with the *Higher Education Academy* (HEA) (HEA, 2011). Both the PGCAP and the HEA Fellowship count towards the *Higher Education Statistics Agency* (HESA) statistic on the number of academics who possess a teaching qualification (HESA, 2012). This emphasis towards teaching excellence in Higher Education by the UK Government has culminated in establishing a *Teaching Excellence and Student Outcomes Framework* (TEF) metric (HEFCE, 2017) as a means to:

> drive up standards of teaching and give students clear, understandable information about where they are likely to receive the best teaching and outcomes. (DfE, 2017, p. 4)

Future iterations of the TEF could include HESA's teaching qualification data (HESA & HEA, 2016). An emphasis may be placed upon academic staff to demonstrate teaching excellence and remain in good standing by engaging in continued professional development (CPD) process. This, in turn, could be linked to university appraisal processes for academic staff.

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[21] In other universities, this formal qualification may also be known as the *Postgraduate Certificate in Learning and Teaching in Higher Education* (PGCLTHE).

Academics may find that they are expected to do more formal courses around teaching and learning in order to deliver an excellent student experience, which would be reflected positively in the National Student Survey. It would seem that the needs of the students and the institution may take precedence over the professional learning needs of the academics, as academic staff will be confronted with making tough choices between what they are *required* to learn and what they *prefer* to learn.

Earlier in this section I suggested that most participants took a pragmatic approach to their professional learning. There are some participants who have successfully managed to include professional learning activities into their day-to-day working lives. Interestingly, these particular participants have come into Higher Education via the Public Sector route. Transitioning from a practitioner within the education or health services, to becoming a fully-fledged academic is well documented (McArthur-Rouse, 2008; Boyd & Lawley, 2009; Boyd & Harris, 2010; Saito, 2013; Logan *et al.*, 2015; Wood *et al.*, 2016). These participants feel supported by their colleagues, Faculty and the institution as a whole. They are able to manage and make time for professional learning activities, though these tend to lean towards learning and teaching rather than research. They have learnt to be resilient in their previous profession, which has been an important resource for them to draw upon in their new role of academics.

6.3.3. Knowledgeable Other: The Non-Human Kind

The fourth key research finding (see *Section 6.1* above) made clear that academics sought out advice, support and information from a *knowledgeable other* or *knowledgeable community* – these two concepts are another original contribution to theoretical knowledge. Whilst the participants have been explicit that these *knowledgeable others/communities* have been the result of interacting with another human, more implicitly, the participants have been interacting with non-human *knowledgeable others*, taking the form of databases, websites and mobile apps. Interactions have also occurred with non-human *knowledgeable communities* through the participants' use of *Twitter*[22] and MOOCs (Massive Open Online Courses). In this sense, learning may also reside in non-human entities (Siemens, 2005). There are some obvious associations with ANT that can be found here. Furthermore, this knowledge resides neither in people's heads, nor in technology (Hilaricus, 2011). Instead, a person develops a 'mental map' in knowing the route to where this knowledge is located. This notion of

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[22] Some Twitter accounts make use of a "Twitterbot". This is a piece of software that controls a Twitter account. The "Twitterbot" can autonomously perfrom various functions such as tweeting, retweeting, liking, following, unfollowing, or direct messaging other accounts. The "Twitterbot" is governed by a set of rules and algorithms that provide protocols for it to operate properly.

'knowing the route' can be located in a concept known as *connectivism,* which will be explained shortly.

Professional knowledge is inextricably bound up with the material and social context in which it is acquired. Sociomateriality is not concerned with the foundational categories of 'user', 'technology' or 'society'; rather it adopts a radical approach that asserts "[a]ll things - human and non-human, hybrids and parts, knowledge and systems - emerge as *effects* of connections and activity" (Fenwick *et al.*, 2011, p. 3, original emphasis). Simply put, taking a deterministic position is impossible because any object, idea, person, or thing is necessarily determined by other relations. We also need to recognise that human actions and desires "emerge through the myriad translations that are negotiated amongst all the networks – movements, talk, materials, emotions and discourses" (*ibid.*, p. 104). Thus, a sociomaterial perspective "refutes anthropomorphic centrality of human beings and human knowledge in defining the world and its relations" (*ibid.*, pp. 14-15).

6.3.4. Knowledgeable Other: Connectivist Undercurrents

In thinking about these knowledgeable others, the concept of *connectivism* offers a useful framework in which to view how these human and non-human entities operate in acquiring professional knowledge through professional learning (Siemens, 2005; Kop & Hill, 2008; Downes, 2012; Carreño, 2014). Connectivism is boldly introduced as the "learning theory for the digital age" (Siemens, 2005, p. 3), positioning itself after other epistemological paradigms: behaviourism, cognitivism and constructivism, and responding to the rapid proliferation of digital and networked technologies. Connectivism's genealogy can be located around theories of "chaos, network, and complexity and self-organisation" (Siemens, 2005, p. 3). More broadly it is linked to *connectionism* (computer science), *associationism* (philosophy and psychology), *graph theory* (mathematics) and *social network theory* (Downes, 2006).

The core principle of connectivism argues that for learning to occur, knowledge must first be actuated through the process of a learner connecting to, and providing information in, a distributed and networked learning community (Siemens, 2005; Downes, 2006; 2012; Siemens & Tittenberger, 2009). Furthermore, connectivism emphasises two primary skills that can contribute to learning: the capacity to find information, and the capacity to filter it (Kop & Hill, 2008). A key feature of connectivism is the formation of connections between points that constitute knowledge, and skilful learning involves the ability of a learner to construct and traverse networks (Jones, 2015). Siemens argues that "the pipe is more

important than the content within the pipe" (2005, p. 5). In other words, learning is more about "creating paths" to knowledge when required, rather than information acquisition itself (Anderson, 2010).

However, there are those who refute connectivism as being a learning theory (Kop & Hill, 2008; Mackness *et al*., 2010; Bell, 2011). A major concern is that connectivism is seriously underdeveloped as a learning theory, as such it has yet to be properly scrutinised through a peer review process (Clarà & Barberà, 2013a). Much of the connectivist literature seems to be elaborated on blog posts, non-peer-reviewed journal articles, and MOOC courses (*ibid*.). Conversely, what constitutes educational theory and its relationship with practice is contested (Thomas, 1997; Carr, 2006). However, Kop & Hill (2008) argue that Downes' (2006; 2007; 2012) work on connective knowledge offers an "epistemological framework for distributed knowledge which provides a strong philosophical basis for the connectivist learning framework" (Kop & Hill, 2008, p. 4).

Nevertheless, an absence of empirical studies has also been criticised (Bell, 2011). Those studies that have taken place have been mainly centred around MOOCs, with mixed results. Kartensi's (2013) literature review reported low success rates among participants. Similarly, Armstrong (2014) found a high dropout rate. Mackness *et al*. (2010) found that connectivism's network principles of *diversity*, *autonomy*, *openness*, and *emergent knowledge* may be compromised within the practice of a MOOC. However, other studies found that MOOCs had the potential to facilitate student autonomy and create learning communities (Kartensi, 2013). Personally, I think the current status of connectivism is underdeveloped and suggestive of a phenomenon rather than a learning theory (Barry, 2013). Despite connectivism's limitations, some scholars recognise there are some interesting aspects of connectivism that warrant further attention, specifically the conception of learning as connections and an ability to navigate networks (Kop & Hill, 2008; Bell, 2011; Clarà & Barberà, 2013b; Jones, 2015).

It is these notions of "learning as connections" and "navigating networks" that is important to the role of the knowledgeable other. In the connectivist model, the learning community is labelled as a *node*, which is always part of a much larger network. Nodes emerge from the connection points found on a network. These nodes can be organisations, libraries, web sites, mobile apps, journals, databases, or any other sources of information (Siemens, 2006), such as the knowledgeable other. Networks comprising of two or more nodes are connected in order to share resources. These networks may vary in size and strength depending on the amount

of information and the number of individuals traversing through a particular node at any one time (Downes, 2007).

Connectivism can slip into instrumentalist and anthropocentric sensibilities. However, by considering connectivism through a sociomaterial perspective, it can begin to offer a more nuanced view of learning. Connectivism has been the exclusive domain of the digital world where assemblages of online learning communities have tended to be very large. However, the idea of small-scale connectivism has been tentatively proposed elsewhere (Tschofen & Mackness, 2012; Mackness *et al.*, 2013). I believe connectivism can co-exist in the digital *and* analogue worlds. The role of the knowledgeable other and the knowledgeable community can provide the connectivist component situating it within small and localised professional learning communities.

6.3.5. Professional Learning: Connecting Knowledgeable Others
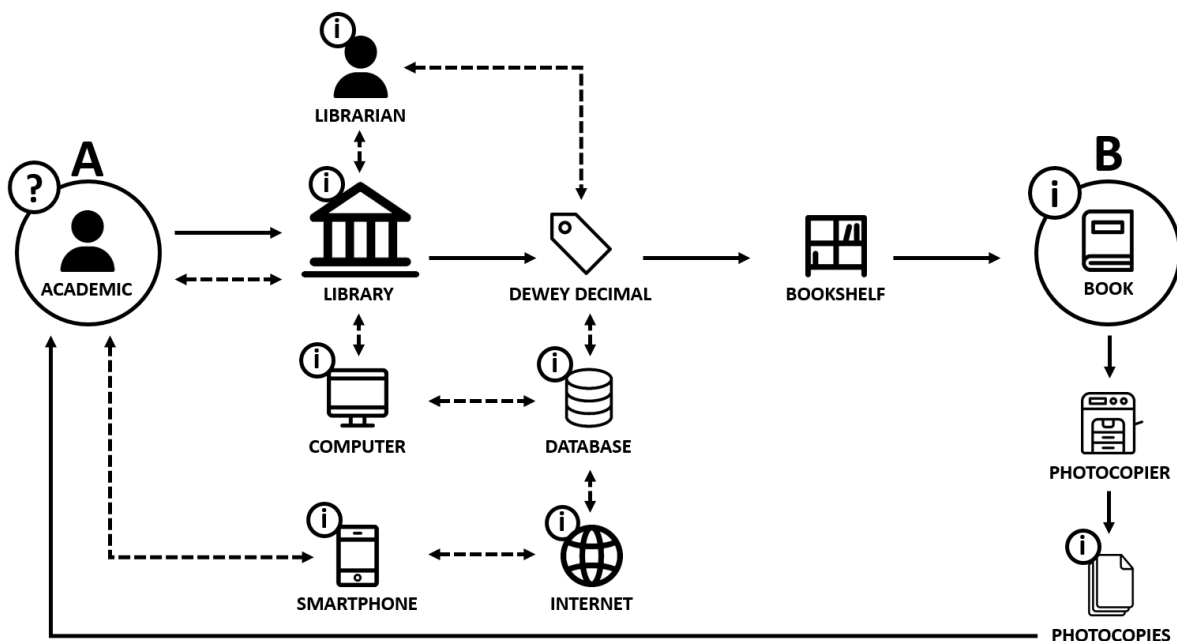
Figure 6: Simplified library scenario showing small-scale connectivism in the production of professional learning

In *Figure 6* above, I have created a scenario that can demonstrate small-scale connectivism in facilitating professional learning. The above illustration is simplified for ease of discussion. At the far left of the illustration resides the academic, denoted by the letter "A". The academic will have a question, an issue or some information that they need an answer to, this is signified by the question mark symbol ("?"). Knowledgeable others symbolised by the letter "i" (for information point) can take many forms, in this particular case it is a book

(represented by "B"). To get to this information point are facilitators (these too can be knowledgeable others) in the form of a library, a librarian, a computer, a smartphone, the Internet, and a database. I will elaborate using this scenario to illustrate how a variety of human and non-human entities are involved in connecting the academic to the knowledge they seek, in facilitating their professional learning activities.

In this scenario, the academic traverses from "A" to "B" to find a particular book for a paper they are writing, they will need to use the library. The library is comprised of a complex sociomaterial assemblage of humans and non-humans. The library architecture itself is constructed with glass, brick, mortar and supported with steel frames. Inside the library, numerous entry and exit points utilising doors, stairs and elevators will take the academic to the floor holding the book. Colourful signage depicting the Dewey Decimal Classification numbers informs the academic where to locate resources for their disciplinary area. The academic could have taken other routes to get to the source of the information they are looking for (as symbolized by the dotted lines). This could have included asking a librarian, accessing the bibliographic database via the library's computer terminal, or using a mobile app on their smartphone to access the bibliographic database via the Internet. Upon arriving at the location of the book, an electronic control panel on the mobile shelving assists with the moving of the stacked shelving to gain access to the book. A staff card containing information about the academic is used to access the printer for photocopying. The printer will photocopy pages from the book and bind them together with a staple. In the course of retrieving and photocopying the book, the academic will come into contact with a variety of human bodies drifting in and out of the library, whilst occupying particular spaces during particular times.

In the scenario that I have presented, the academic has enacted a range of practices and performances in order to gain information and knowledge. A range of human and non-human entities have been recruited and mobilised into nodes enabling the academic to perform various knowledge collection tasks that will facilitate professional learning. The academic will have traversed a number of nodes (e.g. walking to the library) to reach their destination (or information points). In connectivist terms, it is not the 'information point' (i.e. content) that is important, it is knowing the route (i.e. creating paths to knowledge). Moreover, the academic would have traversed different spatial types (e.g. the physical space of the library, the digital space of a bibliographic database), as well as the different temporal zones (e.g. the time taken to walk between the office and the library, accessing information on the database that is stored on a server located in Australia).

There are affective elements in operation involving the academic, the library building itself, other people within the library and objects located within the library. For example, the light in the library may be too bright and the temperature too cool, or the software used to access the bibliographic database is too slow, thus frustrating the academic. The academic may find that they will have to unlearn and relearn a new route to the source of the knowledge if the existing route changes. For example, the journals have been moved to the second floor (from the first floor) and located at the back of the library (instead of the middle section). Thus, the academic will have to create new paths to access the knowledge they seek.

6.4. Implications for Practice and Further Research

In this section, I will focus on the two most original aspects of the thesis, namely the *four interrelated spatial properties* and the *knowledgeable other*. I will discuss the implications for practice and further research that these two areas will have on the professional learning of HE academics.

6.4.1. Spotlight on the Four Spatial Properties

In Section 6.2.3, I introduced the concept of *coalescent space*, which is constituted with four interrelated spatial properties: *transient*, *affective*, *controlled* and *immersive*. It is these four interrelated spatial properties that may provide an explanation why some spaces are more conducive to professional learning than others.

In understanding how these four spatial properties come into play, I have already suggested that many HEIs have created new types of workspaces for their academics (Parkin *et al.*, 2011). These involve academics sharing offices so that these spaces can become incubators for ideas and hubs for creativity and development (Lam, 2010). However, issues with open-plan offices have been widely documented in the research literature (e.g. Baldry & Barnes, 2012; Davies & Lee, 2013; Kim & de Dear, 2013; Wolff, 2015; Al Horr *et al.*, 2016; Lee *et al.*, 2016; Haapakangas *et al.*, 2018). Specifically, these issues are associated with various environmental complaints, such as noise and lack of privacy (Haapakangas *et al.*, 2018). These issues also extend to the psychological and physical well-being of shared office workers (Bodin Danielsson & Bodin, 2009), their interpersonal relationships (Bodin Danielsson *et al.*, 2015) and work performance (Kaarlela-Tuomaala *et al.*, 2009). The kind of knowledge, learning and work that most academics engage with requires deep, uninterrupted concentration, sometimes over a long period of time (i.e. complete immersion with the task /

activity at hand). Academics need to maintain a sense of control (i.e. privacy) over who is able to access them in these workspaces. A sense of privacy can be diminished by inadequate visual and auditory isolation, making academics susceptible to distractions, such as conversations and movements within the workspace (Ball *et al.*, 2012; Haapakangas *et al.*, 2018).

It is, therefore, unsurprising that the participants of this study have sought out 'hidden spaces' or 'secret places' in which to escape, enabling them to have a sense of agency over their requisitioned environment. By occupying spaces that are 'offstage', beyond the control, scrutiny and subjugation of the dominant powers, the participants are performing an "act of resistance" (Scott, 1990). These spaces become 'safe harbours' (or *sites of resistance*) where professional learning time is protected and academic labour is able to flourish undisturbed and unmonitored in relative comfort and safety (*ibid.*, 1990). Objects can also be mobilised into these "acts of resistance". For example, earplugs are used to block the institutional noise, or the deliberate draining of a smartphone battery cell that prevents the receiving of calls or messages from colleagues, students and managers. These are tiny, but significant, acts of transgressions, which go a long way in offering respite towards an academic's self-care.

However, HEIs need to understand how their institutional space is organised or is constitutive of an HEI, in terms of learning, teaching, research, scholarship, collaboration and knowledge production (Wilhoit, 2018). This involves drawing upon those actors (human and non-human) that are able to make a difference in the being of HEIs, as well as those ongoing performances that must constantly be enacted into being (*ibid.*). Furthermore, it requires senior managers, environmental psychologists, and IT and Estate professionals to seek out a better understanding of how these new organisational spatial configurations, such as hot-desking areas and open-plan offices, affect professional learning and academic work (using the four interrelated spatial properties as a framework for analysis) and develop solutions that allow academics the right to learn and work in solitude or as a group, as and when it is appropriate to do so.

Advancements and developments in technology have enabled new possibilities for creating conditions concerning *noise*, *air*, *temperature*, *light*, and *space*, which can be optimised for professional learning and academic work performance (Badayai, 2012). This, for example, could include the construction of *quiet workspaces*, such as soundproof booths or rooms. These could be designated spaces located around a university campus or within big, open-plan office space. From the perspective of workspace stress, Vischer (2007) suggests that

using quiet workspaces may help to increase *physical comfort* (i.e. a work environment that is clean, safe and accessible), *functional comfort* (i.e. a work environment that supports learning and work-related activities, such as good lighting, no noise and privacy) and *psychological comfort* (i.e. an academic has a sense of belonging, ownership and control over their work environment). However, whilst it might be desirable to give academics the freedom to choose between working in different spaces (e.g. solitary or collaborative) that can support a range of tasks and activities, some researchers have suggested that most employees do not actively switch between different workspaces, thus undermining the potential benefits of quiet workspaces in open-plan offices (Hoendervanger *et al.*, 2016; Haapakangas *et al.*, 2018).

Nevertheless, other arrangements could be considered, such as short-term and long-term reservations of quiet rooms, particularly if the task or activity requires concentration over a period of time. As many of the office distractions are auditory, room acoustic design could be improved to ameliorate the working conditions in open-plan offices. Furthermore, a suite of ICT solutions, both hardware and software, can be developed to support academics in adopting a more flexible and mobile approach to learning and working that can enable them to switch between different spatial configurations within the workplace. However, this may require academic staff to develop the relevant technical skills to be able to feel comfortable and confident in fostering new working styles and behaviours. These other arrangements and solutions introduce some interesting tensions between the four spatial properties which would require further research. For example:

- Will the quiet workspace be too quiet for some of the academics? If so, what else needs to be introduced to (or removed from) the quiet workspace to make it conducive for professional learning?
- Will the size and perceived spaciousness of the quiet workspace be too unsettling (i.e. the space is too small)? What effect will this have on being immersed with the intended task?
- Will a room acoustic design encourage academics to use their shared office workspace more for professional learning activities? If not, what can remedy this?
- Will more flexible and mobile ways of working enable or encumber professional learning?
- Could other spatial properties be added to (or replace) the four interrelated spatial properties?

