Beyond the ‘user’: Socio-material storylines of the learning management system and lecturer professional identities

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Abstract

This study examines the socio-material interplay between the learning management system (LMS) and lecturer professional identities. Increasingly prominent in higher education institutions, LMSs were especially foregrounded during the swift transition to remote learning in the wake of the pandemic. There has been an abundance of international scholarship related to the LMS, including research into implementation strategies, adoption patterns and online teaching, yet less empirical attention has been paid to lecturers' additional pedagogical and administrative LMS practices. Even rarer are studies which incorporate a socio-material sensibility to trace not only the discursive renderings of identity positioning, but to simultaneously explore how materiality is implicated in producing lecturer selves. Responding to this gap in the literature, the study harnesses a novel theoretical approach, integrating positioning theory, the metaphor of imbrication and the mangle of practice. The social constructionist ethno-case study design permits the research to zoom in on a specific platform, Blackboard, and its contextualised use in a United Arab Emirates (UAE) college. The UAE is a particularly insightful location to study lecturer professional identities given its unique, yet unstable, occupational environment for educators. Blackboard is one of the most prevalent LMSs worldwide, consequently providing a relevant, rich and informative instantiation for a socio-material analysis of an LMS in practice. Visual elicitation interviews with lecturers, interviews with specialists and managers, observations and a document review provide a nuanced account of how lecturer positioning is negotiated through the imbrications of discursive resources, material agencies and power relations resultant to the mandated use of Blackboard. As these socio-material imbrications rewrite narratives of lecturer professional identities, three key storylines are constructed from the data. The first illuminates the LMS as a pervasive force through its ubiquitous availability across time and space, and in its enrolment in the monitoring of lecturers. Secondly, the LMS as a conduit of self-image discusses how the desired self may be projected through course customisation and reveals the identity tensions that lecturers navigate when

enacting pre-packaged course materials. Finally, the LMS as a digital interference compels lecturers to perform as technical stewards with unpredictable material breakdowns subverting lecturer intentions in the mangle of Blackboard practice. The thesis presents some original terms derived from the analysis and a range of subject positions, including the obsessive workaholic, the humanised creator and the expelled social actor. Evidencing a much more complex framing of the lecturer than a mere ‘user’ of a neutral technology, identities are negotiated through a myriad of tensions, albeit with some opportunities for empowering identity work. The thesis concludes by addressing some limitations and proposing potentially fruitful avenues of further research.

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Author's declaration:

This thesis is my own work and has not been submitted in the same form for the award of a higher degree elsewhere. I confirm that the word-count conforms to the permitted maximum.

Signature

Publications derived from work on this doctoral programme

Book chapter

Howard, N. (2023). Kahoot! Gamification as an instructional technology: A socio-material account of nursing lecturers' subjectivities. In M. Garcia, M. Lopez Cabrera, & R. de Almeida (Eds.), *Handbook of research on instructional technologies in health education and allied disciplines* (pp.196–219). IGI Global. https://doi.org/10.4018/978-1-6684-7164-7.ch009

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Chapter 1: Introduction

1.1 Overview

While there is a breadth of extant research focusing on online lecture delivery through digital technologies, this thesis examines the under-researched domain of alternate administrative and pedagogical uses of the learning management system (LMS) and lecturer professional identities. Adopting a novel, integrated theoretical framework comprised of positioning theory (Davis & Harré, 1990), the metaphor of imbrication (e.g., Leonardi, 2011) and the mangle of practice (Pickering 1995), the study traces how lecturer positioning occurs through LMS use. In not only attending to the discursive forms of subject positioning, this study highlights how materiality may also be enrolled in lecturer professional identities by adopting a socio-materiality sensibility. Alongside this sensibility, this study is nested in the critical camp of the broader educational technology (EdTech)[1] debate (e.g., Castañeda & Selwyn, 2018; Selwyn et al., 2017; Swerzenski, 2021).

1.2 Situating the study

Digitalisation and the EdTech agenda in higher education (HE), coupled with the disruption of the pandemic, have challenged educators as they encounter unanticipated role uncertainty (Johnston et al., 2022). Importantly, as the teaching occupation is imbued with a strong sense of professional self (Pasquale & Selwyn, 2023), beyond this recent role ambiguity, these unprecedented times are thought to have significant yet under-researched, consequences for the multifaceted and fluid nature of lecturer professional identities (Foreman-Brown et al., 2022).

[1] Also referred to as ‘edtech’ (e.g., Ramiel, 2021) and ‘ed-tech’ (e.g., Teräs et al., 2020).

My academic interest in professional identities was first cultivated during my MA (Howard, 2019) and subsequently developed throughout this PhD programme. During the course modules, I investigated educator professional identities as they intersect with blended learning (Howard, 2021b), online professional development (Howard, 2021a) and gamification (Howard, 2022, 2023). Acquiring greater insight into the complex nature of lecturer professional identities is constructive, illuminating and relevant not only to the educators themselves, but also to the academic community, institutions and policy makers (Suarez & McGrath, 2022). Understanding, respecting and supporting lecturer professional identity development may enhance student success, motivate and empower educators in the long term and lower their attrition rates in HE (Suarez & McGrath, 2022).

While lecturers may share ostensibly similar roles and status, they may display different identities, which reflect their individual values, ways they perform these roles and engage with the mandated use of EdTech, beyond a homogenous framing of 'user' (Geertshuis & Liu, 2020). However, the understanding we have of how lecturer professional identities are implicated in this continually evolving context is still rather narrow, yet arguably critical, when we consider how digital tools are reshaping practice, processes and communication (Teräs, 2022).

Abstracted from the wider discussions of EdTech, LMSs have been suggested to exert a profound and substantive influence on the occupational practices of lecturers, suggesting that this can create significant shifts in professional identities (Brady & O'Reilly, 2020; Johnson et al., 2014). As lecturers are increasingly interacting with and utilising these platforms for a wide range of teaching (e.g., online classes) and administrative (e.g., grading, curating courses) practices, this raises implications for relationships with, and their positioning of and by, their institution, learners and colleagues (Brady & O'Reilly, 2020; Kirkwood & Price, 2014; McNaughton & Billot, 2016).

While LMSs are increasingly normalised in HE, critical approaches view these platforms as potentially antagonising and alienating environments (Swerzenski, 2021). Unsettling issues arising from LMSs include engendering a transmission model of education, actively refashioning interactions between learner, lecturer and content, usurping lecturer pedagogical authority, contributing to a culture of datafication and embedding institutional surveillance opportunities (Swerzenski, 2021). In this vein, LMS technology may not simply be 'a neutral backdrop to human activity' (MacLeod et al., 2019, p. 185) but a salient material force in educators' occupational task performances (Bolldén, 2016), warranting an investigation with a sensibility to socio-materiality. Human agencies (e.g., leaders, lecturers, learners) with their discursive resources *and* material non-human agencies (e.g., LMS, software, devices) are enmeshed and result in imbrications which produce socio-material outcomes including organisational routines and professional identities (Leonardi, 2012a; Paring et al., 2017; Symon & Pritchard, 2015). The socio-material lens adopted in this ethno-case study accents the need to attend not only to lecturers' experiences, but also to the particular ways lecturers perceive the materiality of the LMS as affording and constraining practices. Moreover, through the interplay of human and material agency lecturers may find themselves in dances of agency as they resist and/or accommodate the LMS and its constituent features (Pickering, 1995).

1.3 Timing of the research

Prior to COVID-19 LMSs were commonly utilised in HE, yet the pandemic perhaps led to a 'tipping point' which will further sediment their adoption (Facer & Selwyn, 2021, p. 10) as courses are increasingly delivered in online and hybrid modes (Islam et al., 2023). With this paradigm shift, the research is timely as we not only grapple with the aftereffects of the pandemic, but also as we reflect on our EdTech use more broadly.

Socio-material identity inquiries in the educational arena tend to focus on students, for example how the material agency of anti-plagiarism software may incorrectly position its users as imposters (Introna & Hayes, 2011) and the stabilisation of learner identities through socio-material arrangements of practice in science education (Van Horne & Bell, 2017). However, HE studies have typically overlooked the socio-material conditions which produce *educator* identities (Brown, 2019), or have done so quite indirectly (Mulcahy, 2011). Some notable exceptions include Howard's (2022, 2023) studies of lecturer identities in gamification, Mulcahy's (2011) account of professional identity as becoming and Lai et al.'s (2020) inquiry into teacher identities in innovative learning environments[2].

On the other hand, noteworthy studies investigating LMSs and the educator's role and professional identity (e.g., Abbott, 2016, Comas-Quinn, 2011; Henderson & Bradley, 2008; Kwon et al., 2021; Liu & Geertshuis, 2019) largely disregard socio-material considerations, with the exception of Johannesen et al. (2012) who reported on how the LMS shapes educators' *agency.* Meanwhile, the growing socio-material scholarship in the organisational literature has demonstrated how the imbrication of ostensibly innocuous workplace objects (e.g., whiteboards and mobile phones) with social actors may contribute to the regulation and performance of identities (e.g., Paring et al., 2017; Symon & Pritchard, 2015) and how information technology artefacts[3] are enrolled into professional identity narratives (Stein et al., 2013). With an absence of studies combining a socio-material perspective while attending to issues of educator professional identity and LMSs, there appears a critical research gap and the potential to make a significant, original contribution to the literature.

[2] Also see Adam's (2017) unpublished PhD thesis on the socio-material analysis of practice teachers' identities.

[3] An object, material or digital entity created and/or used by social actors (see section 3.6).

1.4 Research aim, question and design

It was anticipated that a well-timed, focused inquiry into the socio-material conditions of working with the LMS and the resultant influence on lecturer professional selves could yield important empirical and theoretical insights, 'to ensure that analyses of identities take adequate account of the socio-material conditions within which they are produced' (Brown, 2019, p.17). Mobilising a socio-material sensibility in tandem with positioning theory, I sought to construct the dominant storylines and sub-storylines and interpret subject positions to understand the emergent negotiations of lecturer professional identities. Accordingly, the research question framing this study is:

How are lecturer professional identities negotiated in the socio-material storylines of learning management system use?

The compatibility between the social-constructionist ontology, research design and research question is outlined in detail in Chapter 4. To explain briefly, an interpretive ethno-case study approach (Parker-Jenkins, 2018) was adopted. A document review helped to first contextualise the research site. Next, mobilising interviews to elicit accounts from lecturers, programme chairs and specialists, evinces how lecturers not only positioned themselves, but also draws attention to aspects of the institutional culture and indexing of the lecturers by others in positions of supervisory power. In addition, observations of the lecturers' situated experiences of utilising the LMS was a means of unmuting the materiality of the platform.

1.5 A note on professional identity

As this study was conducted in an *HE* institution, readers might wonder why professional identity, rather than academic identity, was the focus of inquiry. Academic identities are often oriented towards scholarly activities, with professional identities, more broadly, arising through ongoing interpretations of

one's occupational environment (Clarke et al., 2013). The latter is more applicable, since at the research site, and across United Arab Emirates (UAE) colleges and universities, faculty with the designation of lecturer are untenured and not required to hold a PhD nor publish research (Howard, 2021b). The UAE context is further described next.

1.6 Rationale for a UAE-based study

This study was conducted in a federal college which is contextualised in Chapter 5. The UAE has been cited as a 'natural laboratory' to examine academic issues due to its unique occupational milieu and diverse workforce (Al Serhan & Houjeir, 2020, p. 1370). Only 10% of the population are Emirati and education is not a preferred employment option for most national citizens (Sharif et al., 2014). Lacking an adequate supply of qualified Emirati educators, institutions in the UAE rely chiefly on self-initiated expatriates from around the globe to teach courses predominantly delivered in English (Austin et al., 2014; Singh et al., 2021).

Although desirable, these non-national faculty members have no tenure security and are retained on renewable contracts ranging from three to five years (Al Serhan & Houjeir, 2020; Austin et al., 2014). To preserve their visa status, they are required to further educational benchmarks and fulfil specific performance objectives related to teaching and professional development (PD) as established by their employing institution (Al Serhan & Houjeir, 2020). The academic environment in the UAE is undeniably competitive, given the favourable compensation packages with tax-free status, even if it may lead to 'wearing the golden handcuffs' (Hudson, 2019, p.258) and remaining in a position despite becoming jaded and a potential victim of 'academic fatigue' (Al Serhan & Houjeir, 2020, p.1368). Educators may experience difficulties as they are immersed in this occupational milieu and required to navigate a complex, and perhaps alien, interplay of cultural, religious and political ideologies (Hudson, 2019). While the UAE specifically foregrounds the importance of

English, it does so on the condition that it will not negatively influence the students' appreciation of the Arab and Islamic culture (Hudson, 2019). For some, this has created a culture of fearful 'tightrope walkers' (Baalawi, 2009, p. 75) who balance on a precarious line between disparate cultural perspectives and actively self-censure to ensure they do not convey anything 'haram' (forbidden by Islam) in the lecture hall (Raven, 2011).

A further ideology is reflected in the centralised governance of Emirati society, extending to federal institutions where top-down decision making is embedded in an authoritative model of strict power hierarchies (Chapman et al., 2014). This carries over to the present focus on the digital culturation of HE (Eppard et al., 2021), where lecturer uptake of educational technologies may not only influence their professional practice, but directly implicate the longevity of their employment. For example, Donaghue's (2020) UAE study revealed how the compulsory use of iPads resulted in educators largely conforming to institutionally favoured identities of enthusiastic, competent techies to preserve their employment status. However, whilst this unquestioning willingness to embrace technologies as demonstrated by Donahue (2020) may occur, conversely, it is conceivable that others may display a lack of commitment to training and/or adoption due to the inherent insecurity surrounding contract renewal. This may be exacerbated by the stress and burden of managing heavy academic labour including teaching, administration and other occupational duties while trying to sustain a work-life balance (El-Soussi, 2022). In sum, this relatively unstable employment context for non-national lecturers and the significant power dynamic between institution and faculty frames the UAE as a particularly rich ground for the study of professional identities.

In common with most public education providers in the UAE, the research site is pre-equipped with an LMS, seemingly for the purpose of enhancing learners' educational trajectories (Alterri et al., 2020). However, witnessing the varied attitudes lecturers held towards the LMS pre-COVID-19 piqued my specific interest into how this technology is perceived and adopted. Some colleagues

frequently remarked on its indispensability, some were extremely reluctant to engage with it and others were indifferent, suggesting that LMS use patterns may be underpinned by divergent and heterogeneous beliefs, motivations and pedagogical philosophies (Sinclair & Aho, 2018).

Of course, with the pandemic, LMSs were brought sharply into focus, as federal institutions in the UAE formulated preparedness plans and transitioned to remote teaching to mediate the sudden disruptions. This spawned specific research into learning platforms in the UAE at the macro/national level (e.g., Alterri et al., 2020) and quantitative studies at the student and faculty level (e.g., Al-Karaki, 2021; El-Refae et al. 2021; Memon, 2021). However, there is a paucity of qualitative research specifically zooming in on the micro-level: lecturers' LMS experiences and perceptions in the UAE, and consequently, the negotiation of their professional identities.

1.7 Overview of thesis structure

Chapter 2: The next chapter contextualises the current HE climate in the UAE and the adoption of EdTech more broadly. Following this, technology in education is discussed and problematised in relation to essentialist and instrumentalist views, accenting the relevance of a socio-material approach. The review then focusses in on the LMS as a specific technology, reports on the implications its adoption may have for lecturers' experiences and identities and critically zooms in on the LMS utilised at the research locale: Blackboard Learn.

Chapter 3: This chapter expands on professional identity theorising and discusses the relevance of positioning theory (Davies & Harré, 1990) to this study. Furthermore, it argues that beyond a socio-cultural account, attending to the materiality of identity work is also warranted. The chapter concludes with an integrated theoretical framework which combines positioning theory (Davis &

Harré, 1990), the metaphor of imbrication (Leonardi, 2011) and the mangle of practice (Pickering, 1995).

Chapter 4: In this chapter, I describe in detail the reasoning for an ethno-case study approach, align the research design with my interpretivist epistemological and socio-constructionist ontological positioning and explain how the data were analysed, whilst acknowledging some methodological limitations.

Chapter 5: This chapter further contextualises the research context, drawing upon the document review. It presents the overarching storyline of LMS mandated use at the institution and sets the stage for the nuanced storylines and sub storylines presented in the following chapters.

Chapters 6 – 8: The three key storylines are presented in these chapters, respectively: the LMS as a pervasive force, the LMS as a conduit of self-image and the LMS as a digital interference. Within these are the sub storylines, some novel terms derived from the analysis and the interpreted lecturer subject positions which are grounded in identity, positioning theory and socio-material literature. Along with this, each sub-storyline is followed by a discussion of the key findings.

Chapter 9: In the conclusion, the research question is revisited, the originality of the study is presented, limitations are addressed and some avenues for future research are proposed.

Chapter 2: Literature review

2.1 Contextualising educational reform in the UAE

Notwithstanding the remarkable oil wealth of some countries in the Gulf region, most nations in the area strive to position themselves within the global economy, and perhaps nowhere is this more visible than in the wealthy UAE (Ashour, 2020, 2021; Chapman et al., 2014). UAE leaders are invested in gradually transforming the oil-dependent federation into a powerful economy (Onsman, 2011), ensuring that the country, and its citizens, will be positioned to contend as a knowledge-based society in the global arena (United Arab Emirates Government, 2021). Historically, Emirati citizens have shunned employment in the private sector, with 99% of these positions staffed by expatriates (Ashour, 2020). However, presently, UAE government policies are committed to increasing the presence of nationals across all sectors, adopting the nomenclature 'Emiratisation' (Austin et al., 2014, p. 544). To be successful as an *Emiratised* and knowledge-driven nation, government leaders strive to establish an educational programme that is highly competitive in the global arena (Kirk & Napier, 2009).

The pressure to expand the knowledge-based society has driven expeditious developments in technology (Ashour, 2020). Digitalisation, referring to societal arrangements and behaviours vis-à-vis digital technologies, transforms industry (Drumm, 2020; Leonardi & Treem, 2020), communication and meaning making modes (Viberg et al., 2019). Concurrently, it permeates all social, personal, employment and educational activities. In terms of education, demands for augmented quality, mounting expenses and students-as-consumers' lofty expectations steer the adoption of emergent technologies in the field (El Alfy et al., 2017). Whilst the expansion of education throughout swathes of the Middle East has been a formidable success story to date (Chapman et al., 2014), a key focus for UAE HE governance has been leveraging the perpetual development

of technology to augment the sector (El Alfy et al., 2017). Correspondingly, the UAE National Agenda cites digital technologies as critical to education reform:

> *a first-rate education system, which will require a complete transformation of the current education system and teaching methods … aims for all … universities and students to be equipped with Smart systems and devices as a basis for all teaching methods* (United Arab Emirates Government, 2021)

Alongside the substantial costs undertaken by institutions for infrastructure, equipment and technical staff, rallying faculty, administrator and student personal investment in the technology also requires time, training interventions and ongoing support (Kirkwood & Price, 2014). This places greater accountability on how institutions promote the 'ongoing allure of the technological 'fix' in education' (Facer & Selwyn, 2021, p. 3) by embedding strategies to encourage student and lecturer adoption of EdTech effectively.