Recent literature on workplace learning have emphasised the importance of balancing the individual's professional learning needs with that of the organisation's prerequisites for learning, if professional learning is to be successful (Collin, 2006; Hodkinson *et al.*, 2008; Lester & Costley, 2010). This suggests that organisations need to create a dynamic 'learning climate' that is conducive to academic professional learning, which is able to facilitate ample opportunities for both formal and informal learning events and encounters (Marsick & Watkins, 1990; Marsick, 2009; Collin *et al.*, 2012; Lambert *et al.*, 2012). A 'learning climate' can be described as a "climate that stimulates employees to ask questions, seek feedback, reflect on potential results, explore and experiment ... with the aim of increasing ... learning or making use of what is learned on the job" (Collin *et al.*, 2012, p. 158). As Lester and Costley (2010) have noted "work-based learning will only 'work' if the work environment is capable of supporting learner-managed, reflective learning at an appropriate level" (p. 563). Furthermore, senior managers and leaders would need to ensure that this 'learning climate' is allocated sufficient time and that academic staff feel supported and given plenty of opportunities for professional learning. As Cowan *et al*. (2013) have stated, "formal methods of [professional learning] in time bound and expert-led sessions are outdated" (p. 17), rather innovative practices emerge from informal interactions with colleagues from within and outside of other disciplines, which may occur at anytime and anyplace, thus making collaboration and knowledge production through the connections and relationships made by the academics.

6.4.2. Spotlight on the Knowledgeable Other

I introduced the concept of the *knowledgeable other* in the previous chapter (see *Section 5.2.4*). I conceived the 'knowledgeable other' as a trusted human or non-human entity that a person will interact with to try to assimilate (or fast-track) a particular piece of knowledge. This particular piece of knowledge often sits outside of an academic's subject area, though this knowledge does not exclude the subject area itself. I framed the 'knowledgeable other' as being part of a *connectivist* model of (professional) learning, in which the 'knowledgeable other' is a source of knowledge that is connected to other sources of knowledge, both human and non-human (e.g. libraries, web sites, mobile apps, journals, databases).

In the study, most of the participants had expressed their dissatisfaction that they could not find the time (and space) to engage in some form of professional learning activity. In managing the pressures upon their time, academics must become 'adaptive experts' that will enable them to "deliberately improve [their] professional competence, seeking [out]

alternative solutions for existing professional practices and becoming an active knowledge-building and networking actor in [their] professional field in order to reach the highest levels of professional competence" (Hytönen *et al.*, 2016, p. 337). This suggests that expertise development is not a linear process, but rather a continuous and contextually situated one (Grenier & Kehrhahn, 2008). Moreover, academics will need to develop their expertise in a multitude of ways, whilst being mindful of not "being too prescriptive in respect of 'best practice' learning methods" (Cheetham & Chivers, 2001, p. 285).

There was an institutional expectation that the participants needed a thorough understanding of a range of knowledge that often sat outside of their disciplinary areas (e.g. sustainability, employability). Hence, the 'knowledgeable other' playing a vital role in reconciling those gaps in the professional knowledge of the academics. It is not necessarily the knowledge itself that is important, rather it is knowing 'who' or 'where' to locate this knowledge in the first place (Hilaricus, 2011). Sometimes, it may involve 'when', if the knowledge is time-sensitive, such as an announcement being made for future funding opportunities. Academics need to develop a way of accessing this knowledge.

One approach that will enable busy academics to develop their professional knowledge and expertise is by constructing and enriching their own professional learning networks (PLN), using connectivist approaches to interact with 'knowledgeable others'. PLNs are conceived as unique "systems of interactions made up of *people*, *spaces* and *tools* that support learning and professional growth" (Krutka *et al.*, 2017, p. 247, emphasis added). Within a PLN, a variety of people can be drawn in to offer feedback, ideas, emotional support and opportunities for collaboration. Different types of spaces can be utilised, from the physical spaces of conferences and café meetings to digital spaces of Twitter chats and Skype meetings. Furthermore, academics can access a range of cognitive (i.e. ideas, discourses) and technological (i.e. websites, videos) tools to cultivate their professional learning (Trust *et al.*, 2017). The often complex and uncertain nature of an academic's professional learning experience means that they can benefit from a PLN in diverse ways. PLNs are multimodal, supporting anytime and anyplace learning opportunities that will enable academics to develop knowledge, skills and expertise (Trust *et al.*, 2016). From a connectivist perspective, these forms of networks can emphasise *diversity*, *autonomy*, *openness* and *emergent knowledge* (Downes, 2012). Recent research seems to suggest that PLNs can also support professional growth in one or more of the following domains: *affective*, *social*, *cognitive* and *identity* (Trust *et al.*, 2016).

Furthermore, the pervasiveness of social media has afforded academics with immense opportunities to extend their PLNs beyond traditional spatial, temporal, and institutional boundaries (Trust *et al.*, 2017). The learning experience within these new digital spaces tends to be mediated by the affordances, biases and limitations of the digital platforms, but these spaces open up access to a range of resources and discourses that often sit outside of local contexts (*ibid.*). In particular, these digital spaces serve as gateways for academics to enter into 'affinity spaces' (Gee, 2007; Hayes & Gee, 2010). Unlike the community of practice model (Wenger, 1998; 2010), Hayes & Gee (2010) propose a concept of 'affinity spaces' that can provide "well-designed spaces that resources and mentor learners, old and new, beginners and masters alike" (p. 188), which can offer learners an identity, knowledge and status as well as encouraging and resourcing critical learning and reflective thinking. In other words, an 'affinity space' does not segregate the 'apprentices' from the 'masters', rather they are allowed to co-exist and co-produce knowledge that can be distributed and dispersed widely across different devices, media and platforms, fusing together in what Jenkins (2006) describes as 'media convergence', thus creating a substantial pool of 'collective intelligence' and 'collective resources'.

Indeed, it has been argued that within the context of higher education, these new technologies are "breaking down traditional barriers separating academic research from teaching, work-based learning and informal learning" (Kukulska-Hulme, 2012, pp. 247–248). It is providing opportunities for academics to reach out beyond their local networks and contexts, connecting and learning from 'knowledgeable others' (both human and non-human), and accessing an abundance of resources, perspectives, and information (Weller, 2011b). However, academics may feel anxious or overwhelmed when confronted with an overabundance of information (Eppler & Mengis, 2004; Bawden & Robinson, 2009). New strategies, or countermeasures, for handling large volumes of information may need to be developed and enacted. Such strategies can include taking control of one's information environment through better time management techniques, critical thinking, and information management skills (Bawden & Robinson, 2009). Furthermore, academics should make appropriate use of ICT by adopting such techniques as filtering, personalising information and utilising smart dashboards to present information (Eppler & Mengis, 2004; Bawden & Robinson, 2009).

Much has been written about how academics primarily construct their own identity based upon their collegial networks and their department/academic disciplines (Becher & Trowler, 2001; Roxå & Mårtensson, 2009; Clarke & Reid, 2013; Zukas & Malcolm, 2017). However,

recent research into academics use of PLNs seem to suggest that academics tend to use their PLNs to support their learning and teaching practices, rather than using their PLNs to support and develop other areas of academic work, such as research, administration and leadership (Trust *et al.*, 2017). Previous studies suggest that social media use in higher education has been used to engage with scholarship (Greenhow & Gleason, 2014), as a means for promoting academics' work (Shah *et al.*, 2016), and to support student learning outside of the classroom (Davis III *et al.*, 2012). Trust *et al.* (2017) noted that the academic participants within their study may have placed an emphasis on the teaching dimension of their academic work, reflecting the academic's lack of teaching preparation. There was also a suggestion that the academic participants were still learning how best to use and exploit their PLNs in all aspects of academic work, or that they had not considered that their PLNs could be used in a variety of ways. These issues introduce some interesting questions relating to academic use of PLNs, the concept of 'affinity spaces' and, in particular, the role of the 'knowledgeable other' within those PLNs, which would require further research. For example:

- How do academics learn to develop and enrich their PLNs? How do they choose between one 'knowledgeable other' over another in the formation of their PLNs?
- How do academics manage the various connections and interactions within their PLNs? What strategies, if any, do they use in the management of their PLNs?
- How do academics online and offline professional activities and practices interact, enact and impact upon their professional learning? Do PLNs facilitate blended professional learning approaches?
- Are there any disciplinary differences in the use of PLNs? If so, in what ways do these differences manifest themselves? Are there disciplinary differences in the types of 'knowledgeable other' recruited into the PLN?
- Do PLNs facilitate notions of collaboration or co-operation amongst academics and 'knowledgeable others'?

Professional learning networks offer academics a valuable set of tools and resources in which to discover and disseminate professional knowledge, to receive emotional support, to have more agency over their professional learning trajectory, to seek out and connect with 'knowledgeable others' (human and non-human) that extends beyond their traditional face-to-face networks (Krutka *et al.*, 2017; Trust *et al.*, 2016; 2017). PLNs allow for a multiplicity of ways in which academics can support their particular interests and needs in pursuing their professional expertise and growth during a climate of political, technological and educational complexity and uncertainty. PLNs also provide ample opportunities for academics to engage

with a blend of formal and informal learning events and encounters, situated across local and global contexts, and within different spatial configurations (e.g. physical, digital, psychological).

6.5. Summary

In this chapter, I have discussed the findings of the study in relation to my research questions and within the existing literature. Through a sociomaterial analysis using Actor Network Theory and Non-Representational Theory, the research revealed four key findings:

1. how institutional noise can hinder the professional learning of academics;
2. academics will seek refuge in spaces that remove them from this institutional noise;
3. the car and the journey to and from work is an important transient workspace; and
4. in reconciling those gaps in their non-subject knowledge, academics will seek out trusted "knowledgeable others" and "knowledgeable communities".

In answering the first research question, I argued that *coalescent space*, where multiple and interconnected spatial configurations coalesce into a single spatial configuration, has a set of interrelated properties that were conducive for professional learning. I labelled these spatial properties as: *transient*, *affective*, *controlled* and *immersive*. I discussed each in detail, linking it to the research findings and the existing literature. The second research question found that academics tended to take a pragmatic or strategic 'just-in-time' or a 'need-to-know' approach to their professional learning, with many feeling guilty in engaging with their professional learning because they had more pressing institutional commitments and obligations. Much of their professional learning was focused upon their own subject discipline areas. Academics would interact with both human and non-human *knowledgeable others/communities* to seek out information to fill those gaps in their professional knowledge. I argued that the concept of *connectivism* offered a useful framework in which to view how these human and non-human *knowledgeable others/communities* operate in helping academics to acquire professional knowledge through professional learning. Finally, focusing on two of the most original aspects of the thesis, the *four interrelated spatial properties* and the *knowledge other*, I discussed their implications for practice and further research.

In the concluding chapter, I will provide a summary of the insights gleaned from this research as well as discussing the contribution the research has made to the body of knowledge into the professional learning of academics in higher education, the limitations of the study, and implications and recommendations for both policy actions and future research activities.

07

CONCLUSION

7.1. Introduction

7.1.1. Section Overview

The preceding chapter discussed the significant findings from the study into the professional learning of academics in HE, taken from a sociomaterial perspective. Specifically, the study responded to the following research questions:

1. What are the conditions (e.g. academic role) that enable or encumber the professional learning of academics in higher education?

2. To what extent does an academic give precedence to one form of professional knowledge (e.g. subject discipline) over another (e.g. institutional policy)?

In this concluding chapter, the main findings of this study are summarised, and conclusions are drawn. I then describe the limitations of the study followed by the implications and recommendations for policy actions and practice. Next, I will offer some suggestions for future research and discuss the contribution to knowledge made by this study. Finally, I will reflect on my research 'pilgrimage' focusing upon my learning experiences.

7.2. Key Findings Revisited

Four key findings were indicated:

1. Academics encounter and engage with a variety of technologies, processes, discourses, documents and people throughout their working day. These various enactments, encounters and engagements create what I call *institutional noise*, which prohibits academics from doing those tasks and activities that are important to them. Furthermore, the rationale that academics should share office workspace so to generate hubs for collaborative research and development (Lam, 2010) is misguided. Much of the academics' professional learning and research are undertaken as solitary activities requiring peace and solitude.

2. Academics will actively remove themselves from this "institutional noise" in order to undertake professional learning, research and other academic work that requires concentrated effort. They will seek out refuge and respite within those hidden places and secret spaces that they have constructed for themselves. Some of those spaces

involves replicating the office workspace in a space other than the work place, these I call *surrogate workspaces*. For other academics, they occupy less-than formal spaces to think, plan, learn or work. These spaces tend to be short-term or temporary, I refer to these spaces as *transient workspaces.*

3. The most significant "transient workspace" is the automobile. The journey to and from work (or another site) offers the academic with an invaluable window of opportunity to learn, work, think aloud, or rehearse lectures. The car becomes a cocoon that facilitates a range of professional learning and academic work activities, which the academic may not necessarily be able to achieve in the work place or during working hours. For some academics, on the journey home, the car becomes a *confessorial space* that enables them to reflect and verbalise on those things that went well and not-so-well during their working day. The space allows them to 'draw a line' under the day's events, so not to bring such issues home with them.

4. Much of the academics' professional learning is situated around their subject disciplinary areas. These are subjects that they are passionate about and familiar with. However, where it comes to non-subject knowledge (e.g. employability, sustainability), academics will seek out those *knowledgeable others* and *knowledgeable communities* that will help them to reconcile those gaps in their professional knowledge. The "knowledgeable other" or the "knowledgeable community" can comprise of both human (e.g. colleagues, peers, students) and non-human (e.g. databases, websites, briefing papers) entities. It is not the knowledge content that is important, but the path in which that knowledge can be acquired. Suggesting that such an approach is *connectivist* in character (Siemens, 2005; Downes, 2006; 2012; Siemens & Tittenberger, 2009).

7.3. Limitations of the Research

This section considers the limitations of this study, which are the consequence of a series of decisions that I took during the research process.

7.3.1. Methodological Limitations

This study has the limitation of being conducted within a single HEI, which has designated itself as being 'teaching led' and therefore challenges the transferability of the findings to the

HE sector as whole, in particular to 'research led' institutions. Whilst a single case study approach can help researchers explore a given context in depth and generate rich and comprehensive data; the results of a single case study are not generalisable. As Schwandt & Gates (2017) note, "typicality is not the intent of the [case study]" (p. 347). Additionally, the sample of academics in this study were taken from a particular group who inhabited the role and responsibility of a Module Leader. This sample also limits the extent to which the insights gained are generalisable to the broader academic staff within the single research site. However, a sociomaterial perspective is more concerned how something occurs, not why it happens, and as such it is neither appropriate nor desirable to generalise sociomaterial phenomenon (Law, 2008).

The use of observational methods would have lent some additional strength to the sociomaterial perspective by observing the participants as they engage with various professional learning activities. This would have allowed the researcher to pay particular attention to those practices and performances that were being enacted by the participants. As reported by Malcolm & Zukas (2014) in their study on how academics work, the adoption and acceptance of the observation method within an HE context proved challenging and delayed their own project by some considerable time. However, the additional advantage to the photovoice process is that it can provide "access to settings and subjective experiences that are difficult to access in retrospective or observational research" (Ciolan & Manasia, 2017, p. 3). Furthermore, it is recognised that interviews can be prone to self-report bias (van de Mortel, 2008). Participants may respond to questions by saying what they believe the interviewer wants to hear.

7.3.2. Practical Limitations

Other limitations to the study include data being collected at one point in time, specifically at the photovoice process. The planning and timing of the photovoice process is critical. Failure to do so could bias the research based on certain missing factors, such as contexts, persons, activities, due to an inappropriate chronological placement of the study (Ciolan & Manasia, 2017). Thus, a longitudinal study may have offered a richer and more accurate picture of the issues surrounding an academic's engagement with professional learning in a HE context. However, the practicalities of getting busy academics to engage in a longitudinal study can be problematic. As noted in the Discussion chapter (see *Chapter 6*), the participants struggled to meet the three week turnaround for the photovoice process.

Finally, I should acknowledge the ambiguities surrounding my role as an insider researcher. In my position as a learning technologist and academic professional developer, academics, particularly within the Faculty that I support, may have found it difficult to be honest in their responses in order to please me and to give a favourable picture about their engagement with professional learning. However, in order to encourage them to be as open and as frank as possible, all of the participants were assured that I was there in my capacity as a researcher. I recognise, however, that my close knowledge of the research site might potentially bias my interpretation of what I observed and was told, something which I tried to avoid by continual reflection on my part in the process. I have maintained a reflective logbook throughout each stage of the study to check and challenge my positionality. While recognising these limitations, as I have indicated, I have taken steps wherever possible to minimise any bias in my analysis and increase the trustworthiness of my findings.

7.4. Implications & Recommendations

In spite of the above-mentioned limitations, there are a number of potential implications from this study. This section also suggests a number of recommendations, which can usefully be brought to the attention of academics in HE, academic professional developers, people and organisational developers in general, and policy and decision makers in particular.

7.4.1. Academics

There are pressures on academics in HE to meet "research excellence" and "teaching excellence" standards as well as contributing to the wider knowledge economy and the reputational standing of their institutions. The study found examples of disproportionate work load balances. Therefore, some consideration needs to be given to ensure an equitable distribution of teaching commitments and research opportunities for those academics who wish to be active in both domains. Furthermore, Faculties and Schools need to reconsider removing the more extraneous administrative tasks away from academics and, where appropriate, realign these tasks towards administration teams instead. Academics should seek out and make opportunities to socialise and discuss professional issues in an informal setting, or through developing a professional learning network (PLN). Most academics recognise the value of sharing best practice in and across disciplinary areas.

7.4.2. Academic Professional Development (APD)

There is a lot of value in running academic professional development workshops that academics can attend, particularly around sharing good practice and offering practical advice amongst academic colleagues. However, it is not always possible for them to attend or they may feel that the subject matter is of little relevance or too late for them. Therefore, other opportunities for professional learning and development need to be explored. APD Teams need to work closely with Faculty, Schools and Programme teams to develop bespoke workshops around themes and agendas that are relevant and timely to academics. These workshops need to be situated with an academic's disciplinary context and structured around particular days or events, such as a team away day. Furthermore, these workshops need to offer something that is both practical and tangible that will enable academics to apply them within their particular contexts and practices.

The introduction of technology-enhanced learning (TEL) can offer academic 'bite-size' content that can be accessed anytime and anyplace. The adoption of a micro-learning model for professional learning is beginning to gain some interest in HEIs in tackling the need for just-in-time content and resources (Buchem & Hamelmman, 2010; Coakley *et al*., 2017; Wasiuk *et al*., 2017). This may be a model worth exploring as part of a portfolio of professional learning activities for busy academics.