2.2 EdTech

EdTech is often presented in policy documents as a broadly encompassing term, underpinned by its apparent multiple and pragmatic uses (Czerniewicz & Brown, 2005). Broadly defined, EdTech is characterised by the 'combined use of hardware, software, administrative services and online educational resources to facilitate learning' (Kerssens & van Dijck, 2021, p. 250). As Bolldén (2015, p. 7) observed, the EdTech field 'is like a beloved child with many names,' and has led to a variety of classifications, spanning, for example, 'learning and eLearning technologies' 'online teaching and learning technologies' (Mlitwa, 2007) and 'technology enhanced learning (TEL)' (Bayne, 2015). These terms, which are often used inconsistently, ambiguously or homogeneously, tend to black-box technology (Kirkwood & Price, 2014) and potentially impede our capacity to interrogate the domain (Bayne, 2015; Tallent-Runnels et al., 2006). In some discussions, there is an emphasis on the connection between

knowledge and technology. For instance, technology may be perceived as augmenting the human ability to problem solve, assisting learners with acquiring knowledge and permitting educators to implement more effective pedagogical practice (Mlitwa, 2007). Other conceptualisations, such as TEL, consider technology, equipment and infrastructure as interchangeable (Kirkwood & Price, 2014). Others reference examples of the growing range of EdTech tools emerging over the last two decades, including blogs, wikis, learning objects, MOOCs, (Weller, 2018), dashboards, platforms, learning management systems (Arantes, 2023), gamification, ePortfolios and eBooks (Flavell et al., 2019). Whilst some of these instantiations, such as MOOCs and LMSs, are supported by educational frameworks, the same frameworks expound a particular (non-neutral) vision for how they should be utilised (Cherner & Mitchell, 2019). Meanwhile, external technologies such as blogs, have consistently been leveraged for educational purposes, suggesting that the 'Ed' in EdTech is less prominent than the 'Tech' (Weller, 2018).

Arguably, HE is an intricate, highly interdependent network (Weller, 2018), yet EdTech has been abstracted from practice, perceived as in service to pedagogy, and clouded by a reliance on reductionist views (Bayne, 2015). These views, such as essentialism and instrumentalism, have induced the obscuration 'of a fuller understanding of technologies as social objects' (Hamilton & Friesen, 2013, p. 3).

2.2.1 Essentialist and instrumentalist views of EdTech

The essentialist view attributes a fixed set of characteristics immanent to the technological artefact (Bayne, 2015). Essentialism views technology as neutral; it is merely a tool or an indifferent instrument subject to human control for the realisation of pedagogical objectives that are inherent in the technologies preceding their application in learning contexts (Hamilton & Friesen, 2013; Mlitwa, 2007). Thus, it anticipates that the functions of a particular form of EdTech will result in the accomplishment of a corresponding human capacity

when the technology is leveraged. An additional tenet of the essentialist perspective is the binary, oppositional characterisations of technology and traditional educational approaches (Hamilton & Friesen, 2013). Emphatic discourse asserts that the implementation of new technologies demands a wholehearted transition from previous practices (Hamilton & Friesen, 2013), undergirded by the notion that technology is an inexorable force capable of driving pedagogical shifts (Bayne et al., 2020). Furthering this articulation is the belief that technology is a figurative and physical representation of the desire 'to challenge many deeply held beliefs,' to engender 'new ways of thinking in an institution' (Bates, 2000, pp. 42-43). Overall, essentialism proceeds on the supposition that technology has autonomous didactic worth which can be realised if it is simply accepted and implemented by educators (Hamilton & Friesen, 2013).

Whilst essentialism perceives EdTech's social functions as internalised, instrumentalism foregrounds human users and their pre-established objectives, considering social effects only after the fact (Hamilton & Friesen, 2013). In instrumentalist accounts of digital education, functional educational tasks, such as presenting content, providing feedback and conducting assessments are outlined and then mapped to the abstract features of an EdTech tool (Hamilton & Friesen, 2013). Instrumentalism casts a specific technology as a neutral entity through which pre-determined objectives (for instance, improved teaching) can be accomplished and gauged by how they align in practice to an educational precept or framework (Bayne, 2015). Instrumentalist positions eschew the notion that technology might have its own teleology, or purpose, solely emphasising the user's role in determining the outcomes to which its functionality and perceived benefits are applied (Bayne, 2008; Swer, 2014). Therefore, EdTech's part in influencing social behaviour and identities is elided or neutral in instrumentalist discourse (Mlitwa, 2007): people fashion technology for their own ends and the reverse is left unconsidered. In other words, instrumentalist discourse frames the application of the technological artefact as

a tool but overlooks the deterministic influence of the artefact itself (Du Toit & Swer, 2021).

In the educational field, most research is heavily framed by one of these dominant discourses, and while many such studies have gleaned notable insights into technology use, alternate, critical views which problematise EdTech may address their inherent limitations (Hamilton & Friesen, 2013). Considering the LMS, essentialists may assume that the educational value of the platform will actualise itself independently of the lecturer, while instrumentalists may proclaim that the LMS is a neutral tool lecturers use to achieve their pedagogical goals (Storme et al., 2016). Through both lenses, which have coexisted in 'an uneasy armistice' (Aagaard, 2017, p. 1128), EdTech is established 'as an independent realm of pure technical and scientific law' (Hamilton & Friesen, 2013, p. 3).

2.2.2 Problematising EdTech

Three decades ago, Salomon et al. (1991) contended that EdTech would '… support intellectual performance and enrich individuals' minds' (p. 2). Similar determinist tropes, which espouse a radical essentialist perspective (Lins, 2000), have largely imbued cultural perceptions of technology, underpinned by the sentiment that 'you can't stop progress' (Murphie & Potts, 2002, p. 11). Such views maintain that the pedagogical value of EdTech innovations precede dramatic, steadfastly beneficial and irrevocable educational shifts (Hamilton & Friesen, 2013). This trend is reflected in the extensive research[4] conducted into the digitalisation of HE, including mobile learning, online delivery and blended modes (Olofsson & Lindberg, 2014), largely underscored by hegemonic 'sentiments of cyber-evangelism' (Convery, 2009, p. 35). Research has

[4] The majority proceed with a top-down approach characterised by quantitative impact studies with experimental designs (Hannon, 2013).

suggested that administrators advocate for EdTech's transformative and cost-reducing advantages, learners appreciate flexible educational systems and educators embrace the progressive models of delivery (Hamilton & Friesen, 2013). Meanwhile, technologists' voices echoing the immanent, unquestionable educational benefits of EdTech are often privileged, as educators appear to concede to them and absolve them from any accountability (Selwyn, 2010). This occurs despite technologists' overtones aligning EdTech 'to marry with decontextualised strands of educational theory' rather than *contributing to* theory (Convery, 2009, p. 29). Further compelling is the discourse expounded by other stakeholders including developers, advertisers and investors who appear to 'offer certainty in midst of uncertainty' (Woolgar, 2003, p. 8). Markedly apparent during COVID-19, EdTech companies were represented as positive 'enablers' by investors, and the pandemic was leveraged as a push factor which accelerated the financial odyssey of the metaphorical EdTech vessel (Queraltó, 2021, p. 3).

This biased view of technology may be quixotic, may lead to cavalier investment by HE institutions, and more importantly, impel educators to supress any disconcerting beliefs and wholeheartedly subscribe to the idealism enmeshed in the rhetoric (Convery, 2009). Educators may even face remonstrance if they fail to adhere to the moral commitment to exploit the apparent, immutable benefits of devices and tools which simultaneously, 'insulates the technology from critique' (Convery, 2009, p. 29). Accordingly, it appears germane to question why the discord between this exuberant rhetoric and the lacklustre reality of EdTech use in HE exists (Englund et al., 2017). This requires transitioning from the tenets of transformation and decontextualised evaluative studies towards the micro-level: the educators themselves, since:

> *the most important single step we could take in researching technology so that it enables rather than oppresses teachers' practices and*

professional identities is to avoid engaging with – and thus endorsing – the simplistic rhetoric of makeover politics (Convery, 2009, p.39).

2.2.3 Beyond instrumentalism and essentialism

As scholars in the critical camp have reasoned that the complexity of EdTech is underplayed by crude essentialism, simplistic instrumentalism or futuristic determinism (Castañeda & Williamson, 2021; Drumm, 2020), it follows that these accounts have been largely discredited by the alternative social constructivist lens (Hamilton & Friesen, 2013). This lens proffers 'analyses that trace the blending of the social and the technical in the development of a variety of technologically-mediated processes' (Hamilton & Friesen, 2013, p. 3). In this vein, the design and use of EdTech involves a 'heterogeneous ensemble of social, technical, or scientific elements that agents draw upon in order to frame, instrument, and act upon the issues they confront' (Kallinkos, 2004, p.239). Viewing EdTech as part of a wider ensemble invites researchers to avoid black-boxing technology or viewing it as entrenched and inviolable (Zukas & Malcolm, 2019). Rather, with the implementation of a technology, design alignment and outcomes may vary between different actors and contexts, foregrounding its political power. This misalignment may be to the detriment of some lecturers' interests as heterogenous groups naturally exhibit divergent and often incompatible objectives (Bijker, 2001, Hamilton & Friesen, 2013).

This indicates the need to examine EdTech in relational terms at the nexus of multiple social and technical elements, and to articulate the relationships between educators and EdTech and the institutional decisions that drive its integration (Castañeda & Williamson, 2021). Moreover, through the constructivist lens, specific instantiations of EdTech are not solely invented, used and honed; technological tools and the practice to which they are administered are concurrently constructed through time.

More recently, purely constructivist views of technology have been critiqued for their somewhat narrow theorisations when situated in the broader Social Studies of Technology field (Kallinikos, 2004). Extending on the constructivist perspective, socio-technical, sociomaterial and socio-material[5] approaches further challenge prevailing accounts of technology as isolated from the social and the educator abstracted from the technology, to expose how each is integrated with the other (Bayne, 2015). By adopting a socio-material sensibility (see Chapter 3) we may consider how EdTech is enacted through nuanced interactions between *social* actors and *material* entities in situated educational contexts (Bayne et al., 2020). Such theorising rejects the proposition that EdTech artefacts are generic, decontextualised objects which have no influence on human behaviour or values (Carvalho & Yeoman, 2018) whilst exposing the dynamics that constitute educators' teaching and administrative practice and identities (Fenwick, 2010).

2.2.4 EdTech and educators

Questions surrounding professional identities specifically come into focus in uncertain and contested times, when practices undergo technological change and when institutions exert diverse and sometimes adverse pressures on lecturers (Jensen, 2017). In the context of EdTech adoption, intersubjective relationships, the reflexive potential for considering oneself and professional identity are thought to dramatically shift (Schraube, 2013).

Beliefs are inextricably linked to professional identity as they mediate, in part, how an educator views themselves and the professional tasks they undertake (Billot, 2010; Sachs, 2001). Teacher beliefs have been the focal point in numerous educational studies, including those examining the shift to blended (e.g., Howard, 2021b; Jonker et al., 2018) and online teaching modes (e.g.,

[5] The distinction between sociomaterial/socio-material is elaborated on in section 3.7.

Flavell et al., 2019; Henderson & Bradley, 2008) and technological innovation and integration (e.g., Kim et al., 2013; Lim et al., 2014; Liu, 2011), and of most relevance, the LMS (e.g., Sinclair & Aho, 2018; Walker et al., 2016; Uziak et al., 2018).

Educators' personal, professional and pedagogical beliefs influence their decisions on how (or how not) to integrate technologies in their practice (Tondeur et al., 2017) at the nexus of 'ideological, political, curricular, structural, procedural' influences (Chee et al., 2015, p. 525). If humans' perceptions and beliefs arise, in part, through their situated experiences with technology then 'the more we have tool mediated experiences the more our understanding of the world is situated in the way we interact through tools' (Kirsh, 2013, p. 33). This raises pivotal questions including *What does it mean to be a professional in the digital college?* and *Who am I when I use a particular technology*? (Rice, 2021) and signals an imperative to attend to practitioners' voices.

As much academic interest has been steered by an abstracted preoccupation into the processes of teaching with technology, it has largely underestimated the potential for the image construction of the 'archetypal' HE educator to be recast (Englund et al., 2017). In the contemporary 'learnification' milieu, in which educational discourse is continually translated into a consumerist framing of 'learning' and the 'learner' (Biesta, 2009, 2013), educators' expertise is ostensibly marginalised (Knox et al., 2018). With this, educators' roles *are* being refashioned, such as from the didactic expert to the *learning* facilitator (Howard, 2021b).

Beyond roles, digital technologies have profound influence on the production of lecturer professional identities as they fashion values, beliefs and behaviours and at the same time, these technologies are shaped by social actors' affect and feelings (Castañeda & Williamson, 2021). For Selwyn et al. (2017) digital platforms reframed educators' professional identities as they delineated those who could not use technology proficiently and those who could, with some

demonstrating egotistical hubris and utilising those skills as part of a power display of their own competence. Others suggest that EdTech is complicit in lecturer professional identity occupying a liminal space, with lecturers experiencing disempowerment, precarity and the plausible risk of being positioned as a 'hybrid teacher machine' looming over them (McShane, 2006, p. 94). Furthermore, lecturers are increasingly and ironically being positioned as technical learners and consumers, expected to continuously update themselves on the latest innovations in EdTech (Grimaldi & Ball, 2021). They are steered to attend numerous PD workshops and webinars, often delivered by authoritative yet non-educational experts, who seek to recruit and enthuse these educators with the allure of EdTech augmenting their pedagogical practice (Grimaldi & Ball, 2021)

We may also consider how EdTech alters the very fabric of academic work, including aspects such as work intensification, difficulty disengaging from technology during one's downtime and increasing auditing and monitoring possibilities (Selwyn et al., 2017). Additionally, owing to the complexity of HE landscapes, the inextricable intertwining of social and material, the myriad of educator beliefs and the potential identity shifts arising in heterogeneous contexts of practice (Fenwick & Edwards, 2011), acknowledging the diversity of EdTech and directing research towards specific instantiations, particularly the almost ubiquitous learning management system, is certainly warranted (Shelton, 2014).

2.3 Learning management systems overview

Digital platforms, including LMSs, are increasingly integral to HE institutions (Alokluk, 2018; Alterri, 2020; Brady & O'Reilly, 2020) especially due to the prevalence of online degree programmes (Oliveria et al., 2016) and the pandemic's transformative impact discussed earlier. Historically, some universities have mandated the use of LMSs, while others have permitted individual lecturers and departments discretional use (Sinclair & Aho, 2018).

However, as courses increasingly migrate online, it is anticipated that LMSs will assume an even more pronounced role in fashioning practice and altering HE landscapes (Swerzenski, 2021).

LMSs are also known as virtual learning environments (VLEs), course management systems and digital learning environments, yet the term LMS is adopted by most authors (Keller, 2007). LMSs are used for the administrative, management, documentary, presentation and reporting aspects of academic courses (Şahin & Yurdugül, 2022). There are two main types, open-source code such as Moodle, and proprietary, including Blackboard Learn, which is one of the most widely used commercial LMSs at educational institutions both in the UAE and globally (Al-Mamary, 2022; Daouk & Aldalaien, 2019; Uziak et al., 2018).

LMSs are reported to offer lecturers tools and functionalities which can be thought of as designed-in affordances (Benbunan-Fich, 2019; Norman, 1999). These designed-in affordances are embedded in an infrastructure which provides a virtual space for educators to perform administrative tasks, deliver courses, track learner progress, communicate with students and conduct grading (Liu & Geertshuis, 2019). Irrespective of the common view that LMSs are all encompassing remedies to contemporary educational issues, they are, of course, but one solution for educators (Steel, 2009).

2.4 LMSs and educators

Prior studies investigating LMSs in HE focus on educators' adoption patterns (e.g., Sinclair & Aho, 2018) resistance strategies (e.g., Sakala & Chigona, 2020), the impact of the LMS on academic work (e.g., Brady & O'Reilly, 2020) and most significantly for this study, the relationship between the LMS and the educator's role and professional identity (e.g. Abbott, 2016; Geertshuis & Liu, 2020; Gregory & Lodge, 2015; Liu & Geertshuis, 2019).

2.4.1 Resistance

Despite the multiple, potential applications of LMSs, research indicates that lecturers oftentimes under-exploit the designed-in affordances (Geertshuis & Liu, 2020), with their adoption patterns commonly falling short of organisational aspirations (Liu & Geertshuis, 2019). Contributing factors include technical challenges, integration issues, lack of interest in technology, lack of motivation (Sinclair & Aho, 2018) and time pressures (Danver, 2016). This has even been witnessed in assumed 'experts,' such as information technology faculty, who may circumvent the LMS due to the time needed to experiment and orient oneself when it is a newly integrated system (Daouk & Aldalaien, 2019). Other studies have suggested that lecturer resistance stems from the LMS' potential to engender laziness in learners as materials housed there might distract from self-initiated exploration and research (Benson et al., 2011; Gregory & Lodge, 2015). As such, lecturers may steadfastly believe that LMS use should be derived from an educational purpose, rather than driven by its mere availability (Steel, 2009). Hence, lecturers may uphold the value of the platform in arriving at a pedagogical end, rather than expressing an appreciation of the technology in and of itself (Steel, 2009).

When a lack of motivation by students to use the LMS occurs, this has an understandable psychological knock-on effect on the educators' willingness to use it (Al Meajel & Sharadgah, 2018). Lecturers have even been found to sabotage LMS implementation if they perceive it as detrimental to student performance (Salaka & Chigona, 2019). Some may question the design rationale of the site, believing that whilst it may enhance efficiency for learners, it may detract from pedagogical processes and undermine their teaching efficacy, as identified by Graham et al. (2007, p. 30); '[the LMS] 'solves a lot of `problems I just don't have and creates some new ones'. Furthermore, even in contexts where lecturers have experienced many years of using an LMS, there may still exist numerous obstacles that either limit or completely constrain the

utilisation of the platform (Al Meajel & Sharadgah, 2018). These barriers include the difficulty and time required to learn how to use individual tools vis-à-vis increased workloads, preferences for other communication channels and internet instability (Al Meajel & Sharadgah, 2018).

2.4.2 Institutional support

Faculty adoption of LMSs is often resultant to the directives of institutional leadership (Morgan, 2008). Sentiments of intrusion, overload and anxiety may arise if intensive training processes undergird LMS implementation and mandated use (Barley et al., 2011). Alternatively, further critical barriers could result from a lack of permanent support provided by the institution, both for lecturers and students (Al Meajel & Sharadgah, 2018). One of the most salient obstacles reported is the lack or ineffectiveness of PD interventions (Al Meajel & Sharadgah, 2018; Dlalisa & Govender, 2020; Sinclair & Aho, 2018; Walker et al., 2016). Whilst a recent study suggested that training workshops have the potential to effectively encourage faculty to adopt an LMS, the researchers indicated that this training should be designed towards the subject specialism of the faculty members (Al Meajel & Sharadgah, 2018). Meanwhile, other researchers report that whilst elective or mandatory PD sessions may be instructive, lecturers often learn more about the LMS through peer interactions (e.g., West et al., 2007). This may suggest that the micro-cultural understandings, emergent needs and motivations of faculty members within a single institution or department could implicate how the LMS is viewed and utilised.

2.4.3 Increasing workload

It is also plausible that LMS utilisation may blur boundaries between occupational and personal time and interestingly, the augmented stress engendered by its excessive use may restrict both individual *and* organisational productivity (Brady & O'Reilly, 2020). Additionally, dissension may occur when

the LMS is introduced resultant to a managerial directive which imposes additional and onerous responsibilities on lecturers (Salaka & Chigona, 2019). Teaching materials and other content 'do not just magically appear' in the LMS and may require considerable time and labour to produce (Teräs et al., 2022, p.5).

2.4.4 Monitoring and data

Educators have been suspicious of the covert monitoring purposes of LMSs (Johannesen et al., 2012) which may engender a 'surveillance culture' (Lyon, 2017, p. 824). Working in digital spaces creates data trails that are potentially subject to scrutiny and analytical attention which may foster sentiments of unease (Bayne et al., 2020). Furthermore, as student engagement is so easily quantifiable and visible through their activities on the LMS, how lecturers leverage these data could have implications for faculty-learner relationships. This may not only lead to learners being positioned as datafied subjects, but also to a redefinition of what being a *good student* means (Williamson et al., 2020).

2.4.5 Types of 'users'

When LMS integration is more widely accepted, educators may still evince 'pedagogic inertia': the failure to advance beyond a very basic level of usage (Sinclair & Aho, 2018, p.171). Such usage patterns have been termed examples of 'tokenistic professionalism' (Kwon et al. 2021, p. 2). Faculty have been found, for example, to limit their operation of the LMS as a repository (Brady & O'Reilly, 2020) and the 'static' assessment tools such as surveys, quizzes and tests, eschewing the communicative features (Alokuk, 2018, p. 136). Other studies have found that faculty commonly begin utilising the LMS for the distribution, management, and retrieval of course materials, and later progress to adopting more interactive features as their familiarity with the technology increases and they recognise new ways to facilitate active learning

(West et al., 2007). This approach to uptake has been coined the *trialability* of a particular function or tool (Rogers, 2003). When trialling the constituent features of the LMS, lecturers commonly desire an 'efficiency payoff', meaning that when challenged by learning a new feature, they need to perceive an efficiency benefit will be actualised in the near future, to proceed to greater integration and experimentation (West et al., 2007, p. 15). In contrast, when faculty overcome integration challenges and perceive the LMS as a means to augment their practice they may experience sentiments of reward and achievement as they are positioned as a 'better teacher' and able to embrace technology and 'pull it off' (West et al., 2007, p. 19).

Meanwhile, a minority of faculty may emerge as 'LMS super innovators' (Sinclair & Aho, 2018, p.171) who espouse experimentation, possess the confidence to take risks and display pedagogical philosophies that welcome change and contemporary digital approaches. Others may be positioned as 'change agents' increasing students and colleague's adoption of the LMS (Daouk & Adalaien, 2019). Further characterisations of educators vis-à-vis their LMS use patterns include 'laggards' and 'innovators' (Porter & Graham, 2016), 'luddites,' 'digital natives' and 'reluctant immigrants' (Abbott, 2016). Other studies focus on the stages of role shifts, as educators modulate between performing as designers, facilitators, collaborators and community members (Kwon et al., 2021).

Whilst these typologies are informative, they are somewhat one-dimensional and occlude lecturers' individual differences and heterogeneous practices. Case study research has revealed that whilst there may be some common barriers to uptake amongst faculty members in a single institutional cohort, there may also exist many points of difference among them (Al Meajel & Sharadgah, 2018). Typologies also reflect the problematic assumption that innovation is *always* beneficial to one's practice (Liu & Geertshuis, 2019) since tasks requiring 'insight, creativity and emotion' are ostensibly better facilitated by humans rather than an LMS (Brady & O'Reilly, 2020, p. 252). Moreover, they

do not substantively encapsulate the fabric of *identities* which guide educators' actions and beliefs (Geertshuis & Liu, 2020).

2.4.6 The LMS and lecturer professional identities

While Swerzenski (2021) argues that it is the lecturer's role that is refashioned most by the LMS environment, moving from the authoritative, didactic provider of knowledge to the displaced facilitator, my position is that the ways educators enact an existing LMS is emergent and fluctuates according to the individual, rather than adhering to a priori prescriptive notions (Bolldén, 2016). Therefore, whilst lecturers share similar occupational *roles*, they construct diverse identity positionings, reflecting particular dispositions and the variability in which they perform work tasks and perceive the LMS (Evans, 2017).

Professional identities, or 'the way we make sense of ourselves and the image of ourselves that we present to others,' (Day, 2011, p. 48) are multiple and dynamic. Lecturers sense-make their occupational lives through the lenses of their identities which are subsequently reified by partaking in behaviours congruent with their perceptions of professionalism (Stets & Burke, 2000).

The LMS may privilege robust professional identities if it suitably positions educators to respond to academic demands, manage pedagogical dilemmas and satisfy their understanding of organisational policies (Henderson & Bradley, 2008). However, conflicts to professional identities can manifest as barriers to adoption and proficiency (Abbott, 2016). Such friction may ensue when traditional practices are perceived to be steadfastly beneficial, when LMS technology appears to overshadow pedagogy and when individuals encounter self-efficacy doubts (Abbott, 2016). Additionally, negative identity shifts may arise when educators feel susceptible to the opinions of others regarding their capabilities (Geertshuis & Liu, 2020). Thus, it has been suggested that if lecturers suspect a perceived lack of competence in the LMS is exposed and could threaten their reputation, this positions their identities in a state of

vulnerability (Geertshuis & Liu, 2020) and may hamper plans for future LMS use (Abbott, 2016). Liu and Geertshuis (2019) suggest that greater and more focussed use of LMS designed-in affordances is nuanced by identities which espouse a commitment to teaching, alignment with student-centric instruction and engagement with administrative tasks (Geertshuis & Liu, 2020). Conversely, divergent professional identities associated with prioritising research over teaching may be poorly aligned with the LMS (Geertshuis & Liu, 2020). Furthermore, LMS master shells in which the content from one course can be replicated and retaught in subsequent semesters serves to refashion academic labour, as lecturers may be positioned as mere producers or delivers of pre-packaged content (Martínez-Guillem & Briziarelli, 2020). Professional identities may be further troubled by the requirements and expectations posed by LMSs and the culture which ensues, where 'the digital has become a taboo that must not be questioned' (Teräs et al., 2022, p.577). This may engender a sense of professional inadequacy and a reduction in autonomy (Teräs et al., 2022).

Whilst these studies inform the knowledge base of professional identity as it intersects with LMS usage, there is '… relatively little attention to socio-material power relations…' arising from its implementation (Johannesen et al., 2012, p. 785). One notable exception explored lecturer *agency* and revealed how the socio-material network effects produced by an LMS[6] allied with lecturers and permitted them to effectively translate their pedagogical beliefs into practice (Johannesen et al., 2012). Nevertheless, the very same functionalities may also require lecturers to firmly negotiate their agency, resulting in the LMS' materiality reconfiguring the underlying values inscribed in practice whilst intensifying power relations and reifying management objectives (Johannesen et al., 2012). Consequently, non-human entities, including the LMS and its

[6] Referred to as a VLE in their study.

constituent artefacts, warrant investigation not only in terms of how agency is negotiated, but also how lecturer professional *identities are* manifested through a specific LMS: Blackboard Learn (West et al., 2007).

2.5 Blackboard Learn

2.5.1.1 Types of 'experience'

The Blackboard Learn platform is available by means of two experiences or interfaces: Original or Ultra. Blackboard Original has a more traditional user interface, while Ultra's newer interface is simplified, reportedly offering an intuitive, streamlined user experience (Blackboard, 2020). The Original experience is navigated to other system areas from the tabs in the page header and uses breadcrumbs (links to previous pages) for back tracking, whilst the Ultra experience allows for base navigation, where users directly access the menu, select a link, and can easily return to the list which remains open behind other page layers (Blackboard, 2020). In terms of navigation, Blackboard Ultra appears to offer a more responsive, customisable experience. Blackboard Original, on the other hand, has a fixed and less flexible course menu. Some features available in the Original version have been discontinued in Ultra, such as wikis and tasks, while new features such as pop-up announcements and anonymous grading of tests are accessible in Ultra (Northern Illinois University, n.d.). Screenshots of both formats are shown below, in Figure 2.1 and 2.2.

As the Ultra mode uses cloud-based storage, some institutions (including the research site) opt to retain the Original version. UAE government institutions have strict rules about student data storage (Al-Ali & Marks, 2022), and only the Original Experience permits this data to be stored on local, institutional servers.

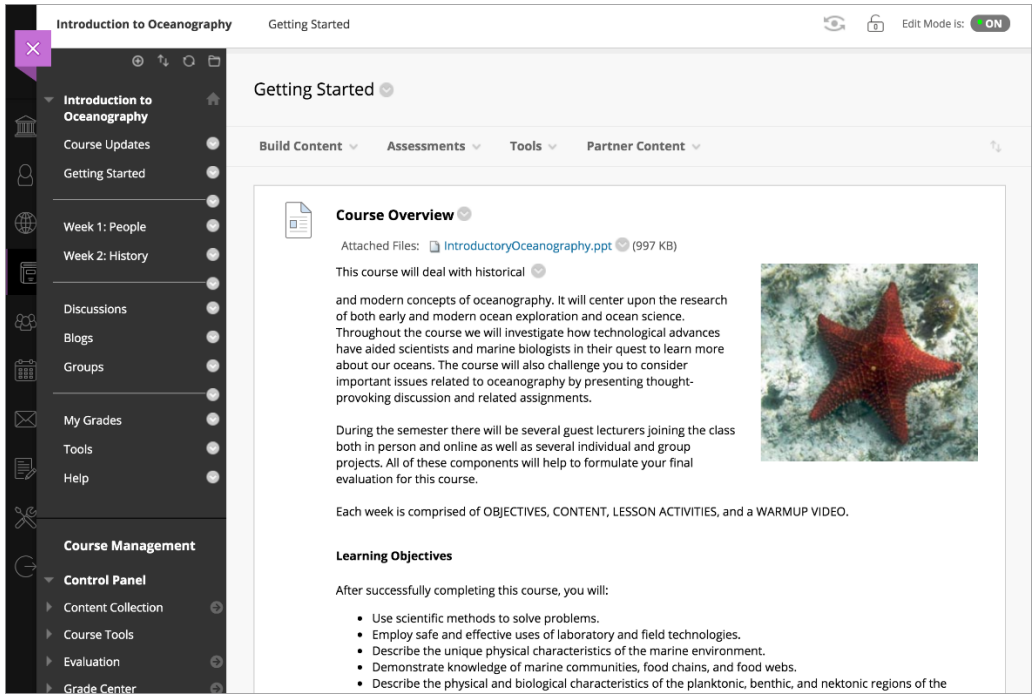

Figure 2.1. Blackboard Original Experience.

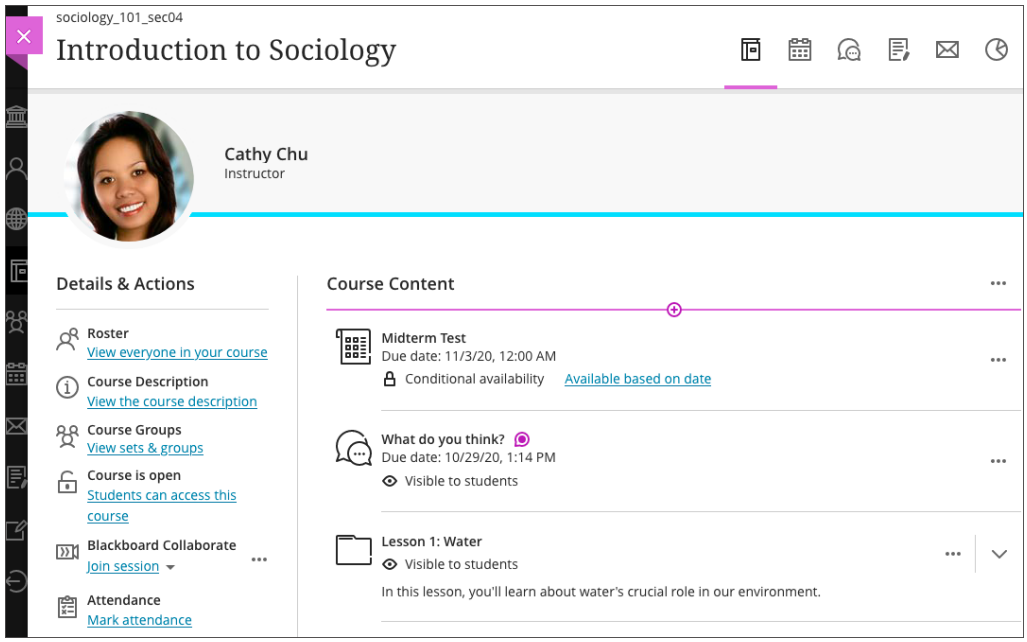

Figure 2.2. Blackboard Ultra Experience.

Note. Sourced from Blackboard Learn (n.d).

2.5.1.2 A critical look at Blackboard Learn Original

Blackboard Learn Original (from herein Blackboard) is deployed at the research site and has been heralded as a platform with which to devise, implement and assess specific learning paths in HE (Almrashdeh et al., 2011). Blackboard offers synchronous and asynchronous customisable functionalities, reportedly designed to foster an interactive educational environment, including a virtual classroom, discussion boards, messaging, announcements, lecturer profiles, assessments, assignments and curated course content (Iffat Rahmatullah, 2021). However, while these designed-in affordances might be realised under the guise of neutrality, it has been suggested that Blackboard asserts its own influence, advancing a top-down nature of learning, framing knowledge as a discreet entity and de-centering the educator (Swerzenski, 2021).

The discourse Blackboard employs to describe itself clearly emphasises the terminology of technical performance, with equal logic perhaps applied to educational achievement: ‘Low-maintenance. Modern. Simple. A new kind of LMS’ (Anthology, 2022). Blackboard, with its appellation, metaphorically implies ‘a facile appropriation of a well-known construct (the blackboard and the classroom) into a virtual context’ (Davis & Hardy, 2003, introduction, para. 1) as it eradicates spatial and temporal constraints. This metaphor perhaps reinforces the traditional ideology of authority and positioning between student and educator, conveying a normative cultural reference (Swerzenski, 2021). With institutions commonly positioning Blackboard as an intermediary through which all educational processes are located, hegemonic ideas of information transmission may be normalised and the mechanisms in which knowledge can be questioned or produced in the lecture hall context may be confounded (Swerzenski, 2021).

2.5.1.2.1 Interface

Upon navigating to the home page, the lecturer encounters a grey interface populated with lists of courses, to which they are either generically indexed as 'instructor,' or for PD courses as a 'student.' Blackboard thus positions its users both immediately and repetitively. As an 'instructor,' selecting a course from the list, they are then taken to the flat, and similarly grey course shell. Prior to course configuration, it is redolent of an empty lecture hall, devoid of equipment and furnishings, until the lecturer or institution uploads and arranges course content.

Standardised and always appearing on the left, the lengthy menu consists of the developer options espousing a distinctly technical ethos including 'control panel', 'course management' and 'course tools'. Perhaps this is part of Blackboard's endeavour to normalise the corporate ethos of HE (Bayne, 2015). The linear learning sequences can be presented by adding further menu items to organise content hierarchically by time or topic. The textual presentation of the interface perhaps further conjures a 'hierarchy of Western ideals and individualism' (Van Wingerden, 2021, p. 690), specifically rooted in 'traditional American college soil' (Dron, 2006, p. 2276) as it invites lecturers and learners into a closed stark environment which lacks the representative, cultural and linguistic norms of its varied international audiences.

The lecturer becomes a participant in a virtual domain within which different types of artefacts and information (documents, images, text, links etc.) may be created and uploaded to *facilitate* their practice (Grimaldi & Ball, 2020), if they possess the permission, skills, time and inclination to do so (Bayne, 2015). When they do, while the lecturer is offered a myriad of options in assembling 'their space', we can perhaps envision LMS administrative practice as a series of inputs, (e.g., pedagogical and epistemological knowledge) and outputs (e.g., creation of tests and assignments) as somewhat reminiscent of a production line approach (Thornton, 2013). Through the developers' inscriptions,

Blackboard frames the lecturer (or instructor) as in control and dominant, responsible for shaping the LMS shell and adding artefacts to its repository capacity. Yet, while on one hand, the lecturer is encouraged to be creative and demonstrative in their ability to populate the course shell, on the other, they are restricted by its layout and placement options. Blackboard is also replete with pre-formed templates that provide lecturers with various options to produce text-based tasks and assessments. Perhaps emphasising the text-based modality underlines commercial thinking. Text is less burdensome on LMS servers and more straightforward to analyse, making it the perfect starting ground for the 'algorithmic forms of insight, prediction, and recommendation' (Williamson, 2020, para 13) that LMS corporations are so keen for universities to implement (Swerzenski, 2021).

While lecturers are permitted some customisable power, in hiding and unhiding content and changing colour schemes, the pre-set layout templates allow this to occur within limited parameters. The 'templates' predominantly re-order the menu options and populate the course with the particular tools Blackboard deems appropriate for that genre. Interestingly Blackboard calls these templates 'teaching *styles*' which may be a misnomer given these limitations, for it is quite impossible to distract from the static corporate framing of the interface which always retains 'a very limited palette' (Rose, 2017, p. 375). An example is given in Figure 2.3., of the 'constructivist' template, largely dissimilar in its look and feel to the default settings, which directs the lecturer on what is required of them: 'in a constructivist course, you facilitate the learning process while students develop knowledge to create complex and critical theories.' Thus, lecturers' pedagogical 'design' within Blackboard may be understood as a process that is produced in the interplay between the lecturer, the social inflection of the LMS and its permitted actions, for the most critical design decisions that have already been made by developers embody specific educational ideologies (Rose, 2017).

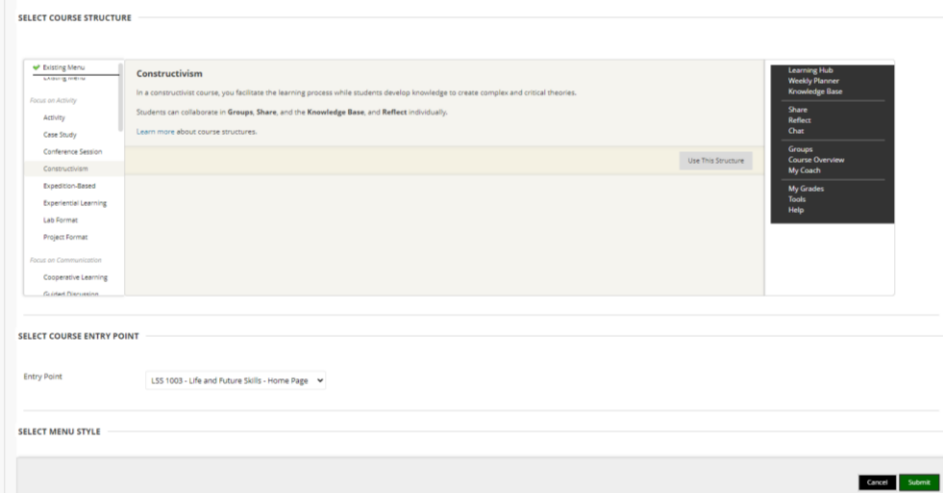

Figure 2.3. Blackboard course structure template example.

2.5.1.2.2 Tools

Van Wingerden (2021) suggests it is the responsibility of the lecturer to unmask the environment and invite students into an arena rich of instructional materials yet create a space for dialogue and connection, using tools such as discussion fora and wikis. However, this is juxtaposed with Blackboard's emphasis on grading discussions, which might eliminate opportunities for experimental and critical thought, as it embeds a 'empiricist logic of knowledge acquisition' (Swervenksi, 2021, p. 6) and reinforces the power dynamic between lecturer and learner. Meanwhile, announcements are legitimate and useful ways to convey important course information, yet the one-way announcement tool foregrounds the lecturer's control and authority in Blackboard.