7.4.3. People and Organisational Development (POD)

POD teams have been successful at developing institutional focused activities that are leveraged towards particular organisational agendas. However, much work needs to be done in developing a mutual understanding with Faculties and Schools, which are based upon a shared sense of values, understanding, respect, and a common vocabulary. This is a two-way process. Faculties and Schools also need to be reciprocal partners in professional learning and development. This involves understanding the short-, medium-, and long-term professional learning needs of academics balanced with the needs of the institution.

In developing information systems that record the professional development undertaken by academics within a given academic year; it is advisable that any reporting functionality is able to differentiate between an academic and professional services staff working in a particular school or faculty. This will give HEIs a more accurate picture of the professional learning and development engagement of their academics and, if necessary, provide appropriate revisions to the POD provision for academics.

7.4.4. Policy Makers

Policy and decision makers often have the difficult and challenging task of balancing finances, resources, people, curriculum, and space against the competitive needs of students, businesses, local communities and government. This is especially problematic in a complex economic and political climate. There is, of course, a lot of value of placing academic staff in shared offices to enable 'hubs' for ideas, research and development. However, there is also a need for privacy and solitude that can enable academics to develop these ideas into something tangible and concrete. Therefore, it is desirable for academics to have their own or have access to a private office space. Additionally, this learning and development time needs to be created and be protected.

7.5. Future Research Directions

This section suggests some recommendations for further research that have arisen from this study that complement the findings. The following themes / topics have been identified for possible further research:

1. This study was conducted at a single research site. By conducting a comparative study with another 'teaching-led' institution using a sociomaterial approach, will allow for a richer perspective on the professional learning of academic in higher education. A multi-site study may expose a different set of properties that emerge from different institutional contexts.

2. A longitudinal study or a study that has particular 'touch points' across the academic year would be useful to try and capture those time-dependent activities, events, objects, and people that can vary across different spatial and temporal contexts.

3. A similar study could be conducted at a 'research-led' institution, which will have a different set of values, objectives and drivers to a 'teaching-led' institution.

4. This study recruited academics that were responsible for leading on particular modules within their undergraduate degree programme. As such, they have a different set of roles and responsibilities compared to their more junior or senior colleagues. To provide a means for comparing and contrasting academics in different stages within their academic and professional careers, a similar study can be conducted that

explores the professional learning of a) early career academics, and b) academics in senior management roles. This will allow us to see if there are significant changes in how professional learning is conducted, what kinds of knowledge they are expected to learn, and what factors enable or encumber this professional learning.

5. Although this marginalised and under-researched group of academics were out of scope for this study, there is an important need to provide academics who are sessional/associate staff on casual contracts a voice. A sociomaterial study can be used to trace areas of inclusion, exclusion, difference and interference in their various engagements with professional learning.

6. In this study, the participants were very appreciative of the photovoice method and how it was able to facilitate the exposing of those areas in their professional learning that helped or hindered them. An area of research can explore the role of the photovoice method as a 'confessional' tool that not only facilitates academics in unveiling those things that enable or encumber their professional learning, but also lead towards a call for action to correct or remedy where there are professional and personal imbalances.

7. Much work has been done on connectivism in the context of online learning and MOOCs (Massive Open Online Course) in particular. There is an opportunity to look at how the principles of connectivism can be applied in the offline (as well as online) worlds and across smaller contexts (see: Tschofen & Mackness, 2012; Mackness *et al.*, 2013).

7.6. Contribution of the Findings

The contributions to new knowledge of this study can be divided into theoretical, methodological and practical contributions. Each of which will be described in the following sections.

7.6.1. Theoretical Contribution

The literature on the sociomaterial accounts of professional learning of academics working in the HE sector is quite sparse. The literature that does exist tends to privilege the teaching dimension of academic work (e.g. Knight *et al.*, 2006). Nevertheless, there are few

sociomaterial studies that are trying to account for a broad spectrum of academic work (e.g. Malcolm & Zukas, 2014). This study takes a holistic view of academic work that includes research, administration as well as teaching. It complements and offers additional insights into the conditions (e.g. academic role), situations (e.g. time pressures), spaces (e.g. shared offices), technologies (e.g. e-mail) and discourses (e.g. institutional policy) that enable or encumber an academic's engagement with professional learning. From a sociomaterial perspective, the study draws attention to the weaknesses and inadequacies of social constructivist accounts of professional learning, which fail to recognise and renders invisible those objects, performances, and flow of interactions that occur before, during and after some professional learning activity.

The study incorporated Actor-Network Theory and Non-Representational Theory as theoretical tools. The adoption of a sociomaterial sensibility known as *aspectuality* provided a new perspective in articulating how the social and material worlds offer two contrasting, yet intractable aspects of everything that comes into existence and is experienced or expressed through its relational embodiments (Martine & Cooren, 2016; Wilhoit, 2018). A frequent criticism of sociomaterial accounts is that researchers tend to privilege the material over the social. In addressing these criticisms, aspectuality is inclusive of both material *and* social renderings of phenomena.

This study identified four interrelated spatial properties that provided an explanation why some spaces were more conducive for professional learning than other spaces: *transient*, *affective*, *controlled* and *immersive*. Furthermore, I argued that space was made up of multiple and interconnected spatial configurations that coalesced into a particular spatial configuration, which I conceptualised as *coalescent space*. The study also found that academics sought out advice, support and information from both human and non-human entities, which I called a *knowledgeable other* and *knowledgeable community*. The important thing to note here is that this professional knowledge resides neither in people's heads, nor in technology (Hilaricus, 2011). It is knowing the route to finding this knowledge that matters, rather than the knowledge itself. By providing an overview of four spatial properties that facilitate the professional learning of HE academics, and pointing towards the notion of a knowledgeable other/community as an important facilitator to acquiring just-in-time knowledge, a theoretical contribution to professional learning is made.

7.6.2. Methodological Contribution

Whilst the use of photography is well incorporated within sociomaterial studies, the adoption of the photovoice method is both a unique and powerful addition to the sociomaterial 'toolbox'. Moreover, the use of photovoice within the field of education is also underutilised (Ciolan & Manasia, 2017). Photovoice is underpinned and supported by three major theoretical frameworks: Paulo Freire's (1970) theory of critical consciousness; feminist theory; and documentary photography.

Photovoice's power and efficacy can be found in the way it advocates participant empowerment and emancipation by giving marginalised individuals and communities a voice in which to express themselves. It has provided a much-needed voice for academics to explore those issues that were important to them. The participant became a co-researcher and a co-learner in the research project by researching and learning about their own professional learning contexts and about themselves (e.g. lack of space and time, too many distractions, doing more with less). By increasing the involvement of the participant in the research process, the validity of the data also increases, which enhances the quality of this study (Julien *et al.*, 2013).

7.6.3. Practical Contribution

As this study is framed around a sociomaterial treatment of the professional learning of academics in HE, emergent knowledge materialises. This emergent knowledge can take on the form of phenomena, practices and performances involving a variety of human and non-human actors across different spaces, times and contexts. This study has developed a new vocabulary that is able to articulate these emergent spatial and material engagements, thus offering a practical contribution to the sociomateriality of professional learning.

This study was conducted against a volatile HE landscape, such as the recent higher education legislation (Higher Education and Research Act, 2017) and the UK's proposed withdrawal from the European Union (European Union Referendum Act, 2015). It is expected that a subject level *Teaching Excellence and Student Outcomes Framework* (TEF) will be implemented in the near future (Barber, 2017). There are palpable concerns that this will expose those subjects that are unable to demonstrate teaching excellence, which will have severe implications. The study provides a unique view of academics on the cusp of change within the HE sector. The baseline data can be used to compare and contrast potential future

changes in the way academic engage with professional learning in light of TEF and the emergence of a post Brexit university.

7.7. My Liminal and Intellectual Pilgrimage

7.7.1. Unpacking the Metaphor

Most people talk about being on a 'journey'. As a metaphor, the term 'journey' has become an overwrought and overused word, especially in relation to reality TV talent shows. Moreover, it begins to lose the "ability to discriminate meaning" (Hughes & Tight, 2013, p. 765). In talking about my doctoral experiences, I chose to use the word 'pilgrimage'. Coming from the Cathedral City of Canterbury, the notion of a 'pilgrimage' draws its associations from Geoffrey Chaucer's *The Canterbury Tales*, and the Michael Powell and Emeric Pressburger film released in 1944, *A Canterbury Tale*. In reading a paper by Hughes & Tight (2013) on the metaphors that are used to describe the doctoral experience, a number of allusions to John Bunyan's (2008, [1678, 1684]) novel, *The Pilgrim's Progress*, are made – it confirmed to me that my choice of the word 'pilgrimage' was a sound one. The start of my personal *pilgrimage* would be both *intellectual* and *liminal*. This notion of liminality draws upon Meyer and Land's (2003) conceptualisation of "threshold concepts". In undertaking this doctoral pilgrimage, I would experience struggle and internal conflict along the way as I try to exorcise my educational 'demons' once and for all.

7.7.2. The Doctoral Pilgrims

As part of this pilgrimage, I had intended to maintain a public weblog[23] of my experiences. However, it soon became clear to me that certain experiences needed to remain private – I was not ready to lay bare my soul for public consumption. Instead, I maintained a logbook in *Microsoft® Word*. It is in this logbook that each stage of this EdD study was captured – deciding and reframing my research agenda, design and developing the study, gaining ethical approval, collecting data, organising a transcribe, analysing the data, writing up, and copious amounts of reading. At each stage, I ran a gamut of conflicting and contrasting emotions: joy, happiness, stress, frustration, despondency and anger.

As this is a taught doctorate, I had cemented firm friendships with the other doctoral students within my cohort. As a cohort, we all bonded incredibly well over our collective concerns,

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[23] My weblog is called *The Accidental Technologist* and can be accessed at: http://www.waynebarry.com/.

worries and triumphs. After the taught component of the course finished, most of us would meet up once every six months as well as maintaining a *WhatsApp* group. In addition to my supervisors, my cohort-in-arms became an important support network, both academically and emotionally. They helped me by discussing my research and critically reflecting on that of others.

7.7.3. A Line of Flight

My own professional learning has much in common with the issues discussed within this thesis. The various pathways to my own professional learning have become entangled with an intricate web of people, ideas, objects, spaces, data, discourses, technologies and my every day practice as a learning technologist, academic professional developer, and as a doctoral student. It has included a wealth of events, engagements and encounters each with a multitude of entrance and exit points, which variously alternate between the fluid boundaries of formal and informal learning. For example, those formal face-to-face and online learning opportunities have included courses, workshops, seminars and conferences, and more informally have been face-to-face interactions with supervisors and other academic colleagues, and online interactions with other doctoral students through the *WhatsApp* mobile app – this digital space has provided much intellectual, social and emotional support from other doctoral students within my cohort.

As part of my continuing professional learning, I occupy a variety of spatial configurations (i.e. physical, digital). In these spaces, I utilise a range of technical (i.e. pencil, paper, mobile app) and cognitive (i.e. ideas, discourses, symbols) tools. I may invite other people within these spaces, who will bring their own technical and cognitive tools. Through the "messy, slippery and indeterminate" (Fenwick, 2010, p. 105) action and interaction (or *intra-action*) of a multitude of people, spaces and tools, along with the histories and cultures embedded within the practices that these elements bring forth, new forms of knowledge, objects, and practices begin to emerge with/in these professional learning activities. I have come to learn with, and from, those "knowledgeable others" who have been incorporated within my professional learning network. I have come to recognise the various routes and paths to locating the knowledge, information and/or resource that I seek.

Through this study, I have become more sensitive towards the sociomateriality of professional learning. In my role of learning technologist and academic professional developer, I can begin to apply this new knowledge and sociomaterial sensibility by

influencing how organisational and academic professional development teams can provide opportunities that will enable academic and professional services staff to engage with their professional learning activities. Furthermore, I can use this sensitivity towards the sociomaterial in evaluation studies that will enable me to gain a better understanding of how our students are engaging with a range of learning technologies and spaces, and the impact that these tools and spaces have upon the student learning experience.

7.7.4. Exit Point?

Occasionally, I still wrestle with my long-standing educational 'demons'. They will never entirely go away and it was naive of me to think that by doing a doctoral programme that I would overcome them. However, I am learning to face them down. This study has sharpened many skills and faculties, including critical thinking, reading and writing, conducting a mixed method research, applying a sociomaterial 'lens' to my research, and critiquing other academic works. To borrow from Deleuze & Guattari (1987), there is no such thing as beginnings and endings, just entry and exit points. This study is one such example of an entry/exit point.

7.8. Conclusion

This chapter presented the conclusions drawn from the findings of this study. Implications and recommendations for both policy and practice were proposed, along with some suggestions for future research directions. This study contributes to the body of knowledge of professional learning, by identifying four interrelated spatial properties that explains why some spaces were more conducive for professional learning than other spaces: *transient*, *affective*, *controlled* and *immersive*. Furthermore, I argued that space is made up of multiple and interconnected spatial configurations that coalesced into a particular spatial configuration called *coalescent space*. I argued that these spaces became an important source of self-care away from the *institutional noise* generated by universities.

The study also found that academics sought out advice, support and information from *knowledgeable others*, which can be human and non-human in character. Moreover, it is knowing the route to this knowledge that is more important than the knowledge itself. The insights from this study also allow academics, academic professional development and people and organisational development teams, and policy and decision makers to explore and develop new opportunities for professional learning. Furthermore, to ensure that

development time is created and protected with appropriate private spaces that facilitate an academic's professional learning and development.

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APPENDICES

APPENDIX I

Confirmation of Ethics Compliance

Canterbury Christ Church University

21 October 2015   Ref: 15/EDU/CL80

Mr Wayne Barry
Learning & Teaching Enhancement Unit

Dear Wayne

Confirmation of ethics compliance for your study *"The professional learning of academics in Higher Education: a sociomaterial perspective."*

I have received your Ethics Review Checklist and supporting documents for the proportionate review of the above project. Because you have answered "No" to all of the questions in Section B of the form, no further ethical review will be required under the terms of this University's Research Ethics and Governance Procedures.

In confirming compliance for your study, I must remind you that it is your responsibility to follow, as appropriate, the policies and procedures set out in the *Research Governance Handbook* (http://www.canterbury.ac.uk/centres/red/ethics-governance/governance-and-ethics.asp) and any relevant academic or professional guidelines. This includes providing, if appropriate, information sheets and consent forms, and ensuring confidentiality in the storage and use of data. Any significant change in the question, design or conduct of the study over its course should be notified to the **Research Office**, and may require a new application for ethics approval. It is a condition of compliance that you **must** inform me once your research has been completed.

Wishing you every success with your research.

Yours sincerely

Roger Bone
Research Governance Manager
Tel: +44 (0)1227 782940 ext 3272 (enter at prompt)
Email: roger.bone@canterbury.ac.uk

cc   Dr Simon Hayhoe

APPENDIX II

Confidentiality Statement for Persons Undertaking Transcription of Research Project Interviews

Title of Project: The Professional Learning of Academics in Higher Education: A Sociomaterial Perspective

Name of Researcher: Wayne Barry

The recording/s you are transcribing have been created as part of a research project. Recordings may contain information of a very personal nature, which should be kept confidential and not disclosed to others. Maintaining this confidentiality is of utmost importance to the University. Signing this form means you agree not to disclose any information you may hear on the recording to others, and not to reveal any identifying names, place-names or other information on the recording to any person other than the researcher/s named above. You agree to keep the recording in a secure place where it cannot be accessed or heard by other people, and to show your transcription only to the relevant individual/s who is involved in the research project, i.e. the researcher/s named above.

You will also follow any instructions given to you by the researcher about how to disguise the names of people and places talked about on any recordings as you transcribe them, so that the written transcript will not contain such names of people and places.

Following completion of the transcription work you will not retain any recordings or transcript material, in any form. You will pass all recording/s back to the researcher and erase any material remaining on your computer hard drive or other electronic medium on which it has been held.

You agree that if you find that anyone speaking on a recording is known to you, you will stop transcription work on that recording immediately and pass it back to the researcher.

Declaration

I agree that:

1) I will discuss the content of the recording/s only with the researcher/s named above.

2) I will keep all recordings in a secure place where they cannot be found or heard by others.

3) I will treat the transcripts of the recordings as confidential information.

4) I will agree with the researcher how to disguise names of people and places on the recordings.

5) I will not retain any material following completion of transcription.

6) If the person being interviewed on a recording is known to me I will undertake no further transcription work on the recording and will return it to the researcher as soon as is possible.

I agree to act according to the above constraints

_____   _____   _____

Name of Transcriber   Date   Signature

_____   _____   _____

Researcher   Date   Signature

APPENDIX III

Participant Information Sheet

Wayne Barry is a Learning Technologist within Learning and Teaching Enhancement (LTE) at Canterbury Christ Church University (CCCU). He is a Doctorate in Education (EdD) candidate at CCCU. He is conducting a research study at CCCU which will contribute towards his EdD degree and to inform future educational professional development practices. The study is being funded through his time being provided by CCCU LTE, who may also provide funding for the interview transcription.

Background

Research into how academics in higher education (HE) might engage in professional learning, when they choose to engage and where this engagement might take place is quite sparse. Moreover, this research tends to privilege the teaching dimension over the many other dimensions that form an academic life, that of research, scholarship, administration, public engagement, and in some cases, professional practice (i.e. law, health-related).

This study will explore and examine professional learning of academics in HE which encompasses and embraces those other dimensions that help to construct an academic's professional identity. Thus building upon the findings of previous studies to create a more holistic picture of professional learning in academia, that takes into consideration of employment status (i.e. part-time, full-time), academic role (i.e. early career, senior manager), gender, Faculty membership and location (i.e. Canterbury, Medway, etc.).

A sociomaterial analysis of professional learning aims to highlight those conditions (i.e. the use of spaces, tools, materials) that facilitate and influence the extent to which academics engage with their learning. Furthermore, as academics become more pressured, in terms of time and resources, to what extent do they privilege one from of professional knowledge over another. This study aims to provide academics a 'voice' in uncovering the complex and contested nature of their professional learning.

Whilst there is no agreed formal definition of 'professional learning', it could be conceived as those relevant individual or collaborative opportunities, encounters or experiences that promote enhanced skills, knowledge, capabilities and practices that are situated within an academic's own career development and may also meet present and future organisational

objectives. Examples of professional learning could include: informal conversations with colleagues or students; attending workshops or conferences; reading journal articles; visiting museums or art galleries, etc.

What will you be required to do?

A small sample, drawn from those participants who expressed an interest in taking part in the interview process, will then be selected from the online questionnaire based upon a broad demographic criteria (i.e. role, gender, faculty). These participants will then be required to:

- take part in an in-depth interview to explore their experiences and approaches to professional learning;
- take part in a second in-depth interview using photographs that they have taken of the spaces, tools and materials that they perceive as helping or hindering their professional learning activities. A short training / briefing session will be provided beforehand to help participants with this part of the study.

Each interview is expected to take <u>one hour</u>.

To participate in the research you must:

be a member of academic staff currently working at Canterbury Christ Church University.