As suggested above, Blackboard is built around a container model and when simple hyperlinks are embedded, students may be required to carefully navigate external menus and further links to resources which impact course coherence. To mitigate this, Learning Tool Operability (LTI) allows external tools and third-party resources to be directly accessible from the LMS (Dron, 2022). For example, apps such as Flipgrid allow students to record video and math writing software can be used to supplement the text editor which was not

designed with equations in mind. Thus, this offers lecturers a means to escape the confines of Blackboard to integrate a ‘bevvy of assistive features and learning tools’ (Swervenski, 2021, p. 66). However, only those LTIs approved by the IMS Global Learning Consortium and subsequently authorised by the institution’s EdTech department will be available to faculty (Blackboard, 2020).

The Grade Centre is an integral part of Blackboard. Automatic grading by Blackboard is available for closed question tests, with manual grading required by lecturers for text-based assignments and assessments. Lecturers can decide if and when grades are released to the student interface. While on one hand automatic grading is a time-saving relief, the Grade Centre itself is quite obdurate, especially with large sections of students since there is no search option here (nor across the whole platform) and thus may require scrolling through lengthy lists of names (Alhadreti, 2021).

Blackboard offers further tools. Respondus Lockdown Browser disables student device functionalities including web browsing and screen sharing, partnering with lecturers in their control of learner behaviour during exam invigilation (Johri, 2022). SafeAssign, a cousin to Turnitin, makes student work transparent to the lecturer, while presenting the institution (and its lecturers by extension) as serious and resolute in their stance against academic dishonesty. While this assistant may save valuable time, it fails to contribute anything to the academic quality of writing which lecturers commonly desire (Swerzenksi, 2021). The Retention Centre, part of the Evaluation sub-menu, tells lecturers who is ‘at risk’ or who is ‘doing great,’ embedding a smiley face to reassure the lecturer and hint that it is satisfied with not only their learners’ progress but also with their instructional performance. Furthermore, the Performance Dashboard provides ‘pertinent information about each user’s progress and activity’ (Blackboard, n.d.) including course access points, number of discussion forum entries and review status, a tool which tracks when learners have viewed certain content and may progress to the next stage of a course (Swerzenski, 2021). In line with a transmissional educational framework, it is Blackboard that predefines metrics

like ‘student progress’ and ‘institutional results’ rather than the lecturer. Moreover, the availability of tracking tools which encourage the continuous evaluation of learners by faculty suggests a powerful remit of lecturer agency and a divisive line between educator and student.

2.5.1.2.3 Scalability

However, beyond the localised roles in individual courses, Blackboard might also strip away lecturers’ agency. It proffers a ‘reimagined transmission model of education … allowing the most knowledge to be transferred to the most students using the least number of instructors’ (Swerzenski, 2021, p. 58). Moreover, the newly emerging industry of course creation is gaining popularity as external educators develop and sell their intellectual property to universities for a one-off payment (Martínez-Guillem & Briziarelli, 2020). The lecturer who once used their expertise to create course material may now occupy a de-skilled position, experience displaced autonomy and be side-lined from the traditional trajectory of knowledge flow. Furthermore, through a standardisation process called ‘cross-listing[7]’ institutions may select a team leader to oversee multiple sections enrolled into a master shell, to manage and regulate course design and execution, preventing individual lecturers from uploading, deleting or altering any content (White et al., 2022).

Alongside this unsettling nod to Blackboard’s capacities to discharge educators but usurp their authority, is it’s push for institutions to ‘prepare your faculty to deliver a high quality, engaging teaching and learning experience leveraging the full potential of your educational technology investment’ (Blackboard Learn, n.d.). This implies that together with the institution’s PD interventions,

[7] Not to be confused with the more traditional cross-listed designs which involve the concurrent offering of individual modules across different disciplines, e.g., law classes to non-law majors (Genberg & Ellis, 2011).

Blackboard seeks to reframe lecturer's skills and technical-pedagogical orientations.

2.6 Conclusion

The literature review has established the significance of the UAE as a site of study and argued for a move beyond essentialist and instrumentalist discourses to incorporate a socio-material perspective when examining the LMS. Moreover, the critical observations of Blackboard suggest a fecund area of opportunity for examining lecturer professional identities as they intersect with pandemic and post-pandemic Blackboard use which is yet to be found in the literature. The next chapter will delve into the theoretical lenses of positioning theory and socio-materiality which frame this original inquiry.

Chapter 3: Theoretical framework

3.1 Introduction

Whilst human actors live a social life, they also reside in a socio-material world which their lives are mediated by (Schraube, 2013). The notion that the self and social context are enacted constitutively (Mulcahy, 2011), reveals how identities are ‘always immanent within the assemblages of practices, objects, places and people’ (Mannion, 2007, p. 416). Accordingly, in the contemporary techno-educational milieu, it seems prudent to view LMSs as a source of reflexivity and to inquire how lecturers’ professional identities are shaped in relation to Blackboard (Carter & Grover, 2015). The inherent dynamism of professional identities necessitates an ‘an equally complex theoretical response’ (Varghese et al., 2005, p. 40). In seeking a such a response, the chapter presents an overview of professional identity research, explains and rationalises the application of positioning theory and marries this with a socio-material lens to situate the empirical research.

3.2 Defining professional identity

In contrast to role, which is reflected in the measurable, codified functions of a lecturer’s prescribed responsibilities, identity is a multidimensional phenomenon (Trent, 2014). Scholars’ accounts of educator professional identity are underscored by diverse considerations including participatory and experiential aspects (Wenger, 1998), emotions (e.g., Day & Lee, 2011; Zembylas, 2003), discursive resources (e.g., Howard, 2019; Olsen, 2011; Varghese et al., 2005), personal histories and biographies (e.g., Davis et al., 2006), dialogical positions (e.g., Arvaja, 2016), culture (e.g., Clarke et al., 2007; Edwards & Edwards, 2017), socio-spatial arrangements (e.g. Lai et al., 2020) and socio-materiality (e.g., Howard, 2022, 2023).

Thus, identity is subject to multiple conceptualisations and theorisations. Miller's (2009, p. 174) assertion that identity is 'relational, negotiated, constructed, enacted, transforming, and transitional' underscores its inherent complexity. Whilst scholarship yields diverse definitions, a metareview of the literature indicated that it is regularly conceived of as 'a way of being and a lens to evaluate, learn and make sense of practice' (Trede et al., 2012, p. 374). Generally, then, professional identity is regarded as how social actors, both personally and collectively, perceive and reconcile themselves in their occupations (Mockler, 2011). Lecturers, performing their roles, may evaluate themselves in terms of the knowledge they hold in their discipline, their pedagogical competence and the relationships with learners (Beijaard et al., 2000). Personal histories are also of salience, as 'remembrances of teachings past' (Shulman, 1986, p. 12) serve to heuristically guide individuals' decisions and actions (Looney et al., 2018). Professional identities thus encompass these biographical trajectories and lecturers' beliefs about professionalism, including the routines, judgement and skills necessary in the execution of their practice (Beijaard et al., 2004; Jonker et al., 2018). Importantly, identity is not a singular construct, but is comprised of varied sub-identities (Beijaard et al., 2004). This multiplicity is at one level reflected in dimensions such as 'personal, professional and situated identities' (Day et al., 2007, p. 106) or at a more granular level, multiple sites of educator identity, such as subject specialist, online teacher, pressured academic and so on (Beijaard et al., 2000; Garcia & Hardy, 2007). Contemporary interpretations of educator identities also cite their instability and tendency to transform over time, superseding the former notion that identity was a fixed, unitary construct (Beijaard et al., 2004; Mockler, 2011).

3.3 Sociocultural theorisations of identity

The chief assumptions of the dominant theorisations of educator identity (psychological, socio-cultural and postmodern) share the view that it is contextually shaped, derived from relationships and involves meaning making

(Rodgers & Scott, 2008). Perhaps the most prevailing lens is the socio-cultural perspective, which holds that identity emerges through social discourses and the interactions an individual has with others and the broader context (Martin, 2019). Hence, identity formation is a continual, dynamic process and is fashioned and re-fashioned through 'value-based doing, being, and self-representation' (McNaughton & Billot, 2016, pp. 645-646). Furthermore, as engagement in tasks commonly occurs through shared practices, this foregrounds the social fabric of identity formation and negotiation (Varghese et al., 2005).

This relational aspect of professional identities is underpinned by the notion that they are dynamically shaped within intra- and inter-personal interactions with colleagues, deans and students, for example (Akkerman & Meijer, 2011). Through these interactions, the lecturer creates an image of themselves which correlates with their and others' perceptions and expectations of what it means to be a professional, to invoke justification and legitimisation of themself and their practice (Beauchamp & Thomas, 2009). These perceptions and expectations are guided by the ways in which social, media, cultural and local norms frame professionalism (Martin, 2019). Thus, the attributes and behaviours that one may aspire to exhibit are promulgated by these broader norms, the discourses of the institution, formal education and members of the narrower teaching community (Sachs, 2001). These discourses furnish actors with potential identity resources to 'actively interpret the world … by which they are themselves governed' (Weedon, 1997, p. 93). Moreover, at the micro-level, the discursive consideration of identity holds that it 'is constructed, maintained and negotiated to a significant extent through language and discourse' (Varghese et al., 2005, p. 23). This is summarised cogently by Danielewicz (2001):

> *Discourse, which is manifested through language, consists of a system of beliefs, attitudes, and values that exist within social and cultural*

> *practices. Engaging in these language practices … shapes an individual's identity.* (p. 11)

A well-established means of analysing professional identity in discourse is through the application of positioning theory (Kayi-Aydar & Steadman, 2021).

3.4 The positioning theory framework

Positioning theory, as advanced by Davis and Harré (1990), is an analytical framework which permits an examination of the inherently dynamic, complex, intricate and multifarious character of professional identities in digitalised HE contexts (Burns & Bell, 2011; Hu et al., 2019; Johnson et al., 2011; McVee, 2011; Trent & Schroff, 2013). The theory has a base in both social constructionism and Vygotskian sociocultural theory and holds that an individual's subjective experiences are articulated, and their self-image is produced, through discourse (Burns & Bell, 2011; McVee, 2011, Shi, 2020). Positioning appertains to the ways in which individuals may 'adopt, resist and offer the subject positions made available in discourses' (Davies & Harré, 1990). A subject position is 'a conceptual repertoire … a structure of rights and obligations for those that use that repertoire' (Trent, 2012, p. 106) or, in other words, a supposition regarding the duties and rights of an individual during participation in a social interaction (Harré & Moghaddam, 2003; Hu et al., 2019).

3.4.1 The positioning triad

Positions are embedded in narratives, or storylines, through which social actors enact their contexts (Hu et al., 2019). In this respect, we might consider lecturers as characters participating in ongoing and evolving occupational storylines which determine the positions available for negotiation. Storylines can emerge from local, organisational and structural scales (Anderson, 2009; Kayi-Aydar & Steadman, 2021). Thus, storylines may arise at the individual

level, for example an educator performing a particular teaching approach (Vetter et al., 2016), through moment-to-moment classroom interactions (Ritchie, 2002), institutionally, as new educational policies are introduced (Howard, 2021b), or even at the societal level, such as during COVID-19 pandemic regulations (McVee et al., 2021).

My position is that a purely immanent framing which holds that storylines are contextually limited to the moment of interaction, rather than across scales of activity, downplays the significance of broader institutional discourse and social structures (Anderson, 2009). Thus, in this study a storyline (and its constituent sub-storylines) will be depicted not only as a construct of an individual narrative or experience but also as a broader overview of an occupational setting and its material and contextual contingencies (Hirvonen, 2016).

In their professional occupation, a lecturer comes to learn the salient storylines and positions arising in that domain, and experiences oneself and the broader context from that viewpoint (Davies & Harré, 1990; LaPointe, 2010). Furthermore, routines and actions guided by the normative frames of reference and social cues which actors believe they are bound to contribute to positioning (Howard, 2021b). The tripartite aspects of positions, storylines and actions are constantly reciprocating; positioning happens iteratively and is manifested by and successively determined by storylines and actions (Harré et al., 2009; Hu et al., 2019). The framework of positioning theory is commonly represented in a triangular format, as shown in Figure 3.1. Later in this chapter, this will be adapted to include the aggregated theoretical lenses.

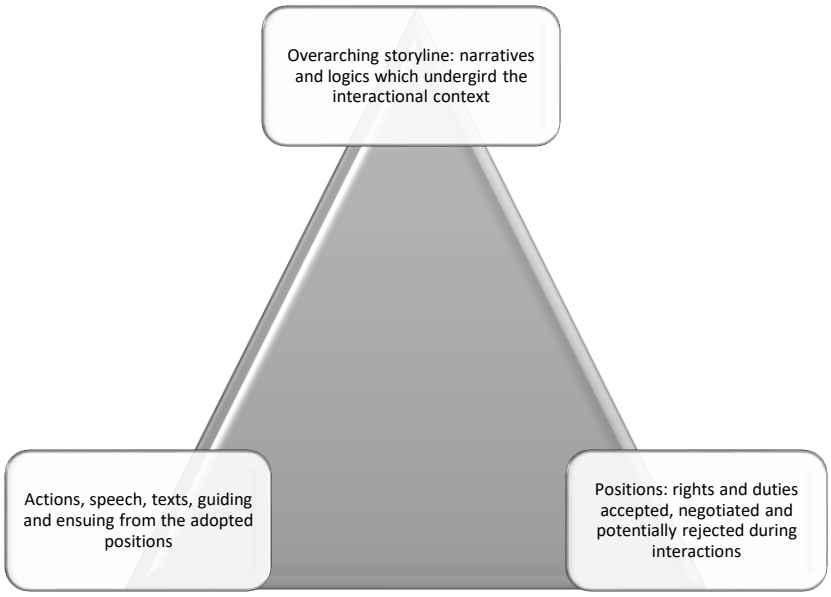

Figure 3.1. The positioning triad.

Note. Adapted from Howard (2021b); Rochette et al. (2020).

In the original model, positions, storylines and actions operate in a triadic exchange, as various positions become accessible at the intersection of these aspects (McVee, 2011). In discursively describing their occupational roles and experiences, social actors construct particular narratives, discourses and categories, and during this process they position themselves (LaPointe, 2010). and verbalise their identities (Godec et al., 2020).

Agency may be exercised by formulating narratives, constructing ideational identities, and by negotiating, recasting and resisting conflicting positions (Davies & Harré, 1990; Mishler, 1999). However, individual agency is not absolute: identities are not only self-negotiated, but also mediated through social interactions with others, suggesting that identities, in part, emanate from a discursive tussle (LaPointe, 2010; Trent & Schroff, 2013). Conflict and issues of power may evolve alternate storylines which create disharmony between positions (Nilsson & Brante, 2010) with actors claiming victimhood positions when they feel subjugated, for example (Garcia & Hardy, 2007).

3.4.2 Types of positioning

Positioning acts occur in several orders and forms (Hirvonen, 2016). Pre-positioning emanates from the role-based responsibilities assigned to lecturers by an institution, e.g., to assess learners and provide feedback (Harré et al., 2009). First-order positioning is predominantly tacit, spontaneous and non-reflective (Burns & Bell, 2011) and refers to ways people performatively assert themselves and position others while engaged in conversations (Van Lagenhove & Harré, 1993). For example, there is a typically a culturally accepted accord related to the rights and obligations existing between a lecturer and learner, such as when a lecturer asserts their duty to assign work and first-order positions the student. Second-order positioning occurs as the first-order position is challenged or rejected, which triggers a recasting of the original first-order positioning (Harré & Van Langenhove, 1999; Trent, 2012). In this instance, 'repositioning oneself or others is to claim a right or duty to adjust what an actor has taken to be the first order positioning that is dominating the unfolding of events' (Harré & Moghaddam, 2003, p.7). An example is when a learner rebuffs the positioning and does not complete the homework task. Third-order positioning happens outside an original interaction, sometimes rhetorically; for example, a student sending a derogatory message about their lecturer to a friend (Glazier, 2009). This positioning form (and its rejection) also transpires as an individual reflects on past events. Most relevant to this study is when a lecturer provides a re-description of their interactions as a participant in a research interview (Harré & Van Langenhove, 1999).

Positioning involves both moral and personal facets. The moral aspect emanates from the assumed roles and duties of an actor, which then may be inflected with a personal reference. For example, an educator, obliged to deliver classes, is bestowed with a specific association to their character, for example 'Mrs Jones is a really kind and understanding lecturer' (Glazier, 2009). With purposeful self-positioning an actor seeks to agentically frame their identity,

possibly to recount past experiences in a positive light, accomplish a favourable objective or frame an interaction in a distinctive manner (Harré & Van Langenhove, 1999). Moreover, identity construction through discourse also reveals how the individual positions themselves relative to other social actors (Davis & Harré, 1990). Positioning here is a 'process of differentiation, a description of one's own group and simultaneously as separate from the ''others''' (Wodak, 1996, p. 26). In other words, the Other may be indexed not only as markedly distinct, but perhaps also differentiated as less professional, capable and authoritative, for example (Garcia & Hardy, 2007). Consequently, the positions individuals assign themselves are interlaced with the positions they impute to others both implicitly and explicitly (Symon & Pritchard, 2015). Bringing these two aspects together, a specific example could be when a lecturer distances themselves from the Other – a faculty member who is reluctant to engage with an LMS. As a result, the Other is categorised as somewhat inept, which serves to validate the identity and legitimatise the willingness and expertise of the interlocutor.

Congruent with my approach to storylines (Section 3.4.1), it is argued that positioning extends beyond intimate local interactions, and is manifested across social discourses (Glazier, 2009) and embedded in directives in the institutional context (Trent, 2012). This can be both explicit, whereby it is imposed by a human resource (HR) policy (e.g., positioning as a forced acceptor of a technology), or tacit and suggestive according to a societal norm (e.g., positioning as a culturally sensitive lecturer) (Harré & Van Langenhove, 1999).

3.5 Positioning beyond discourse

While much research has adopted positioning theory to interrogate professional identity construction and reconstruction through discourse (e.g., Garcia & Hardy, 2007; Hu et al., 2013; LaPointe, 2010), rarely do studies explore other influences which engender these positionings (McVee et al., 2021; Shi, 2020). A critique of positioning theory thus relates to the emphasis on verbo-

centricism, i.e., the focus on text and talk, as studies largely neglect the influence of material artefacts (McVee et al., 2021). As Lave and Wenger (1991) recognised, a purely socio-cultural discursive account of identity may elide a vital consideration of the embeddedness of technology and other materiality within a social context. Without this consideration, perhaps discursive repertoires are at risk of being distilled down to decontextualised, semantic, interpretations (Aagaard & Matthiesen, 2016). Issues of agency and power and how these are intertwined with material resources enable certain discursive repertoires and prerogatives, and conversely, they lend materially derived validation to spoken words (Aagaard & Matthiesen, 2016). Similarly, Martin (2019) revises the emphasis on discursivity and purely anthropocentric accounts, since:

> *teacher identity is not solely a discursive configuration; rather, teacher identity is the confluence of matter's engagement with itself in multiple plateaus … it is the composition of the material elements (human and nonhuman) in relation to contextual location that enables teacher identity.* (p.4)

Thus, this signals the need to 'attend to more than the written or spoken word' (McVee et al., 2021, p. 209), and account for material arrangements and social performances. If identities and subject positions are performed (Butler, 1997), then this might occur not only through discourse, but also in an actor's material experiences (Hardy & Thomas, 2015) as LMS artefacts (e.g., interfaces, tools and course shells) evoke particular ways of enacting tasks (Aagaard & Matthiesen, 2016).

Acknowledging the collective character of human and material elements is to 'account for contextual variations as … integral to how teacher identity is produced, recognized, and acted upon' (Martin, 2019, p. 5). From this perspective, material elements participate in the development of educational practice, the positioning of humans and are inextricably bound up in issues of organisational power relations and coercion which influence LMS uptake and

use (Symon & Pritchard, 2015). As such, Blackboard should not be understood solely as an infrastructure, but as part of a complexity of relationship figurations that emerge as markers in ongoing storylines (McVee et al., 2021) and influence social actors' communication, occupational and identity forming processes (Pischetola et al., 2021).

Therefore, it is argued here that this study necessitates an integrated theoretical lens which accounts for discursive positioning acts (revealing actors' agency, beliefs and experiences), as they converge with material resources (e.g., Blackboard and related artefacts) to unveil the socio-material conditions which manifest identities (Brown, 2019; Paring et al., 2017). To develop this framework, a discussion of materiality follows.

3.6 Materiality

The dominant practice for many years in sociology was to theorise social life as if materiality was irrelevant (Barad, 2003). In more recent decades, scholars have asseverated the need for theoretical attention towards materiality, highlighting the ways in which artefacts and technologies in education are neither fixed nor neutral, incidental nor sporadic, but bound up in occupational contexts and practices (Hawley, 2021; Orlikowski, 2007).

If we understand the term *socio* in socio-material as pertaining to the social 'togetherness and withness of human beings …. the hanging together of human lives' (Schatzki, 2010, p.128), then, what does it mean to speak of the material? Materiality is an obscure concept in contemporary academia; to some scholars, it signifies the material world which consists of all its physical constituents and properties, with others viewing materiality more broadly, as bio-physicality (Schatzki, 2010). Whilst an intellectual discussion of the materiality of nature and the environment is beyond this study's scope, it is evident that physical things, are made up of matter and consist of materials such as paper, wood, metal and plastic (Leonardi, 2011). The material, or 'non-human' then, is a

broad term that encapsulates a spectrum of entities or things (Sayes, 2014), with the precise dimensions and forms of materiality dependent on the particular research context and social milieu at hand (Schatzki, 2010). Some scholars draw specifically on the material features of corporeality (e.g., Schultze, 2014), gardens (e.g., Aberton, 2012), physical learning spaces (e.g., Acton, 2017), and others probe organisational arrangements and artefacts (e.g., Paring et al., 2017).

Artefact refers to an object, produced by humankind that has meaning and is culturally significant, including signs and tools (Mlitwa, 2006). Material artefacts present in daily academic life are the visible material – the building, lecture hall, chairs, pens and computers, for example (Sørensen, 2009). These artefacts have a physical mode of existence, in that they have dimensional characteristics such as form, locality, volume and weight (Faulker & Runde, 2009). Other entities include textual objects, such as PD literature, curricula, assessments, institutional directives and books (Fenwick, 2011). Whilst cultural and discursive in nature, these texts are also material in their capacity to manifest, make visible and shape what arises as legitimate knowledge (Farrell, 2006), and arguably, position lecturers (Dennen, 2007).

As contemporary practices are reshaped through expeditious technological change, recent thinking on materiality in HE has moved beyond physical material objects such as texts and screens (Aagaard, 2017; Morizio, 2014). This attention challenges the traditional framing of materiality as a feature solely inherent to tangible objects which are stable, inert and fixed, to encompass digital artefacts (Morizio, 2014).

3.6.1 Digital materiality

In the early days of digital technologies, they were commonly perceived as ephemeral and ‘mysterious, arcane, and open only to the technologically initiated’ (Shep, 2016, p. 325). This perhaps led to the widespread trope of

digital immateriality (Blanchette, 2011), in which digital objects were viewed as ‘those that possess no enduring material substance’ (Watkins, 2015, p. 5) and only the existential role of tangible computation objects (such as laptops) in supporting the digital were recognised for their materiality. Accordingly, the dualistic variety of the physicality of hardware and software’s *intangibility* have been emphasised (Dourish, 2016). Yet, in contemporary times and with our growing familiarity with the digital, the suggestion that digital objects should be reconceptualised as material, rather than virtual or immaterial, has been gaining traction (Shep, 2016). The notion that the consistent composition of digital objects, bits, or sequences of ones and zeroes, be conceived of as material has been legitimised (Blanchette, 2011). Firstly, these objects are also artefacts since they were results of intentional human design (Markus & Silver, 2008) and secondly, while some individuals may be unaware of them and seldom visualise them, these artefacts may have the capacity to shape one’s expectations and guide normative behaviours (Miller, 2005).

Therefore, while digital materiality is a relatively new conceptualisation in academia, it seeks to texturise and explicate the materiality of the internet in general (van Dijck, 2006) and websites, software programmes and platforms (Morizio, 2014). If material, physical objects are composed of matter and possess a particular form, then what may we say of digital artefacts? Some suggest that the digital cannot realistically be perceived as made of tangible stuff, yet nevertheless in can be material in the consequences that emanate from it (Carlile, 2013). In contrast, Shep (2016) argues that the tangibility of the digital is evidenced in software and user traces left recoverable on hard drives, servers and clouds. Meanwhile, Leonardi (2010) draws on the notion of how digital artefacts translate ideas into practice.

Mobilising the example of computer crash software, Leonardi (2010) demonstrates how the material nature of the simulation tool permits the instantiation of ideas for the engineers using it. It is partly in this translation of ideas into practice, that a digital artefact evinces its materiality (Leonardi, 2010).

Thus, the digital may buttress concepts and thought patterns (Leonardi, 2013), and manifest abstract notions materially in the realisation of particular occupational behaviours and practices (Campbell et al., 2021).

A further characteristic of materiality, including the digital, may arise from its contextual relevance to the user. For example, Blackboard's virtual classroom was perhaps seldom used pre-pandemic but gained salience and 'digital significance' (Campbell et al., 2021, p.15) when remote work was unavoidable. This suggests that the physical form of the artefact is less important than how, when or why it is utilised (Leonardi, 2010). Our awareness and understanding of technologies might then be framed by the human perception of what an artefact can be used for (Hawley, 2020). This accentuates its performativity, that is, how it gives the user the ability to accomplish a goal or perform an action (Pickering, 2001). If we consider physical objects such as a pen, a chair and a screen, I posit that lecturers seldom view them as a molecular cluster of matter, but rather, like digital artefacts, they may view them as tools serving a particular purpose, or in other words, as having instrumental value (Hawley, 2020).

Interestingly, whilst both digital and physical artefacts may be interrogated in terms of their instrumentality (Paring et al., 2017), the generative character of the digital means that users, including lecturers, may encounter affordances or constraints that the designers did not anticipate (Kallinikos et al., 2013). Generativity in a broad sense, pertains 'to a capacity of producing or creating something' (Avital & Te'eni, 2009, p. 2). For example, an artefact such as a chair, is obviate in its purpose and is unlikely to be changed or innovated by its user (Yoo et al., 2012). On the other hand, digital artefacts' boundaries may be unknown and be unceasingly under construction as social actors realise their generative capacity (Yoo et al., 2012). If we take the example of a tablet, user action achieves the generative capacity of the artefact: by installing and deleting apps through the product's life, the tablet's functional capabilities are subject to many changes and evolutions (Yoo et al., 2012). In terms of the LMS'

blank course shell as a digital artefact, individual and collective creativity can be harnessed in a myriad of ways to create course pages, embed mashups and combine tools, and thus, enable generativity (Yoo et al., 2012). Scholars including Pink et al. (2016) extend this proposition to argue beyond the material/digital dichotomy – suggesting that there is no separation between the digital and the material – they are 'entangled elements of the same processes, activities and intentionalities' (p. 1) and they opt to conceive of digital materiality as a process that is continually evolving, rather than a complete object.

Overall, a move away from defining materiality as solely residing in physical substance allows researchers to integrate their studies more centrally within social theories, while attending to matters of discourse (Leonardi, 2010). For clarity, from herein, the term *materiality* will be applied to denote the 'digital' materiality of the LMS throughout this thesis (Symon & Whiting, 2019). I view Blackboard as having a materiality, both in the form of code which is invisible to the regular user and the perceptible aspects manipulated by the lecturer, such as the interface, menus and folders. Its materiality may establish a social field, contribute to the development and evolution of practices and the re-forming of relationships within the workplace, through the 'processes of weakening, strengthening, including, excluding, and disrupting' (Pischetola et al., 2021, p. 2) certain actions and identity constructions. It follows that becoming sensitised to a technology's material contribution to identity warrants an approach that marries materiality with the social.

For clarity, drawing on Leonardi (2013), the operationalisation of materiality/digital materiality across this thesis is summarised in the table below:

Definition:	'the arrangement of a technological artifact's physical and/or digital materials into particular forms that endure across differences in place and time and are important to users' (Leonardi, 2013, p.144) which foregrounds the emergence of relational affordances and constraints (see section 3.8.1.1)
Identifies:	those constitutive features of a technology or artefact/inherent properties that are fixed across space and time until adapted

Independence:	materiality as intrinsic to the artefact, independent of its application and contextual use
Gains salience:	through, for example, translating ideas into practice, shaping behaviour, mediating relationships, reinforcing concepts, guiding thinking and contributing to identity constructions

Table 3.1. Materiality as operationalised in this thesis.

3.7 Sociomateriality

Sociomateriality is 'a dense philosophical forest' (Leonardi, 2013, p. 27). Within this broad church, one commonality is the belief that sociocultural life is facilitated by, and intertwined with, material artefacts (Cassell et al., 2015). This necessitates close attention to materiality in empirical research to trace human and non-human connections (Cassell et al., 2015; Fenwick, 2015). Academics theorise the status of non-human agency in relation to human agency differently, and the interrelationship between the socio and the material is broadly classified into two domains: the 'stronger[8]' sociomaterial (non-hyphenated) exhibited in a number of theories including Complexity Theory, Cultural Historical Activity Theory and New Materialism (Davies & Riach, 2018), and 'weaker' theorisations, usually denoted by the hyphenated socio-material, including Science and Technology Studies (Moura & Bispo, 2020).

3.7.1 Actor Network Theory

In the educational domain, sociomateriality is closely associated with the 'stronger' relational theorisation of Actor Network Theory (ANT). ANT emanated from the research of Latour, Callon and Law in the 1980s (Davies & Riach, 2018). Proponents of ANT perceive the social/human and material/non-human as mutually constituted (e.g., Callon, 1986; Fenwick, 2010; Latour, 1987). The chief concepts of ANT are the notions of *actor* and *network* which are mutually

[8] It is important to note that use of 'stronger 'and 'weaker' does not pertain to theoretical validity or value.

constitutive: the ‘network is built on the mutual influences and intermediaries that actors exchange between each other’ (Esnault, 2007, p. i). In this regard, reality is continually constructed through material practices as much as it is through discursive and cognitive processes (Korsgaard, 2011). ANT epitomises the guiding constructivist notion that science and social reality are disputable and subjective, resulting from a collective, constructive effort which involves hybrids of social, technological and material facets (Burr, 2003).

Pervading much of the stronger theorisations is the provocative assertion that non-human and human agency are symmetrical (Hawley, 2021). Generally, ANT’s conceptions of symmetry dismiss any preoccupation with aspects of human intersubjectivity and meaning, whilst rejecting any fixed distinction between the human and nonhuman objects (Fenwick, 2011). For instance, ANT draws on ‘symmetric meta-language’ (Callon & Latour, 1992, p. 354) applying ‘whichever term is used for humans … for nonhumans as well’ (Callon & Latour, 1992, p. 354), including the use of the term ‘actant’ as any entity which *does* something (Latour, 1993). The rationale is to retain an openness to analysing the actors involved without prioritising or privileging the human or material (Schraube, 2013).

This was illustrated in Latour’s (1999) seminal study of sleeping policemen, in which he analysed speed bumps to reveal how actions and decisions are ‘delegated’ from humans to the non-human actant. The study highlighted how agency was distributed across these everyday objects, which rather than merely static structures, evoked a moral canon – *to drive more slowly* (Latour, 1999). The speed bumps functioned to inhibit or incite human action and decisions in line with that canon (Latour, 1999). For Latour (1999), the idea of delegation depicts how ‘nonhumans also act, displace goals, and contribute to their definition’ (pp. 186-187). This thinking is key to ANT’s notion of ‘symmetry.’ Latour posits that the symmetry principle is invoked not only to counter Cartesian dualism, but to in fact eradicate it, as he aimed to avoid “using the subject-object distinction at all’ (Latour, 1999, p.194).

3.7.2 Critiques of Actor Network Theory

ANT provides a useful lens with which to confront the messiness and complexity of the social world and challenge the binary discourses of instrumentalism and essentialism (Fawns, 2022), yet the controversial, stronger relational view of symmetrical human/non-human agency has not gone unchallenged. For example, for feminist researchers such as Barad (2007, pp. 87-88), it' leaves practices of 'gender-in-the-making' in a blind spot. Others have suggested that it neglects morality and power and lacks any substantive political critique (Alcadipani & Hassard, 2010). Furthermore, from the central focus on the network, considerations of contextual variance and location appear to be rendered insignificant (Handran, 2019).

The concept of network has faced further excoriation 'for its apparent dissolution of independent actors with morality and intentions in a "play of forces" in which no change through human intervention seems possible' (Gad & Jensen, 2010, p. 61). Some maintain that non-humans cannot exert the extent of agency as suggested by ANT, but nevertheless, they may exercise a more restricted causal agentic capacity (Bloor, 1999). Other scholars suggest that it remains unclear precisely what is meant by the agency that non-humans may exert, and question whether this tenet even belongs within the field of social sciences (Sayes, 2014). An unfolding endeavour to frame the relationship between the social and the material has ensued, with authors discussing whether human action guides the material or vice versa (Symon & Pritchard, 2015). Suchman (2007, p. 269) contends that the human and material 'do not constitute each other in the same way' since without human actors, material artefacts would not have been designed and configured in the first instance.

Thus, whilst ANT studies have applied the concept of symmetry relationally and democratically, to avoid dualisms such as society/technology, human/nonhuman (Gad & Jensen, 2014), in doing so, researchers may have neglected humans' corporeal capacities (Müller & Schurr, 2016). Other scholars

have noted that ANT fails to present the requisite metalanguage for conceptualising distinctive features of human action, agency or identity (e.g., Schraube, 2013). The notion of symmetric agency certainly obscures human responsibility and power relations while treating social actors as mere things, resolutely equal to material forces (Schraube, 2009). With this, it neglects embodied human understandings and the unique human capability for pursuing goals (Müller, 2015), since only humans are capable of 'intentional, deliberate, and planned doings' (Schatzki, 2002, p. 207). Moreover, as humans it is our awareness and orientation to the unforeseen potentialities of technology that perhaps further distinguish our agency (Suchman, 2007). Perhaps most importantly, if a network is put together, then it follows that a prior it was made of distinct parts or entities. Thus, the very concept of inseparability of networks or the 'sociomaterial' in its portmanteau would appear paradoxical and irreconcilable (Kautz & Jensen, 2012; Leonardi & Rodriguez-Lluesma, 2012).

3.8 Socio-materiality

If 'stronger' theoretical perspectives are problematic for researchers wishing to unpack the social and material in empirical analysis then a socio-material lens may be more appropriate (Faulkner & Runde, 2012; Paring et al., 2017). Adopting a 'weaker' relational view of the unequal force of agency helps to overcome the critiques of ANT and other stronger sociomaterial accounts, especially in how the salience of language and reflexivity distinguishes social actors from materiality (Hawley, 2021). Critiquing sociomaterial accounts of the digital in HE, Hawley (2021, p. 13) disputes the obstinate de-centring of the human: 'if we foreground non-human material agency without paying sufficient attention to the asymmetry and range of human agentic capacities, are we in danger of weaving the Emperor's New Clothes?' Following this proposition, I believe that while attending to materiality is critical in steering research away from a purely anthropocentric lens, a theoretical framework which also draws

upon the importance of educators' voices, self-expressions of agency and identity is appropriate.

Therefore, to mobilise this thinking analytically, it is perhaps pertinent to dichotomise the social and the material to provide sufficient and necessary emphasis on both these identity influences (Johri, 2011). The hyphenated socio-material perspective affords this distinction, as it attends to the discourse–materiality dialectic (Putnam, 2014). Meanwhile, it also acknowledges the social inflection of materiality, since technologies were 'created through social processes … [and are] interpreted and used in social contexts' (Leonardi, 2012b, p. 32).

To this end, it has been suggested that it may be theoretically advantageous to merge a socio-material sensibility with positioning theory in identity studies to 'overcome the reduction of the human psyche' that sociomaterial perspectives, such as ANT, may conjure (Korsgaard, 2011, p. 676). This can be achieved by marrying the metaphors of imbrication (Leonardi, 2011) and the mangle of practice (Pickering, 1995). These metaphors are later summarised in Table 3.1. on page 54.

3.8.1 The metaphor of imbrication

A socio-material viewpoint that assumes this 'weaker' relational ontology, is Leonardi's (e.g., 2011, 2012a, 2013) metaphor of imbrication. For Leonardi (2013), the distinct entities of human and non-human interact directly together to form the socio-material through a process of imbrication (Leonardi, 2013) which respects the interrelationship between the material and social (Leonardi & Rodriguez-Lluesma, 2012). The term *imbrication* is derived from bricolage (Levi-Strauss, 1967), and is based on ancient tiling architecture, whereby roof tiles known as imbrex and tegula, are laid, overlapping with each other, or imbricated together, to channel rain from a roof. Both tiles have different forms and contours, which is indicative of the metaphorical relationship between

humans and materiality, as while both have ‘capabilities for action, [they] differ phenomenologically with respect to intention (Leonardi, 2011). Leonardi (2011) presents two main imbrications which may evolve over time: a *material to human* imbrication results from social actors electing to use material artefacts to achieve their goals and generates a socio-material routine. Secondly, *human to material* imbrications occur when people modify material agency through changes in the artefact’s properties to produce a renewed socio-material technology (Paring et al., 2017).

In this metaphor, the synergy and interdependence between the social and material does not subsume their disparate characteristics or agencies (Leonardi, 2012, 2013; Paring et al., 2017). Furthermore, this perspective embodies both human intentionality and material agency, with the latter as unsymmetrical and predominantly reflected in ‘things a technology [or any material artefact] can do that are not entirely under the control of users’ (Leonardi, 2013, p. 70). Therefore, human agency represents the ability of a lecturer to attempt to set and realise their goals, yet these objectives may be vitiated during their imbrications with EdTech (Leonardi, 2011). Both material and human agency influence social actors and their actions, however, material agency has a subordinate status as a complement to human agency’s lead, for only humans possess and exhibit the capacity for intention, reflection, moral concern and the discursive repertoires that contribute to the construction of identities (Bavdaz, 2018; Symon & Pritchard, 2015).

3.8.1.1 Affordances and constraints

Leonardi advances the theoretical and empirical value of considering affordances and constraints across his scholarship (e.g., Leonardi, 2011, Leonardi & Barley, 2008). Simply put, affordances offer potentials for action while constraints impede actions.