Procedures

Drawing from the participants who agreed to take part in the interview process from the online questionnaire, a small sample is then selected based upon the following demographic:

- employment status (i.e. part-time, full-time);
- representation from a range of academic roles (i.e. early career, senior manager);
- gender;
- representation across all Faculties;
- representation from all campuses (i.e. Canterbury, Medway, etc.).

From this sample, those participants will be invited to take part in the interview process to further understand the extent in which they engage with their professional learning.

If invited, you will, by mutual agreement with the lead researcher, decide and agree upon a time and place for the first interview. The interview itself will consist of between 7-9 semi-structured questions.

Prior to the second interview, you will invited to attend a short training / briefing session that will offer you some advice and guidance on how to take photographs of those spaces and places where you tend to do most of your professional learning - it will also provide advice on ensuring that those objects, items and tools that assist you in your learning are contextually situated within the photographs. You will need to have attended this briefing / training session before the second interview.

Once again, you will, by mutual agreement with the lead researcher, decide and agree upon a time and place for the second interview. The interview itself will be open and driven by the content of the photographs that you have taken.

Both interviews will last one hour and will take place on one of the Canterbury Christ Church University's campuses (Canterbury, Broadstairs, Medway or Tunbridge Wells).

The lead researcher would like to make a digital voice recording of both interviews to assist with his note-taking.

Feedback

A full, publicly accessible, doctoral thesis will be published on the University's Institution Repository (CReaTE) at http://create.canterbury.ac.uk/ in mid-2018.

Confidentiality

All data and personal information will be stored securely in accordance with the Data Protection Act 1998 and the University's own data protection requirements. All data obtained in the course of the research will be confidential and treated with respect and no individual will be identified in any report or publication. The data collected during the research will be securely stored and used only for research purposes. Some interview recordings may be shared with a third party transcriber, for which a confidentiality agreement will be put in place. Otherwise, your personal information will not be seen nor accessible by anyone other than Wayne Barry.

If you wish, I will send a copy of the interview transcript to a pre-arranged safe address. This will help you decide whether you want your interview to be made available to use for my research. A copy of the interview recording can also be provided if requested.

You would be asked to read or listen to the interview and consider if there was anything you would like to change or remove, to keep anything secret or hide your identity, or to delete or change some of your interview. I can remove any sections that you do not want me to use.

Selected contents of interviews may be used in project reports, publications and to guide educational professional practice, but will be anonymised and neither your colleagues nor others will be able to identify you. All data will be destroyed on completion of the project (early 2023).

Dissemination of results

I will produce a thesis for my Doctorate in Education Degree in early 2018 which will be uploaded into the University's Institution Repository (CReaTE). I will use the findings to inform future approaches to professional educational development. I also hope to present my findings to at least one external conference and publish in at least one academic journal.

Deciding whether to participate

If you have any questions or concerns about the nature, procedures or requirements for participation do not hesitate to contact me. Should you decide to participate, you will be free to withdraw at any time without having to give a reason.

Any questions?

If you have any comments and/or queries about the research, please contact the lead researcher:

Wayne Barry

w.barry62@canterbury.ac.uk

Learning & Teaching Enhancement
Canterbury Christ Church University
North Holmes Road
CANTERBURY
Kent CT1 1QU

01227 782940 (ext. 3076)

APPENDIX IV

Consent Form

Title of Project:

The Professional Learning of Academics in Higher Education: A Sociomaterial Perspective

Name of Researcher: Wayne Barry

Contact details:

Address:	Learning & Teaching Enhancement (LTE) Canterbury Christ Church University North Holmes Road, CANTERBURY, Kent CT1 1QU

Tel:	01227 782940 (ext. 3076)

Email:	w.barry62@canterbury.ac.uk

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

3. I understand that any personal information that I provide to the researchers will be kept strictly confidential.

4. I agree to interviews being audio-recorded for the above study.

5. I agree to take part in the above study.

_____   _____   _____

Name of Participant   Date   Signature

_____   _____   _____

Researcher   Date   Signature

APPENDIX V

Consent Form for Use of Images

Title of Project:

The Professional Learning of Academics in Higher Education: A Sociomaterial Perspective

Photographs taken by you (in electronic or print form) would be used to add interest and exemplify the research findings. For example, they may be used as illustrations in doctoral thesis, website summaries, research reports, summary leaflets, newspapers articles and/or conference presentations. All photographs will be securely stored by the lead researcher and will not be used outside of the research study without your permission.

Name of Researcher: Wayne Barry

Contact details:

Address:	Learning & Teaching Enhancement (LTE)
	Canterbury Christ Church University
	North Holmes Road, CANTERBURY, Kent CT1 1QU

Tel:	01227 782940 (ext. 3076)

Email:	w.barry62@canterbury.ac.uk

Please initial box

1.   I understand that my interview responses will be linked to the photograph(s).

2.   I understand that my name will not be linked to the photograph(s).

3.   I give the lead researcher permission to:

  -   use my photograph(s) on websites.

- use my photograph(s) in printed material (e.g. doctoral thesis, reports).

- use my photograph(s) in presentations (e.g. at conferences or seminars).

_____   _____   _____

Name of Participant   Date   Signature

_____   _____   _____
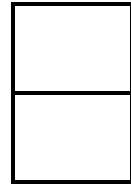
Researcher   Date   Signature

APPENDIX VI

Online Academic Staff Questionnaire

Welcome to the Academic Staff Survey on Professional Learning

Welcome to the academic staff survey on professional learning.

ABOUT THE SURVEY

This survey is being carried out by Wayne Barry, a learning technologist based in Learning and Teaching Enhancement (LTE), as part of his Doctorate in Education (EdD) with Canterbury Christ Church University.

There are many dimensions to an academic's role that can include: research, teaching, administration, personal tutoring, knowledge exchange, public engagement, outreach, and in some cases, practitioner (e.g. law, health-related).

This survey aims to understand the extent to which academics in higher education engage with professional learning and to help highlight those conditions (i.e. those places occupied, those tools and materials used) that facilitate and influence how academics might engage with their professional learning in order to fulfil those many dimensions to their role.

The survey is divided up into **two parts**: The first part of the survey asks questions relating to your professional learning activities. The second part is concerned with your demographics (e.g., gender, age, your role within the University) and may be helpful in looking for any differences between groups of people (e.g., between men and women or between age groups).

DEFINITION

Whilst there is no agreed formal definition of 'professional learning', it could be conceived as those relevant individual or collaborative opportunities, encounters or experiences that promote enhanced skills, knowledge, capabilities and practices that are situated within an academic's own career development and may also meet present and future organisational objectives. Examples of professional learning could include: informal conversations with colleagues or students; attending workshops or conferences; reading journal articles; visiting museums or art galleries, etc.

WHO CAN TAKE THE SURVEY?

Any member of academic staff currently working at Canterbury Christ Church University.

HOW LONG WILL IT TAKE?

Between 10 and 15 minutes. Open until **Sunday 24 January 2016** at **12.00pm**.

NOTE: If you skip questions the survey will point them out to you in case you have missed them by mistake, however, you **do not** have to answer any questions which make you uncomfortable.

ANONYMITY

This survey uses Qualtrics which means your response to questions in the survey will always be treated anonymously.

SUPPORT/QUERIES

Contact: w.barry62@canterbury.ac.uk

INFORMED CONSENT

For the purposes of informed consent please read and check the following statements:

- I can confirm that I have read and understood the participant information.
- I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.
- I understand that any personal information that I provide will be coded to maintain my anonymity and be kept strictly confidential.

--> Click the **CONTINUE** button to take the survey

Professional Learning Engagement

In this part of the survey, I am going to ask some questions about your professional learning activities; where your professional learning takes place; and some of the barriers that might prevent you from engaging with professional learning.

A) About Your Professional Learning

I would like to start by asking some questions about what you are learning in order to fulfil those many dimensions to your role and how much time you are able to commit to it.

1. Rank the following activities in order of where **<u>most</u>** of your professional learning time tends to be spent.
   1 being the activity where most time is being spent, and 9 being the least.

   - Learning & Teaching (i.e. new Assessment & Feedback processes, etc.)
   - Research / Subject Discipline (i.e. Reading and/or Writing Journal Articles, etc.)
   - Knowledge Exchange (i.e. Enterprise Development, Business Engagement, etc.)
   - Public Engagement (i.e. Radio Interviews, External Consultancy, etc.)
   - Institutional Agendas (i.e. CCPIP, Employability, etc.)
   - Pastoral Obligations (i.e. Student Accommodation, Student Finances, etc.)
   - New Technology (i.e. e-Feedback, e-Portfolio, etc.)
   - Administration (i.e. Business Planning, Risk Assessment, COAC, etc.)
   - Leadership & Management (i.e. Programme Director, Head of School / Section / Subject)

2. Thinking about Question 1 above, how many hours, approximately, do you spend on professional learning activities **<u>per academic term</u>** ? (*please click where applicable*)
   - less than 1 hour
   - 1 – 5 hours
   - 6 – 10 hours
   - 11 – 15 hours
   - 16 – 20 hours
   - 21 – 30 hours
   - 31 – 40 hours
   - 41 – 50 hours
   - more than 50 hours

3. Thinking about Question 2 above, how **satisfied** are you with the amount of time you are able to commit to your professional learning activities? (*please click where applicable*)

1	2	3	4	5
Not at all satisfied	Slightly satisfied	Moderately Satisfied	Very satisfied	Extremely satisfied

4. Thinking about the ways in which you engage in professional learning, use the bars to indicate the percentage of **engagement** spent on an activity.

Notes:

   a) If you have no engagement with a particular activity, leave the bar set to zero.
   b) If you do a particular activity that is not listed, please record it under 'Other' and set the bar accordingly.

Activity	10	20	30	40	50	60	70	80	90	100
Attending / presenting at CCCU workshops and conferences										
Attending / presenting at external workshops and conferences										
Conversations with CCCU colleagues in your subject department (face-to-face)										
Conversations with CCCU colleagues in another subject department (face-to-face)										
Conversations with CCCU students in your subject department (face-to-face)										

Conversations with external peers in your subject discipline (face-to-face)										
Conversations with external peers in your subject discipline (Email, Skype, etc.)										
Formal award-bearing course (e.g. Masters, PhD, etc.)										
Reading books, articles, etc. about teaching and learning										
Reading books, articles, etc. about your subject discipline										
Guidance from a mentor / supervisor										
Online learning (e.g. doing an online course)										

5. Are you are currently **enrolled**, as a student, on a professional / postgraduate programme of study? (*please click where applicable*)

   - Yes
   - No

   If 'Yes', what is the **primary type** of programme of study you are undertaking? (*please click where applicable*)

   - Master's degree
   - Doctoral degree
   - Professional course
   - Other (*please specify*)

6. Do you keep **records** of any professional learning activities that you engage in? (*please click where applicable*)

   - Yes
   - No

If 'Yes', could you provide some brief details on how and why you keep these records?

B) Where Your Professional Learning Takes Place

I would now like to ask you some questions about where your professional learning activities tend to take place.

7. Which of the following locations do you tend to do **<u>most</u>** of your professional learning activities?

   Notes:

   a) Indicate this by selecting the strength of your preference towards this location.
   b) Next, where appropriate, briefly explain whereabouts in that location you tend to occupy and why.
   c) If you do not use a particular location, choose 'Not Applicable' and offer a brief reason for not using it.

LOCATION	PREFERENCE for LOCATION				WHEREABOUTS & WHY
	Least Preferred	Somewhat Preferred	Most Preferred	Not Applicable	
CCCU University Library					
Another University Library					
Public Library					
At Work					
At Home					
Green Areas (i.e. Parks, Woodland)					
Coastal Areas (i.e. Beaches)					
Transitory Areas (i.e. Airport Terminals, Train Stations, Bus Stations, Bus, Taxi, and Train)					
Online (i.e. Social Media, Discussion Boards, Skype)					

8. Are there any other locations **<u>not listed</u>** in Question 7 above, where you go to engage in professional learning activities? (*please click where applicable*)

    - Yes
    - No

    If 'Yes', could you provide some brief details on this particular location and why you use it?

C) Career Development vs. Organisational Objectives

I would now like to ask you some questions about of the importance in engaging with professional learning to support the development of your career and/or to meet the present and future needs of CCCU.

9. Rank the following activities in order of where **<u>you</u>** would **<u>prioritise</u>** most of your professional learning to support your career development.
    1 being the activity which you prioritise the most, and 9 being the least.

    - Learning & Teaching (i.e. new Assessment & Feedback processes, etc.)
    - Research / Subject Discipline (i.e. Reading and/or Writing Journal Articles, etc.)
    - Knowledge Exchange (i.e. Enterprise Development, Business Engagement, etc.)
    - Public Engagement (i.e. Radio Interviews, External Consultancy, etc.)
    - Institutional Agendas (i.e. CCPIP, Employability, etc.)
    - Pastoral Obligations (i.e. Student Accommodation, Student Finances, etc.)
    - New Technology (i.e. e-Feedback, e-Portfolio, etc.)
    - Administration (i.e. Business Planning, Risk Assessment, COAC, etc.)
    - Leadership & Management (i.e. Programme Director, Head of School / Section / Subject)

10. How important do you consider engaging with professional learning is to your **<u>career development</u>**? (*please click where applicable*)

1	2	3	4	5
Not at all important	Slightly important	Moderately important	Very important	Extremely important

11. How important do you consider engaging with professional learning is to meeting **organisational objectives**? (*please click where applicable*)

1	2	3	4	5
Not at all important	Slightly important	Moderately important	Very important	Extremely important

D) Barriers to Professional Learning

Finally, I would like to ask you a question about those barriers that prevent you from engaging with your professional learning activities.

12. What **barriers**, if any, prevent you from engaging in professional learning? (*please click all that apply*)
    - Lack of time
    - Travel to another site / campus
    - Lack of relevance
    - Cost
    - Lack of encouragement from the section / school
    - Too few colleagues from own discipline area
    - Too many colleagues from own discipline area
    - Own learning is a lack of priority
    - Quality of previous experience
    - Lack of time to follow up afterwards
    - No accreditation
    - Lack of incentives
    - Concern that engaging in professional learning / development is seen as a weakness
    - Style of the event (e.g. workshop, conference, debate)
    - Do not feel that professional development / training helps me

- Getting release time to attend the event (e.g. workshop, conference, debate)
- Unaware of the event (e.g. workshop, conference, debate)
- Family commitments
- Other (*please specify*)

E) Any Other Comments On Your Professional Learning Activities

13. Please use the following open text box for any comments or remarks relating to any aspect of your professional learning that has **not** been covered in this survey.

Demographic & Contextual Information

Thank you. For the final part of this survey, I am just going to ask you some demographic details about you and your current role(s). This is to try and help me to provide some context with regard to your professional learning activities.

As a reminder, your answers are anonymous. However, whilst your answers here would be useful you are not obliged to answer anything which you are not comfortable telling me about.

A) About You

I would like to start by asking some questions about you.

14. What is your age group? (*please click where applicable*)
    - 21 – 30
    - 31 – 40
    - 41 – 50
    - 51 – 60
    - over 60
    - Prefer not to say

15. What is your gender? (*please click where applicable*)
    - Female
    - Male
    - Other

- Prefer not to say

16. Do you have a disability or an impairment? (*please click where applicable*)
    - Yes
    - No
    - Prefer not to say

    If 'Yes', could you provide some brief details? (*this is entirely optional*)

17. What is the highest academic qualification you have achieved? (*please click where applicable*)
    - Bachelor's degree
    - Master's degree
    - Doctoral degree
    - Other (*please specify*)

B) About Your Current Role

I would now like to ask some questions about your current role at Canterbury Christ Church University.

18. Which faculty do you belong to? (*please click where applicable*)
    - Arts and Humanities
    - Education
    - Health and Wellbeing
    - Social and Applied Sciences
    - Other (*please specify*)

19. What sort of role(s) do you currently hold? (*please click all that apply*)
    - Programme / Pathway Director
    - Module Leader
    - Principal Lecturer
    - Senior Lecturer
    - Lecturer
    - Associate / Sessional Lecturer

- University Instructor / Teaching Assistant
- Reader / Research Fellow
- Head of Subject / Section
- Head of School
- Member of SMT / Dean
- Other (*please specify*)

20. Which campus are you mainly located in? (*please click where applicable*)
- Canterbury Campus
- Broadstairs Campus
- Medway Campus
- Salomons Centre
- Other (*please specify*)

21. Do you work part-time or full time? (*please click where applicable*)
- Full Time
- Part-Time (71-90% of full time hours)
- Part-Time (50-70% of full time hours)
- Part-Time (less than 50% of full time hours)
- Sessional

22. What is your current employment status? (*please click where applicable*)
- Permanent employment (an on-going contract with no fixed end-point before the age of retirement)
- Fixed-term contract (for a period of more than 1 academic year)
- Fixed-term contract (for a period of 1 academic year or less)
- Sessional contract

C) About Your Experiences Working In Higher Education

Finally, I would like to ask some questions about your experiences in working in Higher Education.

23. How many years have you taught in Higher Education? (*Where possible exclude extended periods of absence, e.g. career breaks*)

- less than 1 year
- 1 – 5 years
- 6 – 10 years
- 11 – 15 years
- 16 – 20 years
- more than 20 years

24. Have you taught in Higher Education outside of the United Kingdom? (*please click where applicable*)
- Yes
- No

If 'Yes', how many years were spent teaching in Higher Education outside of the United Kingdom (*use numbers only*).

25. Have you taught in any other educational settings besides Higher Education? (*please click where applicable*)
- Yes
- No

If 'Yes', which educational settings have you taught in? (*please click all that apply*)

- Early Years Education
- Primary Education
- Secondary Education
- Special Education
- Further Education
- Vocational Education
- Other (*please specify*)

26. Do you have a postgraduate qualification or equivalent to teach in Higher Education (e.g. PGCLT(HE), PGCAP, UCAP)? (*please click where applicable*)
- Yes
- No
- Currently undertaking such a qualification

- Don't Know

D) Involvement In Follow-Up Interviews

27. Would you like to be involved in the follow-up interviews? (*please click where applicable*)
    - Yes, I would like to participate in the follow-up interviews (e-mail address needed)
    - No, thank you

Thank you, please enter your e-mail address and I will include you in a list of participants who would like be involved in the follow-up interviews. Your responses to questions in this survey will still be treated anonymously.

Debrief

At the end of the staff questionnaire, the following statement is displayed:

Thank you for completing this questionnaire. It will help us to understand the extent to which academics in higher education engage with professional learning and will help to highlight those conditions (i.e. those places occupied, those tools and materials used) that facilitate and influence how academics might engage with their professional learning.

We will be collecting data for several weeks yet. If you would like to know more, feel free to e-mail the researcher at w.barry62@canterbury.ac.uk

Or contact by post:

Wayne Barry
Learning and Teaching Enhancement
Canterbury Christ Church University
North Holmes Road
CANTERBURY
Kent CT1 1QU

After **Sunday 21 February 2016** a full analysis should have been completed and we can then give you general information about the results if you wish.

APPENDIX VII

Academic Staff Interview Schedule

Thank you for being willing to take part in this interview to discuss the extent in which you engage with your professional learning. Can I first assure you that you will remain completely anonymous, and you will not be identified in any reports or publications.