However, importantly, Leonardi's (2011) reading of affordances is distinct from 'designed-in' affordances which are inscribed into a technology by its developer to promote its usability (Benbunan-Fich, 2019). Rather they are relational, contextually specific and depend on the social actor who is interacting with the artefact (Van Slyke & Belanger, 2020). While Leonardi's earlier work was grounded in the substantialist ontology (e.g., Mangiorou, 2021; Paring et al., 2017), he has cogently framed how one can respect the interrelationship, or relationality, between human and non-human agencies without a conflation of the two (Leonardi & Rodriguez-Lluesma, 2012). Proffering the example of a key which only unlocks one door, he explains the key's power as not only evident in its physical materiality (its shape and form), but also through the concept of relationality. The power of the key in unlocking a door is afforded by the materiality of the door and the power inhered in the interrelationship (or relationality) between the door and the key. Without a door to which the key fits, and without the social meaning inscribed into the key it loses its significance (Leonardi & Rodriguez-Lluesma, 2012). This description correlates with Hutchby's (2001) view of affordances, in that they are relational, not inherent properties of artefacts, but perceived in relationships between social actors and the materiality of the tools and objects they encounter (Leonardi, 2017). Similarly, a social actor may encounter constraints when they perceive a technology as restricting their ability to carry out their goals (Leonardi, 2017). When encountering constraints, social actors may elect to adapt the materiality or their routines (Leonardi, 2011). If they change the technology, by adding a new feature, for example, they are simultaneously changing its material agency. If this renewed material agency offers new affordances, it is likely to produce new routines of working (Paring et al., 2017). Thus, there is an ongoing and dynamic exchange in the way imbrications may cultivate affordances and constraints. These affordances and constraints may then give rise to new capabilities for action which then implies new potential imbrications, and so on (Introna & Hayes, 2011). In sum, affordances and constraints are relational

constructs linking the capabilities presented by a technology to the social actor's intentions (Farad & Azad, 2013).

Lecturers may bring with them diverse objectives (Pickering, 1995) and they may perceive the LMS as offering different potentials for their practice or may view it as constraining their plans. Thus, while the LMS has materiality which exists independent of them, its affordances or constraints are produced when lecturers construct their perceptions of this materiality (Leonardi, 2017). Thus, certain affordances of Blackboard for one lecturer might be perceived as purposeless to another (Majchrzak & Markus, 2012; Markus & Silver, 2008), and importantly are also dependent on the narratives they espouse and the ongoing storylines to which they are participants in (Harré, 2002).

Imbrication may occur in a layering effect as lecturers create, fashion and utilise LMS artefacts (such as teaching materials or assessments) to realise pedagogical goals, which over time, may manifest in socio-material routines or sedimented practices (Leonardi, 2013). Furthermore, emergent routines and practices may emerge as the institution or lecturers reshape and adapt material agency (such as reconfiguring courses) to surmount perceived constraints, propagating a renewed socio-material agency which can generate new affordances for some and constraints for others (Leonardi, 2011; Paring et al., 2017). These processes also generate new storylines within which new subject positions and identities can be produced (Guth, 2013).

	Imbrication metaphor (Leonardi, 2011)	**Mangle of practice (Pickering, 1995)**
The metaphor	*Imbrication: derived from layering of ancient tiling pieces* The ways in which materiality and social phenomena overlap, or are interwoven, in repetitive patterns to create socio-material outcomes (Howard, 2022; Leonardi, 2011)	*Mangle: old-fashioned washing machine wringer* The intricate entwining of human, social, institutional and material with the contours of social and material agency mangled in practice. (Pickering 1995; Symon & Pritchard, 2015)
Ontology/ epistemology	Distinction between (human) social and the material but interdependent (Güneştepe, 2019; Putnam, 2015) Material given primacy (Putnam, 2015)	Distinction between (human) social and the material but emerge together (Güneştepe, 2019; Putnam, 2015) Association given primacy (Putnam, 2015)
Materiality	All physical and digital objects (including software) have materiality (Leonardi, 2010; Leonardi et al., 2019)	Broadly viewed as the 'non-human' (Symon & Pritchard, 2015; Symon & Whiting, 2019)
Material agency	Artefacts, including digital technology, may exert agency via the notion of performativity: what they may do outside a user's complete or direct control (Leonardi, 2012b)	The actions that a technology takes, which humans do not immediately or directly control. The contours of material agency are never decisively known in advance (Pickering, 1995)
The social	What is commonly characterised as social: organisations, rules, discourses, etc. (Leonardi, 2012b)	Common-sense view: 'Abstract concepts such as norms, policies, communication patterns, etc.' (Stein et al., 2014, p. 160)
Human agency	The capacity to shape and accomplish goals (Leonardi, 2011)	Intentionality and future-orientation to goals (Stein et al., 2014)
Point of entry: social and material (Putnam, 2015)	A continuous interplay which yields affordances and constraints. These are relational, arise in the gap between the human and material and create emergent possibilities for action (Introna & Hayes, 2011)	Resistance (barriers) occurs at the juncture between human and material agency. The social actor may respond with an accommodation (circumvention) to this resistance. (Stein et al., 2014). Affordance and constraints offer possibilities for accommodation and resistance (Van Slyke & Belanger, 2020)
Relational shifts	Altering routines/practices and changing the technology (Leonardi, 2011)	The recursive processes of resistance and accommodation (Pickering, 1995; Symon & Pritchard, 2015)
Framing of identity	The ongoing negotiation of identity is a socio-material process which occurs through the imbrication of discourse and material aspects (artefacts, technologies) (Paring et al., 2017).	In encounters with the material intentions may be subverted or vitiated (Symon & Pritchard, 2015). Individuals may then need to adjust their positioning and engagement with technology to assert their desired identity (Stanko et al., 2020).
Identity studies examples	Howard (2022, 2023); Kitzie (2018); Paring et al. (2017)	Symon & Pritchard (2015); Symon & Whiting (2019)

Table 3.2. The metaphor of imbrication and the mangle of practice overview.

3.8.2 The mangle of practice

Pickering's (1995) mangle of practice is a theoretical complement to the metaphor of imbrication (Van Slyke & Belanger, 2020). Both attend to material agency as asymmetrical and operationalised in what a technology may do outside a social actor's immediate or direct control, suggesting that even though social and material agencies shape practice, they do so in qualitatively distinct manners (Leonardi, 2016). Pickering (1995) is sympathetic to human intentionality and attends to the discursive and the material as distinct entities that enter into a dialectical relationship (Putnam 2015; Van Slyke & Belanger, 2020) although he defines the relationship between the social and material as a two-way interaction. Furthermore, rather than being imbricated or layered, Pickering (1995) views the relationship between the social and material as *emergent* through a complex mangle (Putnam, 2015).

3.8.2.1 Accommodation and resistance

Pickering's (1995) mangle (a wringer used for squeezing water from clothes) is employed as a metaphor to conceive the relationship between the human and non-human as emerging from a tussle of resistance and accommodation (Putnam, 2015). The mangle conjures up the 'unpredictable transformations' that occur when humans and material come together (Pickering, 1993, p. 567). The dialectic proceeds from the user forming a goal and exerting their agency to act and progress with their objective. The materiality of the mangle (or any other device, artefact etc.) then responds to the human actor, either permitting or resisting their actions.

The application of Leonardi's (2011) metaphor can be extended when combined with Pickering's (1995) mangle since 'affordances and constraints offer possibilities for accommodation and resistance' (Van Slyke & Belanger, 2020, p. 5). Non-human agency's particular configuration (i.e., what technology does outside a user's control) is temporally emergent as through their practice,

the social actor discovers what ‘the contours of the material agency might be’ (Pickering, 1993, p. 575). Thus, while humans may intend to employ the material to achieve their goals, their intentions may be subverted as material agency resists human manipulation in unanticipated ways (Symon & Pritchard, 2015). Resistance is a particularly instructive concept as it demonstrates how the material world speaks back and helps us to recognise the material conditions that inform lecturers’ sense-making processes. Resistances can be seen as ‘liminal and exist on the boundaries’, at the point of convergence of human and nonhuman agency (Pickering, 1993, p. 577). Pickering (1995) argues that social actors may choose to accommodate the resistance by reformulating their intentions, and/or the material form of the technology and/or the local social relations (Symon & Pritchard, 2015). As an example, a lecturer conducts online speaking exams through a mangle of materiality, (e.g., rubrics, assessment criteria and virtual classrooms) and social, discursive resources (e.g., interacting and asking questions of a student). If an artefact, such as the microphone fails, they might try to accommodate this resistance through mangling other forms of materiality (e.g., a different online platform or device) perhaps with a discursive interaction occurring with a colleague as they attempt to resolve the issue. The mangle, then, emerges as the material and social become co-constituted in making accommodations to unforeseen challenges (Putnam, 2015).

While Leonardi (2011) suggests that constraints or affordances lead social actors to make decisions as to how they will either generate new routines (social) or modify technologies (material), to yield new forms of action (Introna & Hayes, 2011), Pickering (1995) takes this further. He describes how social actors may ‘capture, seduce, download, recruit, enroll, or materialize that agency, taming and domesticating it, putting it at service, often in the accomplishment of tasks’ (Pickering, 1995, p. 6). Taken together, we may consider the emergence of material agency imbricated with humans as

enmeshed in a ‘dance of agency’ as they interactively stabilise each other (Pickering, 1995, p. 21).

The mangle metaphor can be developed further, leading to what Jones (1998) conceptualised as a ‘double mangle’. When the capturing of material agency is not the primary goal, but rather mobilising institutional goals is, there may be a transformation of both material and human agencies (Martini et al., 2013). In this regard, when social actors (e.g., institutional leaders) seek to leverage material agency (e.g., through the implementation of a new technology) they may do so in an act of ‘marshalling,’ to reinforce policy and shape the actions of other organisational members (e.g., lecturers). Herein, ‘an ongoing double dance of agency’ ensues (Jones, 1998, p. 299), firstly between the technology and the leadership, and secondly in the interplay between the technology and its local users (Ignatiadis & Nandhakumar, 2006). This perspective reveals how within a hierarchy, power relations also produced and reproduced through chains of agencies as the ongoing processes of technological resistance and accommodation may have a strong influence on shaping individuals’ practices (and identities) in an institution (Rose et al., 2005). Furthermore, it also overcomes Leonardi’s (2011, p. 151) stance ‘that people have agency and technologies have agency, but ultimately people decide how they will respond to a technology’ since perhaps elides the power relations imbued in the mandated use of certain technologies.

3.9 An integrated theoretical framework of lecturer professional identities

This chapter has argued for an integrated theoretical framework to attend to the complexities of LMS-based practice. Fusing the socio-material theoretical perspectives with the first-person perspective and the constitutive power of discourse facilitates access to lecturers’ contextual experiences, beliefs and perceptions of agency (Schraube, 2013). While Korsgaard (2011) suggested that socio-material scholars draw on positioning theory, inquiries which do so are incredibly rare, despite the belief that ‘artefacts-in-interaction’ (McVee et al.,

2021, p. 204) have been considered closely connected to positioning and identities (Pahl & Rowsell, 2010).

As discussed earlier, positioning theory has historically been represented in triangular form, eliding an explicit consideration of materiality (Harré & Van Langenhove, 1999). Moreover, since the static triad does not evince the dynamic relationships between the parts (Rochette et al., 2020) an original representation in Figure 3.2. depicts the overlapping and interacting aspects of the theoretical framework outlined here.

Working with and through the LMS is a socio-material process which occurs as the 'basic common building blocks' (Leonardi, 2011, p. 152) of material and human agency combine and synergise to effectuate outcomes and 'organisational residue' (Leonardi, 2011, p. 151), including identities (Introna & Hayes, 2011). Moreover, Pickering's (1995) 'mangle metaphor helpfully represents the complex interweaving of the individual, social, organizational and material' which fashion identities in occupational contexts, albeit in unpredictable ways (Symon & Pritchard, 2015, p. 6). Reckless theoretical blending has been said to risk incoherence (Kaptelinin & Nardi, 2012). While ontologically differing through their metaphors somewhat, with Leonardi (2011) giving primacy to materiality and Pickering (1995) to association (Putnam, 2015), thoughtfully combining the two socio-material perspectives discussed above may nevertheless yield rich insight (Kaptelinin & Nardi, 2012; Stein et al., 2014).

It is, however, important to note that my overall reading of materiality (as discussed through this chapter) is more limited and bounded than in the stronger, unhyphenated *sociomaterial* realm of studies which seek to profoundly explicate the essences of embodiment, temporality and spatiality across their analysis. With the primacy given to the human actor as intentional and reflective in their capacities and my emphasis on texturizing and interpreting identities, the materiality of the LMS, while salient and foregrounded

in parts of the analysis is done so in accordance with a weaker relational approach to the interplay between humans and the material. This standpoint views material forms existing independently of the social, (yet still acknowledging the social inflection of design) and argues that it is through imbrications and mangles that we witness and observe the socio-material. My operationalisation of 'imbrications' and 'mangles', may thus be summarised as follows:

Imbrications: a useful starting point to consider how the social and material are brought together through the overlapping of their agencies to initiate, alter, sustain, sediment, etc. practices.

Mangles: Mangles arise as temporal, possibly unpredictable, outcomes of these imbrications. Furthermore, this conceptualisation encompasses how stable imbrications might be interrupted, disrupted or disputed. Mangles might result in dances of agency, through accommodation and resistance, as social actors intend to return to the desired state of a stabilised imbrication.

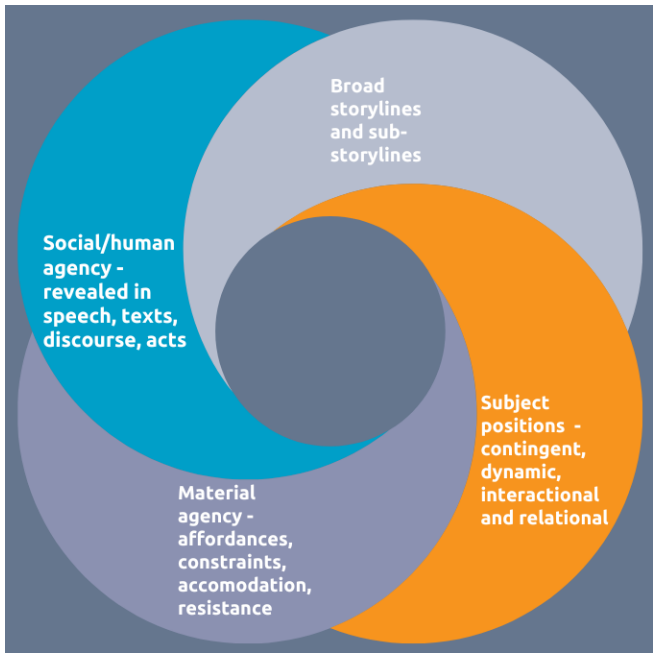

Figure 3.2. Theoretical framework of positioning theory and socio-materiality.

3.10 Conclusion

To summarise, identity work is partly accomplished through talk during social interactions when lecturers perform their identities as they describe their experiences and justify their interpretations. Yet these idealised renderings may be subverted or modified by human encounters with the material influence of the LMS, as it constrains and affords lecturer intentions and instances of resistance and accommodation arise. Moreover, this may occur within a system of power plays and relations, constructed and reconstructed in the mangle of practice, which has implications for the social positioning of lecturers of and by others (Symon & Pritchard, 2015). In this regard, lecturers may exert agency to defy dominant discourses to strategically shun or rebuff the subject positions assigned to them (Trent & Schroff, 2013) and attempt to renegotiate their identities (Hunt et al., 2013). In this way, identity can be theorised not only as being produced through imbrications, but also as a discursive tussle, or dance perhaps, if we may borrow the term from Pickering (1995). Furthermore, cast in a performative perspective, lecturers may be viewed as enacting their professional personas through the repetition of material and discursive practices mediated by the LMS (Schultze, 2014). The next chapter explores the research design and describes how this novel theoretical framework was mobilised.

Chapter 4: Methodology

4.1 Introduction

Table 4.1. below depicts a snapshot of the research design and the data collection methods utilised while providing the basic rationales for each. In this qualitative ethno-case study, the positioning of lecturers was explored through interviews with faculty members: lecturers, a course team leader, programme chairs, and support staff: specialists and the senior manager of the EdTech department. Furthermore, a document review was conducted to contextualise the study and observations of LMS use in action (both virtually and in person) served to enrich and triangulate the interview data. In this chapter, I discuss the rationale for a qualitative research design and elucidate my ontological, epistemological and methodological positioning. I then give a detailed account of the ethno-case study and data collection instruments, attend to my own positioning, discuss the ethical considerations, outline the data analysis procedures and present a discussion of the limitations.

Research question

To reiterate, the research question guiding this study was:

How are lecturer professional identities negotiated in the socio-material storylines of learning management system use?

Participants	Method	Rationale	Types
N/A	***Document review***	To provide contextual data to situate the study	1. Internal emails - EdTech team/leadership x10 2. Blackboard PD catalogue 3. Institutional strategy documents x 3 4. Employee handbook
Academic 12 lecturers (including 1 CTL and 2 programme chairs)	***Interviews*** (Average duration: 72 mins)	Elicit discursive positioning Permit instant feedback and follow-up (Sakala & Chigona, 2020) Employ mediating artefacts to evoke discussion (Trowler, 2014)	In-depth, semi-structured visual elicitation with screen sharing of the participants' Blackboard courses
Non-academic 1 EdTech specialist 1 Senior EdTech Manager 1 Blackboard specialist	***Interviews*** (Average duration: 66 mins)	Probe the institutional policy regarding prescribed LMS usage Gain a variety of perspectives regarding Blackboard	In-depth, semi-structured
Academic 8 lecturers 1 programme chair	***Observations*** In person/ virtual 'go along' (Carpiano, 2009) and recorded screencasts of lecturers engaging with Blackboard (Average duration: 20 mins)	Observe how the lectures utilise and engage with Blackboard Generate field notes (Aagaard & Matthiesen, 2016) Extend on interviewing to capture human entwinement with the material (Aagaard & Matthiesen, 2016)	**In person:** 1. F2F class x 2 2. Final exam invigilation x 2 **Virtual 'go along':** 1. Grading in the Grade Centre x 2 2. Uploading and organising content in course x 2 **Screencast commentaries:** 1. Type A/B courses x 2 2. Type C courses x 2 3. Grade Centre x 2

Table 4.1. Ethno-case study overview.

4.2 A qualitative approach

A qualitative approach accords with a professional identity study with a socio-material sensibility, attending to a relatively small number of participants to yield rich data (e.g., Paring et al., 2017; Symon & Pritchard, 2015; Stanko et al., 2020). This is in stark contrast to quantitative research designs which are generally objectivist, studying a limited amount of data across a wide range of cases (Ragin & Amoroso, 2011). Furthermore, quantitative studies approach numerical data with a positivist, reductionist approach to generate correlations and explanations (Silverman, 2013), while this qualitative research design draws holistically on unstructured data to arrive at an understanding or *verstehen* (Punch, 2005). Moreover, qualitative researchers generally assume an interpretive approach to furnish audiences with an understanding of how the social world is apprehended, experienced and constructed by social actors in the research context (Bloomberg & Volpe, 2008). The attention to interpreting findings thus necessitates a contiguous relationship between researcher and human participants, often involving in-depth interviewing, to yield rich insights into how people experience their occupational domain, technology and social interactions (Bryman, 2008). Accordingly, the qualitative research design was informed by my social constructionist ontological worldview and complementary interpretivist epistemological perspective (Daniel et at., 2017; Walsham, 2006).

4.2.1 Social constructionist ontology

The social constructionist ontological position broadly asserts that social phenomena and their meanings are not only continuously produced by social actors, but they are also in an ongoing state of revision (Bryman, 2008). While all entities, including people and materials have definitive properties, for social constructionist scholars, researching why certain properties assume importance, especially through interaction and language is foregrounded (Burr & Dick, 2017).

This ontological position is consistent with Stein et al.'s (2013) and Howard's (2022) assumptions regarding the intersection between identity and digital technology. While I sought to interpret the social milieu, there is emphasis on the contextual variations and how the social, occupational world is constructed through the 'multiplicity and relativity of human interpretations of reality' (Van Langenhove & Bertolink, 1999, p. 120). Lecturers are discursive, agentic actors who are socialised into adopting technologies, including the LMS, but their capacity for sense making, intended actions, positioning and identity performances may be restricted or subverted through their imbrications with digital artefacts and practices (Trowler, 2014). Accordingly, lecturers' sense-making is not static, and neither are identities, rather, they are in a constant state of flux (Bryman, 2008). Put succinctly, my ontological position holds that 'social reality is a construction made by humans and influenced and mediated by technology materials' (Moura & Bispo, 2020, p. 358).

As elaborated on in the Theoretical Framework Chapter, the study incorporates a socio-material lens, drawing on the work of positioning theory (Harré & Van Langenhove, 1999), the imbrication metaphor (Leonardi, 2013) and the mangle of practice (Pickering, 1995), rather than a *sociomaterial* outlook. In contrast to sociomaterial studies underscored by a critical realist meta-theoretical stance that promotes uncovering causal mechanisms within a stratified reality (Grix, 2004) or an agential realist ontology[10], which views the sociomaterial as inseparable and mutually constituted (e.g., Orlikowski, 2007), I view the social (human) and the material (things) as distinct, yet imbricated, separate, but dialectical (Putnam, 2015).

This accords with other scholars who eschew the presupposition that a mutual alliance or symmetrical interrelation exists, recognising instead a 'durable

[10] However, Orlikowski and Scott (2008) advocate for ontological inclusivity and multiple approaches to socio-material/sociomaterial research.

dissymmetry' (Suchman, 2007). As such, the materiality of the LMS and its related artefacts function asymmetrically to mediate through and within the discursive practices of the lecturers as they enact it, aligning with the social constructionist ontology. Moreover, it was my intent to 'bring back the human actors on to the sociomaterial stage' (Hawley, 2021, p. 12) whilst still attending to the material effects of the lecturers' engagement with the LMS. The lecturers, as human, social actors, were perceived as actively engaged in attributing meaning to the LMS and its related artefacts. Through the social constructionist lens, these artefacts are open to interpretative flexibility rather than holding a fixed, objective or absolute meaning (Aagaard & Matthiesen, 2016).

Positioning theory also has a base in social constructionism (Rochette et al., 2020). Material entities are said to influence and inform storylines, position and reposition social actors (Rochette et al., 2020). Yet, as I understand the world to be constructed through interactions where there are multiple realities and meanings, materiality takes on a more integral part in shaping these interactions (Aagaard & Matthiesen, 2016). Thus, in attending to the power of materiality, technological artefacts are viewed as entities that can *do*[11] something to make social actors act, rendering their implication in educational practice discernible (Aagaard & Matthiesen, 2016). Therefore, the socio-material aspect extends beyond positioning theory to displace 'the assumption that human beings act, and material objects are simply used' (Roehl, 2012, p. 114) to consider the relationality between human and material.

Social constructionism may also take on a relational[12] capacity, emphasising 'the relationality between people, institutions, material objects, physical entities and language, rather than the private sense-making activity of particular

[11] This ontological view is also sympathetic to how the human and material may occupy differing levels of power and influence (Tunçalp, 2015).

[12] Distinct from the purely relational ontology, where people and artefacts are considered inseparable (Paring et al., 2017).

individuals' (Fletcher, 2006, p. 422). Thus, the ongoing negotiations of identities should be viewed, in part, as involving intersubjective relationships which bridge the individual and the shared – identity work can be shaped by not only reflecting on the self, but also through the formation of identities in relation to others and the mutually implicated relations with materiality (Mavin & Grandy, 2016). Moreover, the enactment of technology is considered relational, for its affordances and constraints are specific to the perceiver and the context, permitting multiple interpretations of the same tool (Fayard & Weeks, 2014) and thus yielding distinctive positioning acts. The relational perspective is instructive as it heeds 'the ontological and power dynamics inherent in constructionism' (Grandy, 2018, p.177). In summary, Table 4.2. below displays the ontological 'impulses' (Holstein & Gubrium, 2008, pp. 374-375), as they specifically relate to this inquiry:

1	Observe and listen to the socio-material practices and activities that lecturers engage in while negotiating their subject positioning in their occupational milieu
2	Orient myself to action and positioning in interaction and discourse as generative of the lecturers' perceptions of social-material reality
3	Attend to what is happening, but emphasise how these socio-material activities and practices are sustained
4	Recognise that individual lecturers' lived experiences and the social world are epiphenomenal
5	Retain a sensibility to relational constructionism since identities in talk are often formed in relation to others and materiality (Kayi-Aydar, 2021; Mavin & Grandy, 2016)

Table 4.2. Ontological impulses.

Note. Adapted from Holstein and Gubrium (2008).

4.2.2 Interpretivist epistemology

As a researcher embedded in the socially constructed world, I sought to explore socio-material phenomena to inductively arrive at an understanding of lecturer professional identity, naturally assuming an interpretivist approach (Daniel et

al., 2017). Aligning with the anti-positivist paradigm, my epistemological positioning holds that there is no one true meaning existing or capable of being discovered since ‘what we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to’ (Walsham, 2006, p. 320). As such, I sought to glean holistic, subjective understandings of ‘culturally derived and historically situated interpretations of the social-life world’ (Crotty, 1998, p. 67) to ideographically focus on the uniqueness of the research context at hand. Essentially, my concern was in the generation of emic, ideographic descriptions to foster authentic conceptual understandings of lecturer professional identities fashioned through the enactment of the LMS (Neuman, 2003). The ontological and epistemological positions outlined here logically informed my research methodology, a qualitative ethno-case study (Parker-Jenkins, 2018), described in the following section.

4.3 A socio-material ethno-case study

Endeavouring to open black boxes, to appreciate what material things do in the educational world, socio-material research is largely ethnographic in nature (MacLeod et al., 2019). However, this study takes a slightly different approach, characterised by the more limited and bounded ‘ethno-case study’ (Parker-Jenkins, 2018), that still retains ‘an ear for meaning and an eye for materiality’ (Aagaard & Matthiesen, 2016, p. 9).

Similar to Ståhl’s (2021) inquiry into online and offline identities and Hawley’s study of agency in online writing (2021), this study is located on the somewhat blurry boundary between the two broad design approaches of ethnography and case study. My embeddedness as a researcher and faculty member in the institutional context is in consonance with an ethnographic approach (Hawley, 2021), since, at its core, ethnography is concerned with exploring, studying and interpreting social actors’ actions and accounts in their everyday context (Henderson, 2019). However, framing the design as an ethno-case study

(Parker-Jenkins, 2018) acknowledges that my level of immersion in the 'culture' may not be reflective of a traditional ethnography with protracted time periods spent in the field (Parker-Jenkins, 2018). Staying true to ethnography in its range of methods (interviews, observations and field notes), the ethno-case study yields greater flexibility, especially in contemporary times when shorter fieldwork duration may be counterbalanced by technology (e.g., Zoom) (Parker-Jenkins, 2018). Table 4.3. below, further details how the study meets the criteria of an ethno-case study as recommended by Parker-Jenkins (2018):

Parker-Jenkin's (2018) ethno-case study characteristics	**This study**
bounded phenomenon	• Specific institutional context • Emphasis on a particular technology
situated within a richer, broader context	• Located in the wider EdTech debate
conveys the essence of conducting a study with human subjects	• Adopts a socio-material sensibility, yet human participants are integral
mobilises ethnographic techniques	• Semi-structured interviews with visual elicitation, observations, field notes
acknowledges that time in the field/immersion in the context might not be as lengthy as a traditional ethnography (Sözeri et al., 2021)	• Fieldwork duration of six months • Digital technologies provided efficiency in data collection (e.g., Zoom; participant-generated screencasts (Ståhl, 2021)
furnishes readers with an appropriate level of expectation regarding the findings and claims to knowledge	• Presents detailed findings • Insights/conclusions are illustrations of the more complex, mosaic picture that is typical of a traditional ethnography (Sözeri et al., 2021)

Table 4.3. Features of ethno-case studies mapped to this inquiry.

Concentrating on specific actors, technologies and practices when adopting a sensibility to socio-material influences (MacLeod et al., 2019; Walsham, 2006) is congruent with recent studies (e.g., Acton 2017; Daniel et al., 2017; Lueg et al., 2022). Limiting the scope of analysis to an in-depth, single case is also increasingly called upon by key researchers taking a critical approach to

EdTech (e.g., Castañeda & Villar-Onrubia, 2023; Ramiel, 2019, 2021). Moreover, a single-case approach is perhaps the most suitable means of drawing on lecturers' and specialists' lived experiences to advance emergent knowledge even with a relatively limited sample in a specific educational setting (Parker-Jenkins, 2018). Whilst the single site approach may be open to critique, it aligns with Yin's (2003) proposition that findings from such studies are perhaps more generalisable to theoretical propositions than broader contexts (Watson, 2009). Walsham's (2006) persuasive argument in defence of single-case studies clarifies how generalisations may 'take the form of concepts, theories, specific implications or rich insights' (p. 322). According with this proposition, and the social constructionist view of socio-materiality, I endeavoured to generate valuable insights through a study of specific and situated LMS practices (Jones, 2013). The design also functioned 'to preserve the multiple realities, the different and even contradictory views of what is happening' (Stake, 1995, p. 12) through intensive and targeted data collection (Verd et al., 2021). Thus, the interpretive and heuristic ethno-case study (Merriam, 1998) aimed to capture the imbrication and mangling effects of digital artefacts, practice and identities (Trowler, 2014) using the range of data collection/construction instruments discussed below.

4.4 Data collection and construction

Whilst data 'collection' is a common term used across research paradigms, it has its roots in the positivist camp. In this study, I would characterise data as both collected *and* constructed (van Niekerk & Savin-Baden, 2010): collected from the documents reviewed and observations conducted and constructed both through the planned constitutive conversations with the participants and the screencasts they specifically produced.

4.4.1 Documents

Document review, whether digital or analogue, is a common feature of ethno-case studies (e.g., Henderson, 2019; Khalil & Kelly, 2020) to explore 'policy-in-text' (Saunders et al., 2015). Thus, this procedure provided contextual data to situate the study. The selection criteria were based on texts inherent to localised LMS lecturer practice (MacLeod et al., 2019) to gain a rich understanding of the institutional and technological culture that shaped the lecturers' routines and practices (Gaskin et al., 2014). This instrument further complemented the research design in generating interview questions and guiding observations (Goldstein & Reiboldt, 2004). Furthermore, the documents, as additional information sources, provide a degree of triangulation through 'convergence and corroboration' (Bowen, 2009, p. 28). The documents and the rationales for their selection are detailed in Table 4.4. below.

Document type	Rationale
10 Internal emails -Teaching with Technology team/leadership	Chart the leadership and EdTech's team framing of lecturer engagement with Blackboard
Blackboard PD catalogue	Understand the range and type of PD courses available
3 Institutional strategy documents	Gain a broader perspective on the institution's position on EdTech
Employee handbook	Understand how Blackboard use is weaved into lecturers' employment and performance evaluation criteria

Table 4.4. Overview of documents and rationales for selection.

4.4.2 Interviews

4.4.2.1 Participant sampling strategy

Purposive sampling served to focus the data collection, and recruit both faculty members and support staff with the knowledge and representative experience of the research phenomena (Hu et al., 2019). Using the internal directory, email

invitations were distributed to twenty-five prospective lecturer informants who had been employed at the college for at least five years and had sufficient experience of Blackboard as both an optional and mandatory platform. Additionally, five programme chairs, two technology specialists, two LMS specialists, four course team leaders and the senior manager of the EdTech department were also invited.

This resulted in an expedient[13] recruitment of twelve expatriate lecturers[14] across different disciplines, including the English language, general education, mathematics, computer information science, social sciences and business divisions.[15] This was valuable as faculty from different departments were presumed to have varying levels of autonomy in organising and editing their Blackboard course shells and thus, potentially disparate usage patterns. Moreover, to glean a further understanding of how faculty were positioned by the institution, those with supervisory roles provided a window into how the lecturers' engaged with the LMS. Thus, it was anticipated that this would result in the elicitation of a variety of perspectives and situated LMS experiences. The remaining staff members who agreed to participate were one EdTech specialist, one LMS specialist and the senior manager of the EdTech department. The participants' occupational roles are outlined later in Table 4.6.

4.4.3 Semi-structured visual elicitation interviews with lecturers

Interviews can be thought of as a process of mutual data construction between the interviewer and participant (Brinkman & Kvale, 2018), and aligning with the social constructionist ontology, semi-structured interviews were conducted since they offered flexibility and permitted the elicitation of rich accounts

[13] People available and interested in the study (Freebody, 2003).

[14] This includes the course team leader and programme chairs.

[15] Some lecturers teach in more than one division, for example English with general education, or have experience of different course types in previous semesters.

(Robson & McCartan, 2016). Rather than a rigid protocol, the semi-structured nature focused the discussion, worked the identified topic areas into the conversation (Peel, 2020), enabled participants to conceptualise issues and facilitated instant feedback and follow-up (Sakala & Chigona, 2020). Meaning making became possible through discursive production as the participants positioned themselves (and others/materiality) in retrospect (Hu et al., 2019). Thus, the participants' subjective perceptions and positioning acts could help yield valuable answers to the research question (Hu et al., 2019). These narratives could then be interpreted holistically and translated into rich, thick descriptions, embedded in the storylines (Punch, 2005).

Conducting a pilot interview prior to undertaking the substantive work is highly recommendable and a sign of sound research practice (van Teijlingen & Hundley, 2001). The pilot interviews I conducted with two colleagues[16] permitted me to gauge the usability and efficacy of the draft interview schedule (Bryman, 2008). This unmasked some unanticipated issues at a sufficiently early stage since my colleagues were candid and offered critique regarding ambiguous questions. The pilot interviews also permitted me to refine my interview style as I became cognisant of clustering together certain questions, to ensure that the exchanges proceeded coherently. The finalised schedule (although remaining semi-structured) was well-positioned to encourage the lecturers to reflect on areas *inter alia* their beliefs surrounding may LMS topics, including usage patterns, course design, communication, PD, difficulties and professionalism (Appendix A).

Considering the ongoing pandemic, remote interviews were conducted and recorded using Zoom to achieve the emic perspective without having face to face interaction (Ståhl, 2021). While interviewing, I began by building rapport

[16] These data were excluded from the analysis since later interviews were deemed to elicit data more naturally and authentically (van Teijlingen & Hundley, 2001).

with the participants through some pleasantries. I then asked them to define and describe a learning management system, to contextualise the rest of our interaction. Utilising a visual elicitation technique (Pauwels, 2020) the participants were asked to share their Blackboard interface on Zoom, which acted as a prompting device, or a mediating artefact, to evoke discussion and evolve the interview content (Trowler, 2014). Participants were encouraged to tour and wander through (Wherton et al., 2019) their Blackboard spaces and to identify and comment on the organisation and content of courses. As the lecturers narrated their thoughts and responded to interview questions, they discursively positioned themselves, the institution, students and colleagues and implicitly revealed how they were positioned by the materiality associated with the LMS (Mulcahy, 2011).

Meanwhile, the interviews with those participants with a supervisory role (Course Team Leader and Programme Chairs) probed beyond personal experience and asked the participants to reflect on other faculty members engagement with the LMS, evoking Other positioning of the lecturers.

Aiming to ‘incite narrative’ (Watson, 2006, p. 512) I was satisfied that the participants were amenable to speaking at length, with an average interview duration of seventy-two minutes (the shortest 50 minutes and the longest an hour and 40 minutes). Thus, as the participants were forthright and communicative, this enhanced the credibility of the findings (Howard, 2019). In addition, some interviewees commented on how they found our interactions to be a stimulating, reflexive exercise. Perhaps this could be attributed to the timing of the fieldwork, since the pandemic had certainly heightened the organisational politics surrounding lecturer use of the LMS, as will be apparent in the findings.

4.4.4 Semi-structured interviews with support staff

Due to the small sample size and varying roles, a pilot interview was deemed unnecessary. Also conducted on Zoom, these interactions yielded rich accounts of 'policy-in-action' (Saunders et al., 2015) regarding prescribed LMS usage and training objectives to unveil how the lecturers were positioned by institutional directives and discourse. Questions for these participants probed *inter alia* course design protocols, perceived lecturer engagement and competency in the LMS and usage recommendations (Appendix B). The support staff accounts also revealed the technical challenges that the lecturers faced and how these socio-material outcomes were mediated through collegial interactions.

4.4.5 Observations and screencasts

As discussed previously, researchers utilising positioning theory generally limit their accounts to positions and storylines in discursive and written acts, rarely extending their analysis beyond words (McVee et al., 2021). Given this inquiry's socio-material sensibility, it was important to yield data to reveal how materiality is directly implicated in storylines and 'unfolding narratives' (Davies & Harré, 1990, p. 53). 'Interviews favour verbal interactions and thus do not necessarily take into account how people … engage and participate in concrete social and material situations' (Aagaard & Matthiesen, 2016, p. 8). Therefore, while the visual elicitation interviews summoned the LMS into our interactions, it was anticipated that viewing the authentic enactment of Blackboard would be even more conducive. The observational sessions were valuable in unmuting the material: providing insight into how the lecturers utilised the LMS interface and related artefacts (e.g., course shells and teaching materials), whilst allowing the generation of detailed field notes to document the materiality of the digital space (MacLeod et al., 2019). While producing these field notes, it was helpful

to craft reflective questions about the socio-material practices being performed, adapting the suggestions proffered by Moura & Bispo (2020, pp. 360-361):

Does the materiality of the LMS and its associated artefacts perform any mediation in administrative and pedagogical practices? How?
What, if any, conflicts between this materiality and the participants occur?
How does positioning occur/become shaped through these interactions?

The topic of the observation was negotiated between myself and the participant, with the objective being to capture a variety of use cases, as shown in the beginning of this chapter in Table 4.1 The fourteen observational sessions of faculty (approximately twenty minutes per session) were conducted in three manners, according to the participant's preference. Firstly, virtual 'go along' (Carpiano, 2009) ethnographic observations of the lecturers captured the simultaneous human enactment of the materiality of Blackboard (Aagaard & Matthiesen, 2016). These were conducted and recorded remotely via Zoom. Additionally, six participants recorded screencasts of their use of the LMS and subsequently shared a link with me. Finally, were the in-person observations.

The observational element mediates the ambiguity associated with the situated character of interviews when undertaking identity research, since it enabled me to directly shadow the human actor (Latour, 2005; Symon & Pritchard, 2015) executing tasks including uploading/organising content and using the Grade Centre. Furthermore, this shadowing practice helps to appreciate the dynamics of LMS use from the participants' perspective, as they would often narrate the tasks they completed, especially during the screencasts (Moura & Bispo, 2021). Interesting instances of the 'broken hammer' phenomenon also occurred, in which disruptions related to the LMS became transparent in use and provided 'fruitful opportunities to reflexively consider the normal role of artifacts in everyday practice' (Aagaard & Mathieson, 2016, p. 10).

4.5 Positioning myself

The insider/outsider issue is contentious: some scholars question the conformity of ‘insider’ research with established academic rigour (Brannick & Coghlan, 2007) while others point to the mythical nature of the valid and objective strength of ‘outsider’ studies (Hammersley & Atkinson, 2007). Others suggest that insider studies reveal the social realities of organisational life which outsiders may never be capable of exposing (Brannick & Coghlan, 2007). However, while ‘insider’ researchers are usually defined as those professionally embedded in the research context, and ‘outsiders’ as those with no affinity to the study’s locale (Coghlan & Brannick, 2005), bifurcating insider and outsider into a simple dichotomy is an oversimplification.