No	Question	Prompts	Examples
0	Before we begin, could you state…	Your subject discipline; Your current role(s); and How long you've been teaching in HE?	
1	Thinking about your professional learning, what is it that you learn?	How do you prioritise one form of knowledge over the other? When would you do that? Why would you do that?	*Subject Discipline?* *Learning & Teaching?* *Current Practice? (if education, health, law, etc.)* *Organisational Policies?* *Other?*
2	How do you engage with your professional learning activities?	Does this differ depending on the type of knowledge you are learning? If so, how does it differ? Why is it different?	*Reading?* *Writing?* *Discussions with Colleagues, Students and/or Peers?* *Conferences* *Seminars / Workshops?* *Internet Searches?* *Other?*
3	Where does much of this professional learning activities take place?	Why do you use this place for your professional learning activity? Does this place differ depending on the type of knowledge you are learning?	*Work?* *Home?* *Library?* *Cultural / Natural / Transitory Spaces?* *Other?*

		If so, how does it differ? Why is it different?	
4	When do you engage in your professional learning activities?	How much time do you invest in your professional learning? Does the time you invest differ depending on the type of knowledge you are learning? If so, how does it differ? Why is it different?	*Before Work?* *At Work?* *After Work?* *During the Weekend?*
5	Do you make use of any kinds of tools, objects or equipment to support your professional learning activities?	If so, what do you use? How do you use them? Why do you use them? Do the use of these tools differ depending on the type of knowledge you are learning? If so, how does it differ? Why is it different?	*Pens / Pencils / Highlighters?* *Paper?* *Mobile Device?* *Recording Devices?* *Social Media / Internet?* *Food / Refreshments?* *Furniture?* *Other?*
6	Why do you engage in professional learning activities?	How much importance do you give to your professional learning activities? How much pressure do you feel in engaging with professional learning?	*Career Development?* *Meeting Institutional Agendas?* *Better Student Experience?* *Other?*

		Where is this pressure coming from? Why is this the case?	
7	Thank you very much for helping me and giving up your time. Can I finally ask you if you think there is any aspect of your professional learning that has not been covered in this interview?		

APPENDIX VIII

Slideshow (Photovoice) - A Briefing Guide

Introduction

The purpose of this guide is two-fold: 1) to provide advice and guidance to academic staff on the taking of photographs of those spaces, places and objects that either help or hinder their engagement in professional learning activities; and 2) to ensure academic staff understand the ethical nature of their own research activities within this study. Whilst there is no agreed formal definition of *professional learning*, it could be conceived as those relevant individual or collaborative opportunities, encounters or experiences that promote enhanced skills, knowledge, capabilities and practices that will enable an academic to meet present and future organisational objectives and is situated within their own career development.

What to capture?

Think about those meaningful spaces and places where you tend to do most of your professional learning activities. This could be your office desk at work (e.g. *Figure 1*), around your kitchen table at home, talking to a colleague in the corridor, studying in the library (e.g. *Figure 2*), a quiet spot in the SCR (e.g. *Figure 3*), during your lunch break in a cafe (e.g. *Figure 4*), a conversation on Skype, or on the train to a conference.
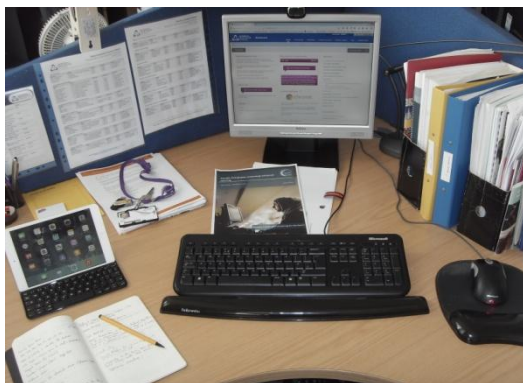
Figure 7: Office Desk   *Figure 8:* University Library
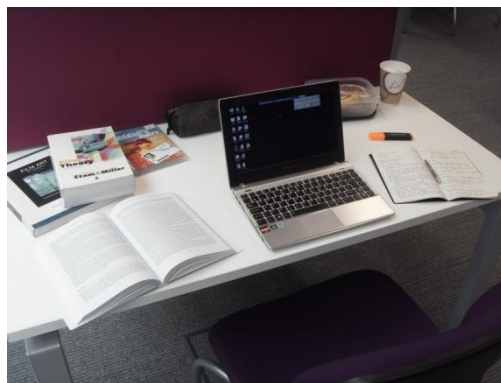
Once you have identified those spaces and places, do try and take photographs of that space whilst *in situ*, that is to say that you would want to try and photograph that space whilst you are actually engaging in your professional learning activity.

Do try and include those tools, objects and materials that you use as part of your professional learning activity, but only in the right and appropriate context (e.g. books, papers, pens, laptops, a cup of coffee, memory sticks, etc.). Do not try and contrive such a scene or include

objects that play no part at all in your professional learning activity. Let the photograph be as natural and as authentic as possible.

Furthermore, think about those spaces, places and objects that get in the way of your professional learning. For example, a picture of a clock or watch might indicate that time is a hindrance, or a picture of a door that leads onto a noisy room might indicate that the noise from that room interferes with a good quality professional learning experience.
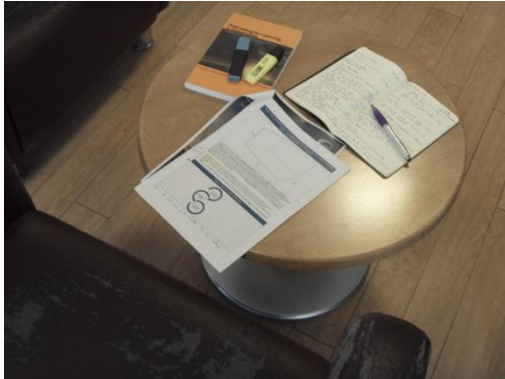
Figure 3: Staff Common Room (SCR)

Figure 4: Cafe

This research study recognises that professional learning can take place almost anywhere and does not necessarily depend on reading literature or accessing information electronically. Learning can take place in cultural areas, such as museums, art galleries, cinemas, and concerts (e.g. *Figure 5*) where ideas may begin to foster and emerge. Similarly, learning can take place in natural areas, such as parks, woodlands, and beaches (e.g. *Figure 6*) where opportunities for reflection and contemplation can take form.
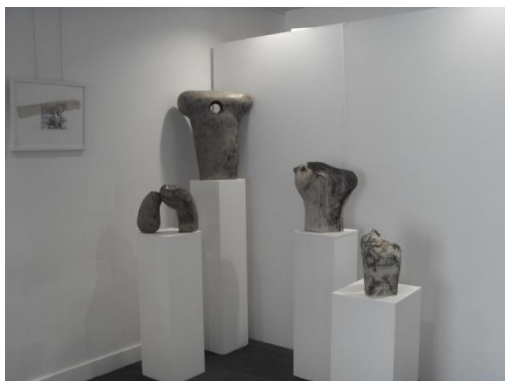
Figure 5: Cultural areas

Figure 6: Natural areas

What not to capture?

It is not necessary for you or anyone else, for that matter, to be included in the photograph, unless the addition of an individual or group is an important factor in your professional learning. In which case, try not to include their faces in the photograph, so that they are not identifiable. In the event of individuals being identifiable within the photograph, they will be pixellated or blurred to preserve their anonymity.

What next?

Once you have taken your photographs and are happy with them. Insert the photographs into PowerPoint, with one photograph occupying one slide, arranging the photographs in a order that has particular meaning to you. Please store the photographs and the PowerPoint presentation on the memory stick that has been provided to you. Send an email to **w.barry62@canterbury.ac.uk** to arrange for the collection of the memory stick. Your slideshow presentation will take place up to three weeks later.

Further help and advice

If you require further help and advice on how to construct a PowerPoint presentation and/or go about taking photographs of those spaces and places that you occupy and/or those objects that you use as part of your professional learning activity, please contact Wayne Barry via e-mail on **w.barry62@canterbury.ac.uk**. Thank you for your patience and co-operation.

APPENDIX IX

Academic Staff Slideshow (Photovoice)

Thank you for being willing to take part in this second part to discuss the photographs you have taken of those places and situations that have either helped or hindered most of your professional learning activities. Can I first assure you that you will remain completely anonymous, and you will not be identified in any reports or publications.

No	Question	Prompts
1	What can you tell me about this photograph? What does it mean to you in terms of your professional learning?	Significance of objects? (i.e. table, chair, etc.) Significance of place or just convenient? Significance of the position of objects? Help or hindrance?
2	What effect does this place /object have upon your professional learning?	Frequency of visit? Duration of visit?
3	What is missing or absent from this photograph that is either out of sight and/or cannot be visually captured that affects your professional learning in some way?	Other objects? Music? Sounds? (i.e. background noise) Smells? (i.e. fresh coffee, baked bread) Temperature? (i.e. too cold, warm, too hot) Lighting? (i.e. too dark, just right, too bright) Touch? (i.e. textures, comfort)
4	Thank you very much for helping me and giving up your time. Can I finally ask you if you think there is any aspect of your professional learning that has not been covered in this focus group?	

APPENDIX X

Transcription Notation

Symbol	Name	Description
JOHN:		Indicates who is speaking.
[text]	Brackets	Indicates the start and end points of overlapping speech.
=	Equal Sign	Indicates the break and subsequent continuation of a single interrupted utterance.
(.)	Short pause	A brief pause.
(…)	Long pause	A longer pause.
↓	Down Arrow	Indicates falling pitch.
↑	Up Arrow	Indicates rising pitch.
>text<	Greater than / Less than symbols	Indicates that the enclosed speech was delivered more rapidly than usual for the speaker.
<text>	Less than / Greater than symbols	Indicates that the enclosed speech was delivered more slowly than usual for the speaker.
°	Degree symbol	Indicates whisper or reduced volume speech.
CAPITALS	Capitalized text	Indicates shouted or increased volume speech.
underline	Underlined text	Indicates the speaker is emphasizing or stressing the speech.
:::	Colon(s)	Indicates prolongation of an utterance.
(hhh)		Audible exhalation.
? or (.hhh)	High Dot	Audible inhalation.
(text)	Parentheses	Speech which is unclear or in doubt in the transcript.
###	Triple Hash Sign	Speech which is unintelligible in the transcript.
((*italic text*))	Double Parentheses	Annotation of non-verbal activity.
wor-	Truncated text	Indicates where the speaker has cut-off a word.
@	Ampersand	Indicates laughter.
te@xt		Indicates laughter present in the word.

Adapted from: Hepburn & Bolden, 2013; Jefferson, 1984; 2004

APPENDIX XI

Expanded Academic Role Profiles

An adapted version of the *Academic Role Profiles* (JNCHES, 2005) was developed for the online questionnaire to help cluster academic staff against a range of different academic roles, responsibilities and experiences. It expands upon the original three profiles ('teaching and scholarship', 'teaching and research', and 'research') to provide a more sensitive sampling strategy that recognises the heterogeneous profile of contemporary academic staff. It ensured that no category of academic staff was accidentally excluded from the sample. The revised clusters consist of:

- *Teaching* - Principal responsibilities are related to teaching (e.g. university teachers).

- *Research* - Principal responsibilities are related to research (e.g. research fellows).

- *Professional Practice* - Possesses professional / industry expertise (e.g. law, accountancy, health-related) and/or are engaged in such practices.

- *Teaching & Research* - Duties include a significant amount of both teaching and research (including knowledge exchange).

- *Teaching & Scholarship* - Engaged in teaching and scholarship (scholarship embraces research and knowledge exchange activities including publications, exhibitions, commissions and use of media or form appropriate to the subject).

- *Management & Leadership* - Provides leadership and support to colleagues within the University and are able to shape and influence institutional policies and strategies (e.g. Deans, Heads of School).

- *Professional Services* - Invests significant amount of time (>=50%) in a professional service role (e.g. Faculty Director of Quality, Faculty Director of Learning & Teaching).

APPENDIX XII

Participant Profile Template

A) QUESTIONNAIRE DATA

DEMOGRAPHIC INFORMATION			
Profile ID			
Gender		**Age Group**	
Disability		**Highest Qualification**	

EMPLOYMENT INFORMATION			
Faculty		**Campus**	
Employment Status		**Employment Contract**	
Current Roles			

HIGHER EDUCATION EXPERIENCE			
Years Teaching in HE		**HE PG Certificate**	
Taught outside of UK		**Years Teaching**	
Taught in Non-HE		**Educational Settings**	

PROFESSIONAL LEARNING: ALLOCATION								
Current Professional Learning Time Allocation (1=most; 9=Least)								
L&T	**Research**	**K. Exch.**	**Pub. Eng.**	**Institute**	**Pastoral**	**Tech**	**Admin**	**Leader**
Preferred Professional Learning Time Allocation (1=most; 9=Least)								
Difference (pos=strong preference; neg=weak preference)								

PROFESSIONAL LEARNING: ENGAGEMENT			
Time spent on PL		**Satisfied**	
PL Activities			
PG Programme		**Type of PG**	

		Programme	
PG Records		PG Record Details	
Career Development		Organisational Obj.	

PROFESSIONAL LEARNING: LOCATIONS		
LOCATION	PREFERENCE	WHEREABOUTS & WHY
University Library		
Another University Library		
Public Library		
At Work		
At Home		
Green Areas		
Coastal Areas		
Transitory Areas		
Online		
OTHER LOCATIONS		
Details		

PROFESSIONAL LEARNING: BARRIERS	
Details	
Other Issues	

ADDITIONAL COMMENTS

B) INTERVIEW DATA

PROFESSIONAL LEARNING: COMMENTARY	
What do you learn	
Where do you learn	
When do you learn	
Why do you learn	
What objects do you use	
How do you prioritise	

ADDITIONAL COMMENTS

C) PHOTOVOICE DATA

PROFESSIONAL LEARNING: SPACES & MATERIAL OBJECTS		
SPACE / PLACE	MATERIAL OBJECT	PEOPLE

ADDITIONAL COMMENTS

APPENDIX XIII

Sample Participant Profile Data

Introduction

The anonymised participant profile captures data generated from three sources of information:

- Strand 1 - online questionnaire for academic staff.
- Strand 2 - individual, semi-structured interviews with academic staff.
- Strand 3 - individual, photovoice slideshow and commentary collated by academic staff.

This information is recorded on the participant profile template for each participant. There are a total of twelve participant profile templates. Each profile contains demographic, employment, HE experience information, along with the tools and technologies used, the spaces and places occupied, the various people and discourses that they engaged with, to construct and develop a narrative of the complex sociomaterial practices of professional learning.

Two examples of the participant profile are presented (these are *Participant 5* and *Participant 10* respectively). To ensure the continuing anonymity of the participants, any data that can be used to identify the participant has been removed from these exemplars (e.g. disciplinary affiliation because it would be easy to narrow down the potential individuals who participated in this research).

To indicate areas of interest to the reader, I have created numbered boxes that can be directly referred to within this explanatory text. Text that has been highlighted in yellow concerns those areas that seem interesting and/or important within the data set. Bold text highlighted in green is my personal comments or observations of the data presented. Finally, there are three boxes labelled "additional comments" for each source of information. This is where the participant's narrative is collected.

Areas of Interest

The boxes 5A and 10A calculate the difference between how a participant is currently spending their professional learning time allocation against how a participant would prefer to spend their professional learning time allocation. Where this has been calculated to zero, then there is no change. Where it has been calculated to be greater than zero, then the positive and negative signs are an indication of whether there is a strong (+ve) or weak (-ve) preference towards a particularly topic. For example, Participant 5 has shown a strong preference to do more professional learning that relates to public engagement (+4), but has shown a weak preference to do with anything related to administration (-6). Participant 10, on the other hand, would rather do less professional learning around pastoral care (-3).

The boxes 5B and 10B illustrate that Participants 5 and 10 place a high premium on having conversations with colleagues, students and peers that can inform their professional learning. This type of activity represents examples of informal learning, which are often neglected or not recognised.

An early, explicit reference to the car as being a possible important site in which professional learning takes places is indicated by box 5C. In box 5D, the participant suggests the idea that time can be loosely divided in terms of morning, afternoon and evening, as these simple temporal divisions can determine what sort of work-learning activities will take place.

In these two examples, these particular participants have a different view as to how they prioritise one form of knowledge over another (see Boxes 5F and 10D). For Participant 5, they explicitly prioritise their knowledge to their subject discipline. Participant 10, on the other hand, takes a pragmatic and strategic view to how they prioritise different forms of knowledge: this is based on what they need to know at that particular moment in time.

In constructing the sociomaterial grouping in *Appendix XIV*, this data is drawn principally from the photovoice data (see Boxes 5G and 10E), which has been clearly identified as either enabling or encumbering professional learning. A second set of data was drawn from the interview data (see Boxes 5E and 10C). However, this data could only be used if it was made explicit during the semi-structured interviews that the space, object and/or person enabled and/or encumbered professional learning.

PARTICIPANT #5

A) QUESTIONNAIRE DATA

DEMOGRAPHIC INFORMATION			
Profile ID	#5		
Gender	Male	Age Group	41-50 years
Disability	No	Highest Qualification	Master's degree

EMPLOYMENT INFORMATION			
Faculty	Education	Campus	Canterbury
Employment Status	Full Time	Employment Contract	Permanent
Current Roles	Programme Director Module Leader Senior Lecturer		

HIGHER EDUCATION EXPERIENCE			
Years Teaching in HE	1-5 years	HE PG Certificate	In Progress
Taught outside of UK	No	Years Teaching	N/A
Taught in Non-HE	Yes	Educational Settings	Secondary Education

PROFESSIONAL LEARNING: ALLOCATION								
Current Professional Learning Time Allocation (1=most; 9=Least)								
L&T	Research	K. Exch.	Pub. Eng.	Institute	Pastoral	Tech	Admin	Leader
1	6	9	8	4	5	7	3	2
Preferred Professional Learning Time Allocation (1=most; 9=Least)								
1	3	6	4	7	8	5	9	2
Difference (pos=strong preference; neg=weak preference)								
0	+3	+3	+4	-3	-3	+2	-6	0

5A

PROFESSIONAL LEARNING: ENGAGEMENT			
Time spent on PL	11-15 hours / term	Satisfied	Very
PL Activities	41 - Conversation with peers (in subject discipline) [online] 33 - Conversations with students (in subject discipline)		

5B

	32 - Reading (in subject discipline)		
	21 - Attending / presenting at conferences		
	19 - Conversation with peers (in subject discipline) [face-to-face]		
	17 - Formal award bearing course		
	12 - Guidance from mentor / supervisor		
	11 - Attending / presenting at CCCU conferences		
	10 - Conversation with colleagues (in another discipline)		
	8 - Online learning		
	6 - Reading (in Learning & Teaching)		
PG Programme	Yes	**Type of PG Programme**	Professional Course
PG Records	Yes	**PG Record Details**	Keep an Excel spreadsheet used for reflection and appraisal
Career Development	Extremely Important	**Organisational Obj.**	Very Important

PROFESSIONAL LEARNING: LOCATIONS		
LOCATION	**PREFERENCE**	**WHEREABOUTS & WHY**
CCCU University Library	Least Preferred	
Another University Library	N/A	
Public Library	N/A	
At Work	Most Preferred	All resources are to hand
At Home	Somewhat Preferred	Better if no-one else is at home
Green Areas	Somewhat Preferred	Thinking time
Coastal Areas	Somewhat Preferred	Thinking time
Transitory Areas	N/A	
Online	Somewhat Preferred	General fact finding
OTHER LOCATIONS		
Details	Car - Driving provides useful reflection and planning time	

5C

PROFESSIONAL LEARNING: BARRIERS	
Details	- Lack of time - Lack of relevance - Lack of time to follow up afterwards - No accreditation - Family commitments
Other Issues	N/A

195

ADDITIONAL COMMENTS
He is very pleased with the range of opportunities available and the encouragement given to engage in them.

B) INTERVIEW DATA

PROFESSIONAL LEARNING: COMMENTARY	
What do you learn	- A 9 month induction allowed him to focus on specific things, like L&T - Learnt to use Blackboard (University's VLE) - <mark>Undertaking the PGCAP</mark> - Attended a Chair & Deputy Chairs workshop about the University's rules and regulations - Tries to attend Research & Knowledge Exchange type events - <mark>Conversations with colleagues (over coffee)</mark> - <mark>Thinking of doing a PhD / EdD after PGCAP</mark> - Getting feedback on his article that he is writing - Peer observation (of colleagues) - Reading - Line Manager & Support Manager meetings - Student / Staff Liaison (SSL) meetings - Modular Evaluation feedback - Wants to learn PebblePad (so that he can use it with his students)
Where do you learn 5E	- SCR - likes the <mark>sense of community and a sense of belonging</mark> - Home - Garden - Home – Spare bedroom now acts as an office 5D - Home - Back reception room (overlooking the garden) - Car
When do you learn	- <mark>Admin stuff is done in the morning when he is sharp and alert (where it actually matters)</mark> - <mark>Non-admin stuff is done in the afternoon, allows for thinking, creativity and daydreaming time (where it is not as imperative or critical)</mark> - Also, do some stuff after children have gone to bed in the evening
Why do you learn	- A requirement to keep the job - For the love of learning. Is very inquisitive. - Likes to develop others
What objects do you use 5E	- Blackboard (VLE) - Blogs - Video - <mark>Colleagues</mark> - Microsoft PowerPoint - Coffee - <mark>Students</mark> - <mark>Radio (i.e. Magic, Smooth, or Heart - 80s / 90s music)</mark>

	- TV - iPad - ==Pencil== - Pencil Sharpener - Rubber - Notepad - ==Car== - Desk at home - Sofa - ==E-mail== - Reports - Spreadsheets ("number crunching") - ==Microsoft Outlook== - Lesson Plans - Attendance Sheet / Register - Extenuating Circumstances Request Forms (ECRFs) - ==Smartphone== - ==Wi-Fi== - ==3G== - Apps (Kahootz, Poll Everywhere)
How do you prioritise	- PGCAP is his priority at the moment as it is a fulfilment of having the post. - ==Perceives his priorities around "looking after" his "subject knowledge development".==

5F

ADDITIONAL COMMENTS
[01] Very ==positive and complementary== about the CPD offering at the University.
[02] The ==only pressure he has experienced is marking time== - he was in a ==more stressful job before== coming to the University in which he had very senior positions. **[Resilience]**
[03] Learning & Teaching matters come before anything else **[this notion of keeping "students happy" and that professional learning is a "luxury"]**
[04] Became a PD quite unexpectantly. **[Relatively new to HE and "being an academic"]**
[05] Has been asked to write two book chapters.
[06] Academia is really new to him, will be venturing into "==unexplored territory==" which he is "==quite excited about==". **[A sense of being on a "journey"]**
[07] Previous role, was very much practice-based. Having to get to grips with the theory in order to "become academic". **[There is a clear sense of transitioning between an old and new role / identity]**
[08] ==Felt he was lucky==, in that he had a 5 week lead-in period to learn a lot of stuff before the timetable kicked in.
[09] Very keen to support students as far as possible as the students turn up only once a week and that day is very intense for them. ==Doesn't see it as pressure, just sees it as being a "high priority" for him==. **["Student First"]**

[10] Reading takes place in the SCR.

[11] Likes the hum or buzz in a space (like the SCR). **[Being with others]**

[12] The music from that era (80s/90s) is ==comforting, takes him back to a good place==, a "sort of musical comfort blanket" as he calls it. **[Being in the right mind-set]**

[13] ==Office is an "administrative hub"== - doesn't see it as a place to research and read.

[14] The pencil is a VERY important tool to him. **[It is associated with comforting feelings and very tactile. The pencil allows him to sketch out ideas without having to finalise them (using a pen or electronically)]**

[15] Likes to "gaze into space" **[Reflects the notion of Attention Restorative Theory]**

[16] Doesn't like the University Library - it's "==too impersonal==". It's an "==anti-social place==". Unlike the SCR, he doesn't know anyone in there, so ==feels isolated and disconnected== from the rest of the University.

[17] He is able to think, rehearse and perform in the car on the way to work. **[The car is an important space]**

[18] Will doodle.

[19] Associates working in the mornings as to do with IT and sitting down for a significant period of time. **[Making loose time divisions between the types of work-learn activity that happens in the morning, afternoon and evening]**

C) PHOTOVOICE DATA

5G

PROFESSIONAL LEARNING: SPACES & MATERIAL OBJECTS		
SPACE / PLACE	**MATERIAL OBJECT**	**PEOPLE**
Encumber: - Work - Office (when noisy) Enable: - Car journey - Work - Office (when quiet) - Home - Spare Room Office - SCR - Sports Centre	Encumber: - Cup (never used) - In/Out Tray (not used much) - Wi-Fi (when not available) - Messenger Bag (leave things behind) - E-mail (after hours) Enable: - Pencil - Pencil Sharpeners - Car - Radio - Chewing Gum (Glove compartment) - Bottle of Water (Glove compartment)	Encumber: Enable: - Room Partner / Colleague - Colleagues - Members of a professional association / body

	- Desk (Work)	
	- PC	
	- A4 lined pad	
	- Pens	
	- Car keys	
	- Staff ID card	
	- Desk (Home)	
	- Lamp	
	- A4 Ringed Binders	
	- Comfy chair	
	- Printer	
	- Laptop (work)	
	- Smartphone (iPhone)	
	- Speakers (wireless)	
	- Shelf (work)	
	- Textbooks	
	- Academic Journals	
	- Professional Body Magazines	
	- DVDs	
	- Google Scholar	
	- LibrarySearch	
	- iPad	
	- e-Mail	
	- Apps: Newstand, AutoTrader, BBC News, BBC Sport, Google Earth, eBay, BBC iPlayer, Pinterest, FaceTime	
	- Microsoft Outlook (calendar)	
	- Wi-Fi	
	- Messenger Bag	
	- Visit Forms	
	- Observation Forms	
	- Lunch	
	- Post-It notes	
	- Battery charger (iPad, iPhone)	
	- A4 Academic Diary (Page-a-Day)	
	- Office Window	

ADDITIONAL COMMENTS

[01] He has a real love for the pencil. He likes writing with it. It "feels nice". He feels "more attune with a pencil than a pen". He can be more "thoughtful and creative with a pencil" - he can do more with it and it "feels sort of right that he is doing it with a pencil". Suggests that "with a pencil, it feels like you

can change it, and that's allowed". **[An affordance]** Sometimes feel pen and paper might be "quite archaic", but there is something "organic about pencil on paper". **[A memory associated with the pencil, which is also identified with a former profession]**

[02] He identifies his car as a "private space" that is "undervalued" as a "thinking space", in what he describes as a "private little reflective pod". **[The car and the journey makes a valuable contribution to his professional learning – it is a "safe" and "hidden" space]**

[03] Will have the radio on as "background noise" which tends to be music, as people talking can be distracting.

[04] Has chewing gum and water in the glove compartment as it often helps with thinking.

[05] Makes a lot of notes, both paper and electronic, whilst at his work office desk, where he does a lot of administration, thinking and planning. **[His desk is a "place of industry"]**

[06] His desk has a number of objects that sit there and don't really have much use or purpose: The cup was "given to him", but he "never uses it", but "felt it should be on the desk". **[Sentimental value? Or Nowhere else to place it?]**

[07] The In/Out tray is used sparingly for "things for later on" (filing, top tray) and "key documents that he wants to keep separately" (bottom tray). **[A sense of control and order]**

[08] Water is very much about keeping hydrated, etc. **[Keeping the brain functioning]**

[09] Prefers lined paper as it helps with the drawing of grids. Will do mind maps and other visuals (like bigger text or arrows) as part of his note-taking.

[10] Has learnt to have a book of lined paper (A4) for a specific project.

[11] Does a lot of talking out loud and rehearsing for lectures, talks, presentations or even, chairing a meeting. His reasoning is: *if I was doing something practically with students, I need to be able to make sure it's safe and in the right order and stuff like that. So having that mental rehearsal or thinking out loud [time] is quite important*.

[12] The Spare Room Office overlooks the garden, will recline in his comfy chair and "drink it in". This is very important to him as it allows him to clear his mind and think ... to be able to look into the "infinite distance and daydream". Doesn't particularly like working there at night as he cannot look out of the window. Thinks green is therapeutic. **[A space to "hide" in and to "escape" from the real world]**

[13] Will use the work laptop in the spare room office and will play music on his iPhone (iTunes) through an external wireless speaker system. **[Music to keep him company]**

[14] All the resources he wants is at hand on his work office shelf.

[15] The iPad is seen as something that enables him to be "mobile" (or "on the move") and agile. Has a games folder, so that his kids can play games on it. He has a number of apps (like "Newsstand", "BBC News", "BBC Sport") that can potentially inform his lectures and presentations, around such topics as current affairs, sport, physical activity, and being healthy. **[A sense of mobility and being transient]**

[16] Didn't include a picture of the SCR (he debated whether to include it or not as he wasn't sure whether it was OK or not) or the Sports Centre, which are all important spaces to him. **[Important to**

talk about those things that were not captured, but as important]

[17] He is very happy to be sharing the office with his colleague who also teaches the same subject and are Joint Programme Directors. They have a ==good, easy and relaxed working relationship== that allows them to bounce off each other. **[Sharing an office works for him, but not others]**

[18] Would not like to have an office of his own. Does not like the ==feeling of isolation==; would rather have some background noise, or having someone else to talk to. **[Isolation]**

[19] ==Listening to colleagues' opinions are "important to him"==, even if he doesn't agree with them; he thinks it is "good to have their perspective on things".

[20] The ==messenger bag carries a plethora of objects== (iPad, Water, Lunch, pens, pencils, post-it notes, various forms and paper-based resources, battery charger), ==it symbolises the act of being an agile "remote worker", moving between work and office and office to various partner schools and student placements==. The drawback is things get left inside the bag if he is not using the bag for that day - needs to be disciplined to emptying the bag out. The bag is his "almost self-contained little admin box". **[A sense of mobility and being transient]**

[21] Although he uses Microsoft Outlook, he still keeps an A4 paper-based diary (with a page a day) and will use it to write notes for "==general admin things=="; Has ==A4 so that he doesn't have to fold bits of paper in half== or to carry surplus bits of paper (he is not keen on loose leaves). May do some ==doodling or planning in there as well, as well as drawings of people==. **[Paper as distraction / disruption]**

[22] Looks out of the office window and looks up to the sky and ==daydream (in the afternoon)==. The ==mornings are reserved for admin-related work== (when he is at his sharpest). **[In a sense, the daydream becomes another form of "escape"]**

PARTICIPANT #10

A) QUESTIONNAIRE DATA

DEMOGRAPHIC INFORMATION			
Profile ID	#10		
Gender	Female	**Age Group**	51-60 years
Disability	No	**Highest Qualification**	Master's degree

EMPLOYMENT INFORMATION			
Faculty	Health & Wellbeing	**Campus**	Canterbury
Employment Status	Full Time	**Employment Contract**	Permanent
Current Roles	Programme Director Senior Lecturer		

HIGHER EDUCATION EXPERIENCE			
Years Teaching in HE	6-10 years	**HE PG Certificate**	Yes
Taught outside of UK	No	**Years Teaching**	N/A
Taught in Non-HE	No	**Educational Settings**	N/A

PROFESSIONAL LEARNING: ALLOCATION								
Current Professional Learning Time Allocation (1=most; 9=Least)								
L&T	Research	K. Exch.	Pub. Eng.	Institute	Pastoral	Tech	Admin	Leader
2	5	8	9	4	6	3	7	1
Preferred Professional Learning Time Allocation (1=most; 9=Least)								
2	4	7	8	5	9	3	6	1
Difference (pos=strong preference; neg=weak preference)								
0	+1	+1	+1	-1	-3	0	+1	0

10A

PROFESSIONAL LEARNING: ENGAGEMENT			
Time spent on PL	> 50 hours / term	**Satisfied**	Moderately
PL Activities	77 - Conversations with students (in subject discipline) 61 - Conversation with colleagues (in subject discipline) 41 - Attending / presenting at conferences		

10B
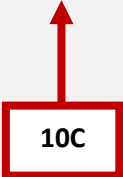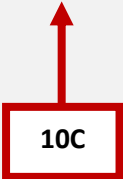
	36 - Conversation with colleagues (in another discipline)		
	36 - Conversation with peers (in subject discipline) [face-to-face]		
	29 - Attending / presenting at CCCU conferences		
	25 - Conversation with peers (in subject discipline) [online]		
	23 - Reading (in subject discipline)		
	10 - Reading (in Learning & Teaching)		
PG Programme	No	**Type of PG Programme**	N/A
PG Records	Yes	**PG Record Details**	Requirement for re-registration
Career Development	Extremely Important	**Organisational Obj.**	Very Important
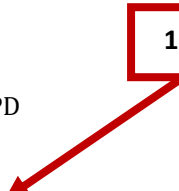
PROFESSIONAL LEARNING: LOCATIONS		
LOCATION	**PREFERENCE**	**WHEREABOUTS & WHY**
CCCU University Library	Somewhat Preferred	
Another University Library	N/A	
Public Library	N/A	
At Work	Somewhat Preferred	
At Home	Somewhat Preferred	
Green Areas	N/A	
Coastal Areas	N/A	
Transitory Areas	Somewhat Preferred	
Online	Least Preferred	
OTHER LOCATIONS		
Details	N/A	

PROFESSIONAL LEARNING: BARRIERS	
Details	- Lack of time - Lack of time to follow up afterwards
Other Issues	N/A

ADDITIONAL COMMENTS
None

B) INTERVIEW DATA

PROFESSIONAL LEARNING: COMMENTARY	
What do you learn	- Checking information on VLE and Intranet - Talking to colleagues - Listening to a presentation - Reading information - Learn from the various societies and associations - Talking to other External Examiners - Collaborating with students - Networking with NHS staff - Likes to learn about new technology (though not a confident user) - Does thinking in the car - Listening to Radio 4
Where do you learn ↑ **10C**	- Staff Events - Programme Director Forums - National Conference - Other HEIs (as an External Examiner) - NHS Trusts - Cafe - SCR - Home - Dining room table - Car
When do you learn	- Learning seems to happen all the time (a form of lateral learning mixed with some informal learning). - Her time is compartmentalise, and she will prioritise what she needs to do on that day. If professional learning needs to happen, she will book that time out - no quibbles.
Why do you learn	- For the love of learning and being at the "forefront of knowledge". She loves being in an ever-changing environment. She likes the opportunities that are on offer and the option of having her "fingers in different pies". - There is an annual CPD requirement from the her professional body, which regulates registration.
What objects do you use ↑ **10C**	- Blackboard (VLE) - online tests, discussion boards, grade centre - Turnitin - Intranet - PC - Hypertext Links - e-Mail - Colleagues - Professional Body - Society Members - External Examiners - Students - Hospital staff - Coffee **[an important daily ritual]**

	- Car
	- Laptop (+Wi Fi, + Electrical Socket)
	- Couch
	- Stool
	- TV
	- Diary
	- Microsoft Outlook
	- Notepad
	- Post-It notes **10D**
	- Radio
	- Box File - certificates, scribbled notes, etc. for CPD
	- Hard drive - folders
	- Remote Desktop Service (RDS)
How do you prioritise	- This priority is very much down to what needs to be done on the day or even in the week. It is her strategy to maintain some form of work/life balance. It is a very pragmatic approach, a lot of her learning is done in a lateral way at the best of times.

ADDITIONAL COMMENTS

[01] Uses the VLE and University Intranet to find out what is going on in her area / school / faculty / University. Likes to be "ahead of the game". **[Someone who likes to be knowledgeable]**

[02] Prefers to listen rather than read, as she has to deal with a lot of "crisis management", which means she has little time to absorb the information she has been given. **[Pragmatic approach to information]**

[03] She does an awful lot of networking with people from all sectors. **[Networking – enables her to become knowledgeable]**

[04] Likes to align her teaching to an evidence base because a) it gives students up-to-date information, and b) she wants to come across as a 'credible' and 'authentic' teacher with practical experience. **[Trust]**

[05] She is seen by colleagues as the "go to person" if you need information as she is perceived as being incredible informed. **[A knowledgeable other]**

[06] Tries very hard to separate work time (i.e. Mon-Fri, 9-5) with home time. Though understands that it is not always possible or desirable. **[Work/Life balance]**

[07] Goes to the gym with her spouse, three classes a week, it is part of their "social regime". **[This starts to hint at "rituals" that are "time-sensitive"]**

[08] She is someone with a wide circle of contacts. She keeps her ear to the ground and is able to make linkages and connections to other conversations she has heard or information she has gathered. **[More networking]**

[09] Work can occasionally intrude in her thoughts during her personal time. **[Work intrusion]**

[10] She will think things through before coming back to a colleagues about it. She will not "come back like a Rottweiler". **[Reflective]**

[11] Has been involved in a number projects and would like to write about them. This has not happened, yet, because there is no space and time to do so. **[Not finding the opportunities]**

[12] The PC comes with a lot of distractions, such as e-mail. **[Digital distractions]**

[13] Will work later at home (if necessary) because she knows she does not have to do a drive in to work as well. She finds the office far too distracting. **[Physical distractions]**

[14] Has a 45 minute car journey and uses it to do some thinking about the day ahead or what she needs to so, or thinks about her teaching period. Will also use that time to rehearse. **[The car and the journey makes a valuable contribution to his professional learning – it is a "safe" and "hidden" space]**

[15] Has a very strong ritual whereby she will get a cup of tea before she starts work OR she has come across a difficult problem and a cup of tea will help her try and come to a resolution. **[Ritual]**

[16] Likes a comfortable space / objects to do "creative" stuff, but these spaces and objects are different where the task is very important (like students' marks) and requires long periods of concentration. **[A need to be in the right state of mind]**

[17] Prefers silence at home to get work done. Will try and do it before family come home, or else she feels irritated by the noise that they make (recognises that it is not their fault). **[Tensions around domestic noise]**

[18] She is not a fan of social media. She is feeling anxious about doing Twiiter and feels a little resentful that she has to engage with it professionally as some member of the team are using it in that capacity. **[New forms of professional engagement]**

[19] Will structure her day around to try and make contact with people, usually through a coffee or lunch break. **[Informal, more networking]**

[20] She finds CPD is a bit of a chore. Though she probably does more than, say, a health professional in a hospital, so feels confident that she has enough evidence to support her registration. **[A formal process that feels a little mechanistic]**

C) PHOTOVOICE DATA

10E

PROFESSIONAL LEARNING: SPACES & MATERIAL OBJECTS - 19 May 2016		
SPACE / PLACE	MATERIAL OBJECT	PEOPLE
Encumber: - Home - Study Enable: - Home - Lounge - Home - Kitchen - Library (when doing Masters) - Train Journeys	Encumber: - e-Mail - Marking - Reports - Clock (Kitchen) - Radio (noise when working) - Sonos (sound system) - RDS (slow) - Washing Machine / Tumble	Encumber: - Spouse (mornings, afternoons) - Children (mornings) - Colleagues Enable: - Colleagues

- Car Journey - Work - Office	Dryer / Dishwasher - Microsoft Outlook Enable: - TV - Sofa - Glass of Milk - Cup of Tea - iPad - Laptop - Kitchen table - Kitchen chair - Cups of coffee - Wi-Fi - Train Carriage - Car - BBC Radio 4 - PC - In/Out Trays (as storage space) - Paper - Folders - Pen - Highlighter Pen - Hole Punch - Stapler - Drawing Pins (in pot) - Paperclips (in pot) - Shelves - Books - Travel Claims - Clip w/ Phone Numbers - Pinboard - Clock (Office) - Diary - A4 Lined Notepad - Post-It Notes - Bottle of Water - Recycling Box - Chocolate Biscuits	

ADDITIONAL COMMENTS
[01] She is up at 6.55am most mornings and starts to think about the day. The TV offers a distraction, so the thinking is quite casual at first. **[The TV distracts from thinking about the day ahead]** [02] She may or may not engage with e-mails on the iPad before setting off to work; it largely depends what her day will be like on the day (e.g. meetings) or whether she is able to work at home when it is

quiet. **[Having some control over her space and time]**

[03] If she is working at home, she will drinks loads of coffee. The work at home will either be marking, writing a report, or preparing a presentation ==where she knows she needs to be away from the University, otherwise she is distracted.== **[The home becomes a "safe" and "hidden" space, it is reconfigured as an office]**

[04] There is a little anecdote about why she sits at the table facing the window. It has something to do with the reliability of the Wi-Fi. If she sat in a different place, it would sometimes cut out. **[Reliability of technology]**

[05] She likes their new sound system, unless she is working. She gets ==quite anxious== about her spouse coming home from work when she is working from home, as he will put the sound system on which streams music, thus ==slowing down internet connectivity to other devices.== **[An interesting example of "space invasion" by disrupting the technology and the ambience]**

[06] The colours in the house are important as they help with comfort and coziness. It gives her a "kind of feel good factor to being in there". **[The notion of "hygge"]**

[07] There is a recognition about getting that ==work-study-life balance right== and had good advice from a colleague. But at the time, ==she "needed" the space.== **[A notion of a "private space" away from home and work]**

[08] She reminisces about going to the University Library when she was doing her Masters and that seemed to work for her. The writing up tended to be done at home. **[A different space for reading and writing]**

[09] A photo of a train was not included, but she does a lot of train journeys as part of her role as an External Examiner, so is able to "==tune out and get on with the things that need to be done==". She feels that train journey offer a "==very purposeful use of time==". **[Making the best use of time; being immersed]**

[10] Does ==a lot of thinking in the car== whilst travelling into work. She has a 45 minute journey. She will be thinking and planning her day ahead and working out what needs to be done first when she arrives. **[The car and the journey makes a valuable contribution to his professional learning – it is a "safe" and "hidden" space]**

[11] The ==car radio==, and BBC Radio 4 in particular, offer a valuable "==information gathering==" tool. It ==supplements her thinking about her own learning and teaching==. It is something she can use in the classroom with her students on the day, so it is very current, very topical and "==hot off the press==" as it were. **[The car radio is very much an unsung agent towards professional learning – the radio at one point would have been considered as an educational technology]**

[12] The ==work office is messy== and she is not worried about that as she knows where everything is. She now keeps papers in folders for easy handling. She actually likes her office as ==she feels like she belongs== there, whereas, in other office spaces she has felt quite nomadic. She would be distressed if she had to be moved from it as she has made ==her office feel very cosy and comfortable.== **[The is a sense of territorialness here, this is "my space"]**

[13] Keeps important telephone numbers to hand of people she contacts regularly on a special clip

[14] There are no photos on the pinboard, but she uses it ==for personal artefacts== like thank you cards from students ot pictures. She doesn't use it for information stuff as it is either in her diary or on the computer. **[The pinboard is used as a "memory wall" for personal and sentimental artefacts]**

[15] She brought a ==clock== in as ==she completely lost the time of day when people came to visit and chat==. But more importantly, it became a way of ensuring that she was not stuck in the office all day and not see anyone or take a tea/coffee break. **[There is a sense of distractions/disruptions, but the clock brings order and structure to the working]**

[16] She often has the window open and the ==noise can be "challenging"== at certain times of the day. People going for a 10am coffee or going for lunch. ==This "noise" acts as a trigger== that she "should be thinking about going to" coffee or lunch. **[A notion that certain noises are "temporal triggers"]**

[17] ==The diary is a VERY important object== as she writes all of her notes in that. Has horizontal lines in the diary to ==indicate important events or activities== will be taking place on those days - thus ==blocking out time that she needs to work==. The highlights indicate collaborate practice teaching days which she needs to be aware of. ==She even writes down activities and events that she is not going to, "because I can be the font of all knowledge"==. **[The diary is a device for managing and structuring time. There is also a notion of being someone in the know – knowledge is power?]**

[18] The car again, but on the way home, she switches to BBC Radio 2 as ==she wants to switch off from work, chill out and relax==. As she points out: "==I think the thing is, I'm starting to unwind by that point and I really don't want to take it all home with me, if I can avoid it==". **[The car on the way home takes on a new aspect – creating a reflective space]**

[19] ==Feels a little frustrated and annoyed by some of the University processes and procedures==: "I feel I play by the rules, and then they don't. I find that frustrating". **[Frustration towards inconsistent approaches to working]**

APPENDIX XIV

Sociomaterial Groupings

Introduction

In constructing the sociomaterial groupings, this data is drawn principally from the photovoice data held on the participant profile template (see *Appendix XII*), which has been clearly identified as either enabling or encumbering professional learning. A second set of data was drawn from the interview data, specifically around the following questions: "Where do you learn" and "What objects do you use". However, this data could only be used if it was made explicit during the semi-structured interviews that the space, object and/or person enabled and/or encumbered professional learning.

There are three areas of interest:

A. Spaces / Places
B. Material Objects
C. People (and Sentient Life)

Each area of interest is comprised of a table containing four columns. The first column ("Location") is divided up using Oldenburg's (1989; 2001) notion of first ("home"), second ("work") and third ("other") place. This indicates that different types of professional learning activity is performed and practiced in these three types of places. The second column contains the actors relating to space/place, material objects, and people respectively. Some of these actors, like "study area", "specialist areas", "digital space", "refreshments", and "accessories" were grouped together for brevity, rather than producing a long, singular list.

The third ("Enable") and fourth ("Encumber") columns were used to record a single point for the first instance that a particular actor was mentioned by the participant. The maximum number of points that can be allocated to each actor, for either the third or fourth column, is twelve (one for each participant). Returning to the participant profile template for each participant and starting with the space/place, material objects and people data listed under the photovoice section, a point is awarded for a first mention of a particular actor. For example, e-mail at work was mentioned as being both an enabler and an encumbering to

professional learning. In this case, the e-mail actor (under the "work" location) would gain one point under the "Enable" column and one point under the "Encumber" column.

Once the photovoice data had been recorded, then the data (the "where" and "what objects" areas) listed under the interview section of the participant profile template were examined. Only actors that made explicit mention of enabling or encumbering professional learning was used. If the item had already been cited in the photovoice section, then it was ignored. If it had not been cited in the photovoice section, then a point would be awarded in the appropriate third and/or fourth columns.

Areas of Interest

Where an actor scored seven or more, thus representing more than 50% of the scores, the cell is colour coded. For those high scores in the third ("Enable") column, the cell is highlighted green. For those high scores in the fourth ("Encumber") column, the cell is highlighted red. Those actors that scored highly (seven or more) were the actors that I will be tracing in *Appendix XV*, where I will be looking for commonalities, differences, and surprises.

Whilst this could be considered as a reductive "bean counting" exercise, it does provide an equitable and transparent means of deciding which particular actors should be traced and then locating the ways that these actors enable or encumber the professional learning of the participants.

A) SPACES / PLACES

Location	Space / Place	Enable	Encumber
Home	Study Area (e.g. lounge, spare room)	9	2
	Bathroom	4	
	Kitchen	3	1
	Garden	2	
Work	Office	8	8
	Hot Desk Areas	1	2
	Staff Common Room (SCR)	5	
	University Library	4	3
	Other Campus Site	1	
	Internal Conference	3	
	Specialist Areas (e.g. Laboratory, IT Labs)	4	
	Classroom	4	
	Cafe Areas	1	2
	Smoking Shelter	1	
	Sports Centre	1	
	Meeting Areas	3	1
	Green Areas	1	
Other	Green / Water Areas	6	
	Coastal Areas	2	
	Museums	1	
	Hospital	4	
	Court Room	1	
	Car journey / route	8	
	Train carriage	6	
	Bicycle journey / route	2	
	Bus journey / route	1	
	Aircraft cabin	2	
	Allotment	1	1
	Youth Hostels	1	
	Digital Space (e.g. Twitter, WhatsApp)	6	
	Sacred Places (e.g. churches)	3	
	Conference Venue	1	
	Recording Studio	1	
	Public Library	4	
	Other University Campus	2	
	Other University Library	1	1
	Pub	2	
	Cafe Areas	2	1

Location	Object	Enable	Encumber
	Swimming Pool	1	
	High Street	1	
	Hotel	1	

B) MATERIAL OBJECTS

Location	Object	Enable	Encumber
Personal (at Home)	Personal Computer (e.g. desktop)	4	
	Mobile Device (e.g. laptop, tablet)	5	
	Smartphone (inc. mobile apps)	9	4
	Email		
	Software (e.g. Word, Excel, PowerPoint)	1	
	Hardware (e.g. printers, USB sticks, headphones)	5	
	Wi-Fi / Bluetooth	5	
	Television	4	2
	Radio / Music / iPod	6	1
	Car (inc. vans)	8	
	Bicycle	4	
	Soft furnishings (e.g. sofa, chair, cushions, bed)	6	
	Hard furnishings (e.g. table)	6	
	Pens / Pencils	3	
	Other Stationary (e.g. rulers, stapler)		
	Paper Materials (e.g. post-it notes, notepads)	3	
	Office Supplies (e.g. in/out trays, binders, etc.)	1	
	Textbooks / Books	1	
	eBooks	3	
	Newspapers / Magazines	4	
	Clothing (inc. shoes)	1	
	Cups/Mugs	2	
	Refreshments (e.g. tea, coffee, fizzy drinks)	5	
	Accessories (e.g. bag, watch)	3	1
	Recreational Objects (e.g. surfboard, LEGO)	1	1
	Domestic Appliances (e.g. washing machines. shower)	3	1
	Garden Appliances (e.g. shed)	3	
	Sentimental Objects (e.g. family / friend gifts)	2	
	Anatomy & Physiology (e.g. blood, cells)	1	
	Artwork	1	
	Prayer	1	
Professional	Personal Computer (e.g. desktop)	8	
	Mobile Device (e.g. laptop, tablet)	9	

(at Work)	Email	1	8
	Software (e.g. Word, Excel, PowerPoint)	8	2
	Specialist Software (e.g. SPSS, NVivo)	4	
	Hardware (e.g. printers, USB sticks, headphones)	7	2
	Specialist Hardware (e.g. heart monitor)	4	
	Wi-Fi / Bluetooth	6	1
	Telephone		1
	Radio / Music	3	
	Soft furnishings (e.g. sofa, chair, cushions)	1	1
	Hard furnishings (e.g. desk)	4	
	Pens / Pencils	7	
	Other Stationary (e.g. rulers, stapler)	5	
	Paper Materials (e.g. post-it notes, notepads)	7	1
	Office Supplies (e.g. in/out trays, binders, etc.)	6	3
	Photocopier	1	
	Textbook / Books	9	
	Journals	9	
	Theoretical Tools & Methods	3	
	University Processes (e.g. marking, prog. validation)	4	7
	University Forms (e.g. workload allocation form, ECRF)	3	6
	University Metrics (e.g. NSS, league tables)	1	1
	University Funding (e.g. grants, capital funds)	3	1
	Cups / Mugs	1	1
	Refreshments (e.g. tea, coffee, fizzy drinks)	5	
	Doors		1
	Water Dispenser		1
	Recreational Objects (e.g. playdough, LEGO)	2	
	Educational Resources (e.g. CDs, DVDs, podcasts)	5	
	Classroom Technology (e.g. IWB, visualisers, clickers)	4	
	Staff Badge	2	
	Sentimental Objects (e.g. family, student / staff gifts)	4	
	Agricultural Instruments (e.g. beehive, trellis)	1	
	Cigarettes / Chewing Gum	2	
	Staff Development Brochure	1	
Other (External)	Train	3	1
	Airplane	1	1
	Bus	1	
	Governmental / Agency Processes (e.g. HESA, HEfCE)	4	1
	Governmental / Agency Literature	2	
	Social Media Services (e.g. Facebook, Twitter)	8	
	Benches (e.g. park, church)	1	

	Competitor Website	1	
	Association / Professional Body Literature	1	
	Sport	3	

C) PEOPLE (& SENTIENT LIFE)

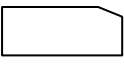| Location	Person / People / Sentient Life	Enable	Encumber
Home	Family (Spouse)		3
	Family (Child)	2	5
	Family (Parent)	1	
	Family (Sibling)	1	
	Family (Pets)	1	2
Work	Colleague (Office Partner)	4	4
	Colleague (Academic)	12	6
	Colleague (Professional Services)	5	3
	Student (Undergraduate)	9	6
	Student (Postgraduate)	4	1
Other	Peers / External Examiners	7	
	Guest Speakers	1	
	Conference Delegates	1	
	Associations / Professional Body (e.g. NMC, Aurora)	4	
	Local Partners / Business	2	
	Public Service Sector (e.g. NHS)	2	
	Professional Learning Network (e.g. Twitter, WhatsApp)	8	
	Voluntary Sector (e.g. Hostels)	1	
	Theorists / Authors	2	
	Animals	1	

APPENDIX XV

Tracing the Actors
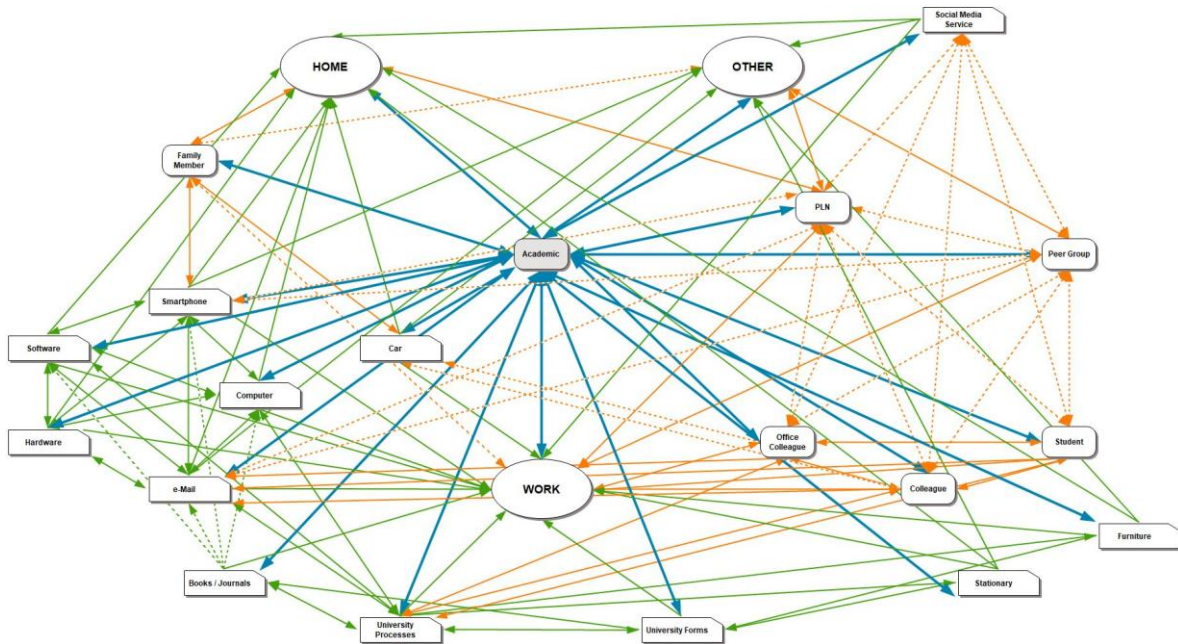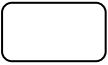
Figure 7: An actor-network map of those elements that enable/encumber professional learning

Key

Symbol	Description
(ellipse)	This represents one of the three spatial locations: home, work and other.
(grey rounded rectangle)	This represents the academic, who is interacting with a range of spaces, objects and people.
(rounded rectangle)	This represents a person or a group.
(tagged rectangle)	This represents a material object.
(blue arrow)	This represents strong interactions / connections between the academic and others.
(green arrow)	This represents strong interactions / connections between people and others.
(orange arrow)	This represents strong interactions / connections between objects and others.

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■ ■ ■ ■ ■ ➤	This represents weak (tentative) interactions / connections between the various entities.

Introduction

Analysis can be *inductive* (patterns, themes and categories that emerge from the data), *deductive* (themes and ideas drawn from theories and compared to data), *abductive* (the most likeliest patterns and themes are drawn from the data available), *retroductive* (speculative patterns and themes are reconstructed from historical data) or a combination of the four (Robson & McCartan, 2016; Cohen *et al*., 2017). My reflexive analytical process included a combination of inductive/deductive analysis.

Using the actors that scored seven or more from the sociomaterial groupings tables (see *Appendix XIV*), I was able to plot each actor using different symbols to represent spaces, objects and people to create an actor-network map (see *Figure 7* above). This actor-network map was produced using the *Inspiration*® visual mapping tool[24]. This map can be enlarged for ease of visibility. A different coloured line was used to represent a particular interaction or connection with a particular space, object or person/group. Where those interactions or connections were weak (or tentative), this was represented by a dotted line. This allowed me to start to "follow the actors" (Latour, 2005) that enabled and/or encumbered the professional learning of the participants. The participants and the various actors involved are enmeshed in different sociomaterial practices.

The criteria for choosing the major themes involved "following the actors". In addition, I was mindful that the participant profiles had produced a rich account of the participants various enactments, encounters and engagements of professional learning inside and outside of the university. I compared the actor-network map with the narratives of the participant profiles to look for commonalities, differences and surprises that would emerge in the data.

Areas of Interest

There were strong inter-related themes concerning the various institutional interruptions and disruptions that were generated through work-related e-mails, sharing offices and confusing institutional processes. There was also a sense that these institutional interruptions extended beyond the workplace. Most of the participants' narratives spoke of "escaping" and/or "hiding" from the disruptive gaze of the institution. They would actively seek out and use

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[24] http://www.inspiration.com/

different spaces and places outside of the institutional space in order to work and learn. A surprising space for professional learning relates to the car and the journey to and from work. This enabled some of the participants to (re)claim valuable space and time.

The actor-network map and the participant profiles highlighted the role that others played in the professional learning and knowledge of the participants. There were explicit references to a person or groups of people who are able to help and reconcile with any knowledge gaps. Perhaps, more implicitly, is the recognition that objects play a role in filling those knowledge gaps too. For most of the participants, it is not gaining the knowledge in the first place, rather it concerns knowing who, what or where to gather that knowledge from in the first place.

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G1

GLOSSARY

A

Academic

This is a person who works as a teacher or researcher at a university or other HEI. They usually hold an advanced degree, such as a Masters or Doctorate.

Academic Developer

This is a person whose role is to actively and purposefully improve the quality of education by enabling academics to reflect upon their academic practice through the academics' engagement with a variety of academic professional development opportunities.

Academic Discipline

Broadly speaking, this is a branch of knowledge that is taught and researched as part of higher education. It can incorporate a range of expertise, people, projects, communities, challenges, studies, inquiry, and research areas that have a strong affinity with a subject area, school or faculty.

Academic Practice

This is professional work which directly contributes to the generation and dissemination of knowledge. This includes learning and teaching, research, and supervising and managing research; and managing academic departments.

Academic Professional Development (APD)

This aims to provide academics with development opportunities for all aspects of academic practice across leadership, professional skills, research, teaching, scholarship and publication.

Academic Role

Most academics have a role which combines research, teaching and administrative responsibilities.

Academic Year (AY)

This is the period between 1 September of one year to the 31 August of the next year.

Actor (ANT)

Broadly speaking, an actor refers to any entity (human or non-human) that can either be a distinct individual (e.g. an academic at a university) or a collective unit (e.g. HEIs within a community). An

actor will constitute a particular network (e.g. an office, an organisation) and is able to make a difference.

Actor-Network (ANT)

The term, *acteur-réseau*, devised by Michel Callon in the early 1980s, later translated to 'actor-network' in English; gained traction in the early 1990s as the term ANT (Mol, 2010). It is a collection of human and non-human actors who jointly participate in some organised collective activity by translating and aligning their interests. It is also known as a *heterogeneous network* (Law, 1992).

Affect (NRT)

It is regarded as those "energetic flows" or intensities that pass between bodies (human and non-human) in ways that generate some form of change (Hill *et al.*, 2014; Thrift, 2008). The concept of affect encompasses passions, moods, feelings, and emotions, but it is not defined by theories of emotion, though affect and emotion have been erroneously used interchangeably (Cadman, 2009; Hill *et al.*, 2014).

Aspectuality

This takes the position that the social and material worlds offer two contrasting, yet intractable ways (or *aspects*) in which everything that comes into existence is experienced or expressed through its relational embodiments (Martine & Cooren, 2016).

Assemblage

This term is derived from French word *agencement* (meaning 'arrangement', 'fitting' or 'fixing'). An assemblage is an array of connections that are composed of an assortment of heterogeneous elements (e.g. objects, practices, ideas, data, events, signs, utterances and affects). Furthermore, it concerns the relationship between the social and material as constitutive components (Suchman, 2007).

Atmosphere (NRT)

It is part of the ever-present backdrop of life and thought, whilst at the same time exerting an embodied sensation upon a person's body without their volition (Anderson, 2009; Anderson & Ash, 2015; Ash, 2015).

B

Black Box (ANT)

A black box contains those things that no longer needs to be considered. All that matters are the inputs and outputs. Anything that operates as a 'black box' becomes resistant to problematisation, allowing for the construction of a stable network (Callon & Latour, 1981).

D

Department for Education (DfE)

The ministerial department of UK government responsible for education and children's services from May 2010.

E

Emergence

Broadly speaking, this concept concerns how in a complex adaptive system (e.g. a professional learning event), novel phenomena (e.g. formation of an online professional learning network) arise out of the rich and recursive interactions with existing phenomena (e.g. HE academics using social media) (Davis & Sumara, 2008; Osberg & Biesta, 2008).

Enactment

This concerns the way in which discourses, practices, objects, technologies, bodies act in ways to construct and distribute a particular reality.

Enrolment (ANT)

The third moment of translation. This involves the focal actor defining roles and relationships that other actors have to assume within a particular network (Callon, 1984).

Entanglement (ANT)

This treats the social and material as comparable and inseparable agencies, whereby the material can influence the social and vice-versa with every routine and process bounded with materiality (Orlikowski, 2007).

European Union Referendum Act 2015 (c. 36)

The Act made legal provision for a non-binding referendum to be held in the United Kingdom of Great Britain and Northern Ireland and Gibraltar, on whether it should remain a member state of

the European Union or leave it. The referendum took place on Thursday 23 June 2016 whereby the electorate voted by 51.9% to 48.1% in favour of leaving the European Union, on a 72% turnout. The term *Brexit* (a portmanteau of "British" and "exit") became a popular short-hand for the prospective withdrawal of the United Kingdom from the European Union.

Event

The term is used to indicate when a number of elements come together within a particular point in time.

F

Fluid

This concerns the state in which objects can transition from their original condition to a new condition as they moves across different contexts and enters new associations with other objects.

Focal Actor

The central actor within the network who attempts to translate the interests of other actors within the network to their own cause.

Free Association (ANT)

This is the third of three guiding analytical principles of ANT. The researcher imposes no *a priori* distinctions between social and natural (or technological) arrangements and events (Callon, 1984; 1986). The aim of this principle is that the researcher is able to identify how the followed actors define and associate different elements, whether they are social or natural (or technological).

G

Generalised Agnosticism (ANT)

This is the first of three guiding analytical principles of ANT. This principle advocates that the researcher must remain impartial as to what or who are involved in a given dispute (Callon, 1984; 1986).

Generalised Symmetry (ANT)

This is the second of three guiding analytical principles of ANT. This is to ensure that there is equity between actors. This is done by the researcher using an abstract and neutral vocabulary to best explain the conflicting viewpoints of the actors (Callon, 1984; 1986).

H

Heterogeneity

From an ANT perspective, this refers to a view of the social world that is composed of a variety of human and non-human elements.

Higher Education (HE)

This is the optional final stage of formal learning that occurs after the completion of secondary education whereby programmes of study lead towards undergraduate, postgraduate and professional qualifications.

Higher Education and Research Act 2017 (c.29)

The Act is intended to create a new regulatory framework for higher education, increase competition and student choice, ensure students receive value for money, and strengthen the research sector. The Act consists of four parts. Firstly, the creation of the *Office for Students* (OfS), which will be responsible for regulating the HE sector - this will replace HEFCE and the *Office for Fair Access* (OFFA). Secondly, amend previous legislation on student financial support and student complaints procedures. Thirdly, the creation of *United Kingdom Research and Innovation* (UKRI) with responsibilities for regulating and funding research. Finally, the Act addresses miscellaneous issues such as transitional arrangements and data sharing. This Act replaced the *Further and Higher Education Act 1992*.

Higher Education Academy (HEA)

This is a charity and membership body which promotes innovation and excellence in teaching, focuses on the contribution of teaching to the wider student learning experience and to student success, offering services across the UK such as professional recognition, surveys and consultancy. The HEA has been in operation since 2003.

Higher Education Funding Council for England (HEFCE)

This is the official agency responsible for the distribution of public money for higher education to universities and colleges in England. HEFCE has been in operation since 1992.

Higher Education Institution (HEI)

This is a term derived from the *Further and Higher Education Act 1992*. According to the Act, it means any organisation that provides higher, post-secondary, tertiary, and/or third-level education.

Higher Education Sector (HE sector)

The *Further and Higher Education Act 1992* has a technical definition of this term, which is quite restrictive and refers to higher education institutions which are authority funded.

Higher Education Statistics Agency (HESA)

This is the official agency responsible for the collection, analyses and dissemination of quantitative information about higher education in the UK. HESA has been in operation since 1993.

Hybrid (ANT)

This refers to an assemblage of actors (humans and non-humans), processes, symbols and information that has been embroiled through the exchange of interactions and associations. For example, a contemporary academic could be thought to be a 'hybrid' composed of books, computers, data, smartphone, pen, paper, desk, chair, conferences, ideas, finding streams, university, subject discipline, and so on and so forth.

I

Imbrication

The social and material are regarded as interwoven, not entangled, agencies that are distinct elements of overlapping patterns, so that the elements function interdependently (Leonardi, 2011).

Immutable Mobile (ANT)

The concept asserts that objects are created through inscription which can be transported over a long distance and still convey unchanging information, since they are not affected by local uncertainties (Latour, 1987).

Information and Communication Technologies (ICT)

The broad subject concerned with all aspects of managing and processing information electronically, on databases or in libraries.

Inscription

This is the process of creating text and communication artefacts to ensure the interests of the actor-network are protected and the roles of actors are recorded.

Inscription Device

This is "any set-up, no matter what size, nature and cost, that provides a visual display of any sort [...]" (Latour, 1987, p. 68), including the creation of texts and visual management tools. Effective inscription devices are both applicable and mobile and can include anything from an institutional policy to an organisation, or a piece of laboratory equipment to an academic conference. These inscription devices are passed around to help establish actor-networks by enrolling other actors into the network.

Institutional Policy

This is an official corporate document reflecting an institution's position, principles, standards, and processes on key issues. Policies exist to protect students, staff and the institution.

Intéressement (ANT)

The second moment of translation. This involves the focal actor seeking out other actors and "locking" them into their assumed roles within the network so that the problem can be resolved (Callon, 1984).

Intermediary (ANT)

This is an entity which reliably transports meaning or elements between entities so that an association can be accomplished. As such, this entity makes no difference (to some interesting state of affairs which is being studied) and so can be ignored. In other words, their inputs are equalled to their outputs. They can be counted as just one entity, though they might composed of many parts (Latour, 2005).

Intra-action

The notion of *intra-action* is used to replace the term 'interaction'. Here, interaction assumes that there separate individual agencies that precede their interaction. In contrast, intra-action recognises that distinct agencies do not precede their interaction, rather they emerge through their particular intra-actions (Barad, 2007, p. 33). As Barad notes, the "distinct" agencies are only distinctive in a relational sense, they do not exist as individual elements (*ibid*.).

K

Knowledge Exchange (KE)

This refers to HEIs' engagement with businesses, public and third sector services, the community and wider public. It includes the transferring or exchanging of knowledge with the aim of delivering external impact, such as improving products, services and profitability. This is linked

with research and teaching, and includes consultancy and advisory work, the creation of intellectual property, the development of academic and student entrepreneurship, and a variety of other activities. In October 2017, it was proposed by the *Department of Business, Energy and Industrial Strategy* (DBEIS) that a *Knowledge Exchange Framework* (KEF) would be used to measure knowledge exchange.

L

Learning

Learning is a highly contested term, but it is thought to be a "multidimensional process that results in a relatively enduring change in a person or persons, and consequently how that person or persons will perceive the world and reciprocally respond to its affordances physically, psychologically, and socially. The process of learning has as its foundation the systemic, dynamic, and interactive relation between the nature of the learner and the object of the learning as ecologically situated in a given time and place as well as over time" (Alexander *et al.*, 2009, p. 186).

Learning Technology

The broad range of communication, information and related technologies that can be used to support learning, teaching and assessment (ALT, 2017).

Lifelong Learning (LLL)

Broadly speaking, this is defined as learning that is pursued throughout life: learning that is flexible, diverse and available at different times and in different places (UNESCO, 1996).

M

Managerialism

This is sometimes known as *New Public Management* (NPM). This refers to the adoption of private-sector, corporate practices into public-sector institutions. These practices promote internal markets and competition; pursues efficiency, effectiveness and economic gain; and has introduced a culture for accountability, auditing and performativity.

Material Culture

This refers to the relationship between physical objects and people, and the type of culture that has been defined by it.

Material Semiotics

This is the study of how the making of heterogeneous associations of actors (human and non-human) and arrangements (organisations, inequalities) are produced. ANT is a sub-set of material semiotics (Michael, 2017).

Mediator (ANT)

This is an unreliable intermediary that can transform, translate, distort, and modify the meaning or elements they are supposed to pass between entities. These do not simply disrupt or destroy associations, but can proliferate and complicate them. In other words, their inputs are not equalled to their outputs which may lead them in multiple directions, thus making them unpredictable. They cannot be counted as just one entity, though they might count for one, for many, for nothing, or for infinity (Latour, 2005).

Mobilisation (ANT)

The fourth moment of translation. This involves ensuring that a spokesperson(s) for the various collective entities within the network are able to 'represent' their respective members (Callon, 1984).

Multiplicity

This is a philosophical concept based upon the mathematical concept. It is the assertion that it is a complex structure that does not reference a prior unity, but originates from a folding or twisting of simple elements, which is in constant flux. Multiplicities are not parts of a greater whole that have been fragmented, and they cannot be considered manifold expressions of a single concept or transcendent unity. It has porous boundaries and is defined provisionally by its variations and dimensions.

Mutable Mobile (ANT)

This concept asserts that objects can reconfigure themselves, that different realities may be loosely rather than rigidly associated, and that multiple actor networks can exist, not just singular ones (Latour, 1987).

N

National Student Survey (NSS)

This is a statistical survey that gathers opinions on the quality of students' HE courses every year. Its purpose is to contribute to public accountability and help inform the choices of prospective students.

Neoliberalism

This is defined as a "theory of political economic practice that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterised by strong private property rights, free markets, and free trade" (Harvey, 2005, p.2).

Non-Representational (NRT)

Rather than studying and representing social relationships, the non-representational is a style of thinking which values practices - how human and non-human formations are enacted or performed – not simply on what is produced (Thrift, 2008). Specifically, it is concerned with "how life takes shape and gains expression in shared experiences, everyday routines, fleeting encounters, embodied movements, precognitive triggers, affective intensities, enduring urges, unexceptional interactions and sensuous dispositions" (Lorimer, 2005, p. 84).

O

Obligatory Points of Passage (OPP)

These are critical network channels. It is often designed by the focal actor to ensure communication must pass through their domain (i.e. the through obligatory points of passage), guaranteeing that all actors become functionally indispensable to the network.

P

Performativity

This refers to the observation that relations and boundaries between the social and material are enacted, rather than fixed, producing particular realities.

Post-1992 University

HEIs which acquired university status as a result of the provisions of the *Further and Higher Education Act 1992*.

Prescription / Proscription

Technologies have 'scripts' integrated into them which affect what can and cannot be achieved with those technologies. Thus, technologies can pre- or pro-scribe the behaviours necessary to ensure that they work. These pre- and pro-scriptions can be altered, thus changing the behaviour of how a particular technology works (Michael, 2017).

Problematisation (ANT)

The first moment of translation. This involves the focal actor (an individual or a group) defining the nature of the problem, identifying the other actors (human and/or non-human individual or group) involved in forming the network, suggesting how the problem is resolved and, in the process, this makes the focal actor "indispensable" to other actors (Callon, 1984).

Professional

This is a member of a profession or any person who earns their living from a specified professional activity. The term also describes the standards of education and training that prepare members of the profession with the particular knowledge and skills necessary to perform their specific role within that profession. Furthermore, most professionals are subject to strict codes of conduct, enshrining rigorous ethical and moral obligations, which are typically maintained through widely recognised professional bodies and associations.

Professional Development (PD)

A range of short- and long-term training programmes, some of which have an option of accreditation, which foster the development of employment-related knowledge, skills and understanding.

Professional Learning (PL)

Professional learning is conceived as a continuous process that develops throughout a professional's lifelong career that encourages reflexivity, criticality and collaboration. It includes some element of context and situatedness leading towards significant shifts in everyday activities and practices. More recently, professional learning has been reframed to become more materially-sensitive by examining how material objects and bodies have become enmeshed within the social performances and practices of these everyday activities.

Professional Learning Network (PLN)

Professional learning networks are unique "systems of interactions made up of people, spaces and tools that support learning and professional growth" (Krutka *et al*., 2017, p. 247).

Professional Services

These are people in non-academic occupations who provide a range of services and support to HEIs. Typically, these occupations tend to be of an administrative, clerical, management or technical nature.

R

Relationality

This term refers to the position that relations are an essential aspect of any contemporary phenomenon.

Research Excellence Framework (REF)

This is an assessment that is carried out periodically to determine the quality of research in UK HEIs. The results are used by the higher education funding bodies for England, Scotland, Wales and Northern Ireland to allocate research funding. The first REF was completed in December 2014. This succeeded the *Research Assessment Exercise* (RAE), with the first RAE taking place in 1986.

S

Scripts

These are instructions, rules or algorithms that are inscribed into technologies that must be followed and adhered to, if those technologies are to work (Michael, 2017).

Semester

A study period of up to 16 weeks, often with the last two weeks used as an assessment period.

Sociomaterialism

This is a theory built upon the intersection of technology, work and organisation. It considers how human bodies, spatial arrangements, physical objects, and technologies (the 'material') are entangled with language, interaction, and practices (the 'social') in organisational life.

Spokesperson (ANT)

This is the actor who has situated themselves within a network in such a way that they are able to speak on behalf of all the other actors within the network, ideally without contradiction. The focal actor can be construed as the spokesperson.

T

Teaching Excellence and Student Outcomes Framework (TEF)

This is assessment that is carried out periodically to determine the quality of teaching in UK HEIs. It provides information to help prospective students choose where to study. The TEF is currently voluntary and each HEI can decide whether or not they wish to take part. Participating HEIs receive a gold, silver or bronze award reflecting the excellence of their teaching, learning environment and student outcomes. The TEF was first introduced in 2016. In October 2017, the *Teaching Excellence Framework* was renamed to the *Teaching Excellence and Student Outcomes Framework*. This change reflected the addition of new metrics (from the *Longitudinal Educational Outcomes* dataset) on student employment outcomes, including those on graduate earnings. Although the acronym will remain as TEF.

TRAC(T)

TRAC for Teaching, a national framework for costing teaching, based on Transparent Approach to Costing (TRAC) principles.

Transgressive Data

This is a type of data that is difficult to quantify or qualify, and can include affective information (e.g. emotions, feelings, dreams, senses) (St. Pierre, 1997).

Translation (ANT)

This refers to the process that enables the network to be defined and controlled. It is through the actors' negotiating and agreeing upon the outcome of the process, identities are established and attributed, power relations are recognised, and scenarios are delineated. Translators, or 'spokespersons', play a key role in this process. This process consists of four interrelated stages or "moments": *problematisation*, *intéressement*, *enrolment*, and *mobilisation*.

Transparent Approach to Costing (TRAC)

A uniform approach to the costing of activities undertaken by all UK HEIs since 2002.