It may be more pragmatic to consider my insiderness/outsiderness as existing across a spectrum (Mercer, 2007). I have been employed at the institution for a relatively short period, which perhaps demarcates my ‘insiderness’ to some degree, yet my situated experience and preunderstanding of the context allowed me to cogently select documents, draft interview questions and plan relevant observations (Brannick & Coghlan, 2007). However, some participants I knew personally, potentially engendering greater rapport, candour and credibility (Mercer, 2007). Thus, it was pertinent to compartmentalise data in accordance with where it emanated from to avoid any abuse of trust - e.g., the interview or an incidental fragment transpiring through informal interactions (Coghlan & Brannick, 2005; Mercer, 2007). Meanwhile, participants working in other academic divisions and support roles were part of a distinctive occupational sub-culture that I was fairly unacquainted with, shading my status towards the outsider pole. Overall, as a researcher, I found myself, at times, ‘intellectually poised between familiarity and strangeness’ (Hammersley & Atkinson, 2007, p. 89).

An interview in and of itself involves positioning acts to be understood in terms of the moral order (the participants perceived duty to respond), discursive

repertoires (how they respond), invited materiality (how the visual elicitation shapes the interview) and its storyline (the participants' awareness that this study was for my PhD thesis) (Harré & Van Langenhove, 1999). Moreover, my self-performance as a researcher unquestionably includes discursively positioning the LMS and participants during questioning, subject to its own variability contingent on who I was speaking to and why (Walshaw 2008). This raises the issue of bias which could be woven in and detract from the notion of verisimilitude (Robson, 2002). Therefore, I adhered to Holstein and Gubrium's (2003) recommendation to limit my own comments during our interactions since 'interviewers are generally expected to keep their "selves" out of the interview process. Neutrality is the byword' (p. 13). Whilst I undoubtedly experienced some allegiance and empathy towards the informants, it was important to retain awareness of my proximity to the research object to avoid skewing my perspective and arriving at fallacious interpretations (Brannick & Coghlan, 2007). Thus, the obligation to be both epistemically and methodologically reflexive required my closeness to the data, but also demanded iterative dislocation to reflect on how my own positioning and subjectivity was inherently entwined within (Brannick & Coghlan, 2007). This reflexivity was also achieved through regular discussions with my supervisor and by keeping a research diary.

As researcher subjectivity is invariably implicated in interpretive qualitative research, submitting an intricate report on researcher bias is extraneous for 'the researcher self is always performed in and for others' (Walshaw, 2008, p. 335). I reflexively acknowledge that my identities as a faculty member and a researcher are to some extent, embedded in the knowledge borne out of the meaningful social realities of the participants, since I interpreted their positionings in their own terms and by virtue of the intersubjective interactions we engaged in (Bryman 2008; Howard, 2021a). This subjectivity is counterbalanced in the exposition of the storyline's thick descriptions which portray the veracity of the participants' own voices and my adherence to

principled practices and transparent reporting (Bryman, 2008). Certainly, while we strive for authenticity and intuitive understanding, there can be no perfect representation of social actors' voices, for in the analysis and writing up of a thesis, 'there is the sure knowledge that all texts are historically, politically and culturally located. We, like the texts we write, can never be transcendent' (Lincoln & Denzin, 1994, p. 582).

4.6 Ethical considerations

This study received ethical approval from Lancaster University (Appendix C). Ethical approval was also granted by the research site, to align the study with the standards in place there. Deontological considerations arise regularly and markedly in qualitative inquiries probing otherwise private aspects of participants' occupational worlds (Punch, 2005). Accordingly, ethical issues surrounding informed consent, data collection, data guardianship and confidentiality were chief priorities.

Respecting participant rights and alleviating any potential disquietude was imperative (Bloomberg & Volpe, 2008). Before the interviews, the respondents received a comprehensive information sheet and could ask clarifying questions prior to consenting. Participants could relinquish consent at any time before or during the interview/observation and up to two weeks following, which was a reasonable and pragmatic limit. Although I was not in a supervisory position over the potential interviewees, as a researcher situated in the occupational context, the issue of coercion was heedfully considered. Firstly, the participants were approached indirectly by email, to minimise any obtrusiveness (Bennett, 2020), especially since I knew some of the potential participants. Furthermore, the information sheets stated that declining to take part would have no repercussions for the participants' standing in the college. Therefore, it was reasonable to assume that the participants understood and appreciated the research purpose and did not feel any coercion.

However, the integration of the LMS occurred within a situated context with already complex power dynamics between leadership, support staff and faculty (Tshuma, 2021). To mediate the power imbalance skewed towards the programme chairs/support staff in 'interviewing up' (Edwards & Holland, 2013, p. 84), I reiterated the study's purpose and respectfully acknowledged the time given by the participants at the start of each interview. Additionally, all participants were advised that they did not need to answer any questions which they were uncomfortable with (although that did not happen). While there were no guaranteed benefits to the study, participation in the research could deliver a rewarding sense of reciprocity, as some participants have conducted postgraduate research at the same institution. The participants could also cite their contribution to PhD research in their annual performance evaluation.

I selected the Zoom platform for conducting and recording the interviews and observations since the data could be stored locally (lessening its vulnerability) and for the benefit of secure real-time meeting authentication and encryption (Archibald et al., 2019). All data were securely saved on an encrypted personal computer, which only I could access. Following completion of this PhD thesis, the data will be destroyed.

It is customary for thesis writers to provide tables of participant demographics. However, due to the protective nature of UAE federal institutions it was essential to protect the participants by concealing any personal identifiers (Howard, 2022). Furthermore, a condition of the ethical approval granted by the research site was to refrain from naming it and this led me to anonymise any documentary evidence presented in the findings. Should I publish work from the thesis, the specific nation will also be redacted and replaced with 'a Middle Eastern tertiary institute'[17]to extend further confidentiality to the college. Whilst

[17] This is a common practice for researchers at the college who publish their work.

complete anonymity can never be guaranteed, it was hoped these steps would protect those who kindly participated.

4.7 Data analysis

In line with the theoretical model expanded on in the preceding chapter, the analysis drew on principles of thematic analysis (Bryman, 2008) alongside positioning theory (Hu et al., 2019) and the socio-material approach I previously employed to examine lecturer professional identities in gamification (Howard, 2022). Inherently flexible, thematic analysis is not married to a particular theoretical lens and aligns well with social constructionist research (Braun & Clarke, 2006). Moreover, it offers a comprehensive means of analysing data across a corpus and was used for the transcripts and field notes to reach saturation with a relatively small cohort (Malterud et al., 2016). I outline the procedure in greater detail, mapping it to the main guidelines of Braun & Clarke (2006, 2012).

4.7.1 Becoming familiar with the data

Since the Zoom platform conveniently provides transcriptions, data familiarity commenced from the outset. I reviewed, checked and edited the transcripts for any inconsistencies shortly after each interview and began reflecting on the accounts. Intensive reading and re-reading of the transcripts and field notes was accompanied by memoing to aid the noticing process and search for content relevant to the research question (Braun & Clarke, 2012).

4.7.2 Coding

Following Hagen et al.'s (2020) hybrid approach, the analysis began with thematic coding followed by the application of positioning theory. The transcripts were exported to 'clean' MS Word files and along with the field notes (please see Appendices D and E for examples) were uploaded into Atlas ti.22

software, enabling the systematic retrieval and coding of the considerable data amassed (Bryman, 2008). To help organise the data, I applied 54 inductive semantic codes to capture surface meaning (Terry et al., 2017), with labels such as '*student-faculty-dynamic, human agency, responsibility'*. Incorporating a socio-material lens required revisiting the data to observe elements including how the LMS was enrolled in power relations, the participants' perceptions of affordances or constraints and how materiality appeared to wield agency or respond in unpredictable ways (Pickering, 1995; Suchman, 2007).

4.7.3 Crafting sub-storylines and storylines

Combing the coded data, I searched for 'repetitions, similarities and differences' to organise it into emergent categories (Ryan & Bernard, 2003, p. 103). This process involved collapsing and clustering codes to depict lucid and intelligible patterns (Braun & Clarke, 2012). Again, this was an iterative procedure which involved searching for 'consistent motifs' arising from the coded data (Fenwick, 2007, p. 516) which formed sub-storylines and can be considered somewhat analogous to the concept of sub-theme. The sub-storylines demonstrated how the socio-material imbrications at the institution influenced organisational routines, practices and lecturers.

Next, positioning theory was utilised to code beyond the descriptive and make analytic sense of the data (Rochette et al., 2022). Given the flexibility of positioning theory, the researcher may focus on any aspect of the original triad (Hirvonen, 2016). In this study, speech acts mainly emanated from recall during interview responses, with other episodes of positioning occurring during the observations (Shi, 2020). Whilst positioning theory can be used across disciplines, including applied linguistics, similar to Shi (2020), the close and iterative reading of the interview transcripts centred on *what* participants said,

rather than *how*[18] it was delivered (Riessman, 2008). This application of positioning theory is instructive as 'when we tell stories about our lives, we perform our preferred identities' (Riessman, 2003, p. 337), with participants sometimes using interesting metaphor and analogy as they reflexively offered 'expressions of judgment and attitudes towards people and technology' (Stein et al., 2013, p. 171). Furthermore, the participants tacitly, intentionally and dynamically positioned themselves and others, vis-à-vis how the LMS assisted or hindered administrative and pedagogical practices (Stanko et al., 2020). I began applying initial codes to small chunks of data, at the sentence or paragraph level, since I wanted to retain the overall sense of narrative to each fragment (Symon & Pritchard, 2015). The 'level of granularity' (Stein et al., 2013, p. 170) corresponded with the lecturers' beliefs, experiences and perceptions of the LMS and related practices in conjunction with how their LMS engagement was framed by others. The programme chairs, course team leader and support staff's accounts were interpreted and coded to reveal further positioning of the lecturers from an institutional perspective, which predominantly corresponded with 'pre-positioning' and 'Other' positioning. Table 4.5. below shows the types of positioning, the range of intentionality used in this heuristic and some coding examples.

Within the sub-storylines, the subject positions were interpreted and labelled, using participants' own language where applicable to lucidly convey each positioning's essence (Braun & Clarke, 2012). The sub-storylines were then organised into higher order, or broader storylines to provide a thick description of what the LMS is *doing* in terms of institutional framing and lecturer positioning, mobilising the anaphoric 'The LMS as …'

[18] Attending to paralinguistic/extralinguistic aspects, for example.

Type of positioning	**Explanation**	**Examples from the data**	**Coding examples**
Pre-positioning	The duties and functions assigned to lecturers in their occupational duties (role-like elements). For example, how LMS usage is framed by the institution/leadership.	**Faculty should use** the LMS as creatively and as **to the greatest extent possible.**	Institutional position Attempt-sediment Pre_pos_user
Ideational (self)	A positioning statement about oneself which demonstrates idealised notions of who one would like to be which justifies claims to identity positions (McInnes & Corlett, 2012)	**I feel quite proud as a lecturer**, and I hope the **students think of me as professional.**	Emotional response Pos_proud lecturer Desired self-image
Other	A positioning statement about another person	We have **certain people** that should not be course team leaders. They look **at the sharing of information as not being appropriate.**	CTL Other_pos_neg Power dynamic Mgt_style
Relational (self-other)	Oppositional: a participant positions themself in opposition to others, institution, technology, etc. Aligned: a participant aligns themself with others, institution, technology, etc.	It's **just very dull,** and I find it a **bit clunky** to navigate. I saw **Blackboard** as a **good opportunity to eliminate printing** and get **everything arranged for the students**	Interface-constraint Pos_rel_opp LMS_hum_agency Affordance-pandemic Affordance-St-pedagogy Pos_rel_align
Range of Intentionality	**Explanation**	**Example**	
Tacit	A positioning occurring implicitly	There are just so many **PD courses** about **Blackboard**. I couldn't even name them all. You **have to do them**, **even if you don't think you need them**	PD LMS Forced compliance Power dynamic Pos_learner
Intentional - Performative	A deliberate positioning	**I've taught this course for about five years**, so **I know what I am doing.**	Professionalism Experience Pos_perf_confidence

Table 4.5. Types of positioning and coding examples.

Note. Adapted from Dennen (2007); McVee et al. (2021).

4.7.4 Presenting the findings

Along with some novel terms I derived from the analysis, I present the findings by creating a narrative of each sub-storyline using thoughtful decluttered excerpts (Riessman, 2008), or 'narrative fragments' (Symon & Pritchard, 2015), screenshots and extracts from the observations. The quotations were selected based upon their ability to target and illustrate a point and are at times reflective of multiple viewpoints. The participants are referred to in the Findings and Discussion Chapters (5–8) according to the identifiers elaborated on in Table 4.6.

Position	Brief description	Identifiers
	Academic	
Lecturer	A non-tenured faculty member educated to MA or PhD level	Lecturer A - I
Course Team Leader	A course team leader who is a lecturer chosen by a dean to oversee and manage cross-listed courses	CTL
Programme Chair	A faculty member who is the line manager for a group of lecturers in a department	PCA, PCB
	Non-academic	
Senior Specialist (EdTech)	A senior specialist who provides support and training for the pedagogical integration of EdTech and creates PD training courses for the Blackboard team	SSE
Senior Specialist (LMS)	A senior specialist who delivers Blackboard training and provides technical support	SSL
Senior Manager (EdTech)	The senior manager who oversees all professional development and ensures the pedagogical integration of EdTech aligns with government regulations	SM

Table 4.6. Participants' positions, roles and identifiers.

4.8 Addressing methodological limitations

A noteworthy limitation with interviewing is the 'Hawthorne effect' (Neuman, 2003, p. 256). This is a type of reactivity whereby participants' responses and behaviours may have been subconsciously modified, for example the lecturers may have fashioned replies to meet their perceptions of my expectations (Howard, 2021b). Support staff feedback might also be problematic, as employees might have responded in a 'politically' suitable manner (Howard, 2019). While the protocol for faculty did not include forwarding the interview schedule in advance, two of the Arabic support staff requested this due to English being their second language. While this did allow them better comprehension of the questions, it could perhaps affect their spontaneity and authenticity in providing details (Chung & Smith, 2008). However, due to the semi-structured nature of the interactions, follow up questions were asked for clarity and expansion.

Minimising the effects of reactivity and ensuring trustworthiness was mediated through respondent checking of the interview transcripts and email follow ups on several occasions to confirm or extend on my understanding of some of the responses (Bryman, 2008; Punch, 2005). Respondent validation thus helped to enhance clarity and accuracy of the data and my interpretations of them.

In addressing some limitations of observing social actors, it is appropriate to note that the observed enactments do not provide a comprehensive picture of manifold LMS practices, but instead, offer a snapshot. Furthermore, in all modes of observation, the lecturers may perform and act differently due to either the researcher being in the room, accompanying them virtually or studying their screencast later. Goffman (1959) described how social actors perform both 'frontstage' and 'backstage' behaviour. Most occupational behaviours are frontstage, whereby people purposively expose what they want to be seen (Goffman, 1959). Backstage conduct, which is thought to be more natural, organic and private is usually reserved for friends and family (Goffman,

1959). This raises the issue of how authentic the behaviour and narratives were during planned, overt observations. On the other hand, observations do add some rigour, since interviewing alone relies on selective memory and usually entails more recent events taking on a more robust resonance than earlier experiences (Cotton et al., 2010). Ultimately, 'seeing' actual practice can aid in making 'the familiar strange and interesting again' (Erikson, 1986, p. 121) to overcome the interpretivist's risk of over-familiarity with the context under study. Perhaps without this, it could render the 'findings overshadowed by the enclosed, self-contained world of common understanding' (Mannay, 2010, p. 94). Thus, in conjunction with the interview data, triangulation could be achieved with the observations not only to enrich the analysis, but also bolster the trustworthiness and robustness of the single ethno-case study (Bryman, 2008; Daniel et al., 2017).

The coded data which yielded storylines and identity positions were of course analysed by a sole researcher in this doctoral study which does not allow for multiple coder perspectives or inter-coder reliability (Fereday & Muir-Cochrane, 2006). Yet, perhaps, in the qualitative field, the most one can hope for through inter-rater reliability is that two or more researchers have learned to code in the same manner, rather than to any degree of accuracy (Braun and Clarke, 2012; Terry et al., 2017). Furthermore, in the absence of a universal truth, social constructionist-interpretive scholars emphasise subjectivity and dispel the notion that there exists a singular way to analyse data (Terry et al., 2017).

Quality in thematic analysis remains a vital concern, especially given the criticism it has received for its unwavering flexibility (Terry et al., 2017). Rather than through the abstracted notion of accuracy, quality is achieved through a systematised process, rigour and consistency (Terry et al., 2017). Following Braun and Clarke's (2012) guidelines, I presented an audit trail to demonstrate trustworthiness. Rigour can be achieved through careful planning, integrity and reporting, and is characterised by logical consistency between the theoretical framework, research instruments and analysis grounded in the subjective

meanings of the social actors, with participant responses conveyed in their words to bolster the credibility of the study (Fereday & Muir-Cochrane, 2006; Patton, 2002). Furthermore, the ‘consistency between the researcher's constructs and typifications and those found in common-sense experience’ can meet the postulate of adequacy (Schutz, 2012, pp. 43-44). Issues of cohesion and consistency are further resolved by making one’s epistemological position undergirding knowledge assertions specific (Holloway & Todres, 2003).

4.9 Conclusion

Having explained the research design, approach to analysis and methodological limitations, the next chapter begins the exposition of findings by discussing and contextualising the research site, before moving on to the key storylines and lecturer subject positions arising from the analysis.

Chapter 5: Contextualising the research site

The UAE college offers bachelor's degrees in a range of disciplines including business, media and computer information science. The students are local citizens whose education is fully sponsored by the government. In common with most HE providers in the region, and as explained in Chapter 1, the institution's faculty are predominantly expatriates (Austin et al., 2014; Singh et al., 2021). While during the pandemic instruction moved online, face-to-face lecture delivery on campus and the flipped model (a combination of in-class sessions and asynchronous, independent study for select courses) have since been reinstated.

5.1 The LMS pre-pandemic

Blackboard was first introduced at the institution after the migration from WebCT Vista in 2012 (SSL). Yet while Blackboard has had a long-standing presence in the college, faculty uptake had been optional, thus, historically, the LMS was permitted to linger in the background shadows of the organisation. Most lecturers reflected on how they originally viewed the LMS as a simple repository for content (Brady & O'Reilly, 2020), at the periphery of practice, rather than an all-encompassing site for engaging in active teaching and administrative tasks. Previously, those preferring not to use the LMS[19] (Lecturers A, D, E, F, G) would rely on paper handouts, employ external sites to distribute materials, direct students to external links for informal assessments and even create their own websites. As Lecturer E recounted, '*we went with our own website because at the time, we thought it was more user friendly for the students. Since we have had to use Blackboard, that has all changed*.' Furthermore, some had questioned the extent to which Blackboard enhanced

[19] Except for grade inputs.

the learning process: '*I thought it was just a platform that's all. It was a nice shiny platform. Back then, I didn't know exactly what it could do or if it would help us'* (Lecturer A). This is redolent of the more 'maverick' approach to the LMS, where it is utilised flexibly according to individualised preferences, rather than institution-wide, mandated deployment (Bigum & Rowan, 2010, p. 214).

5.2 The LMS during the pandemic

At the practical level, the pandemic ushered in a new 'field of moral orders' (Van Langenhove, 2017, p. 7) framed by social distancing and hygiene requirements promptly initiated by the institution. The coordinated agency of the leaders, managers and specialists produced a significant *material to human* imbrication (Leonardi, 2012a) as they championed the LMS to bridge the new reality of remote practices and provide 'certainty in the midst of uncertainty' (Woolgar, 2003, p. 8). Consequently, regardless of lecturers' prior use patterns, this signalled a transition from the moderate 'maverick' to the insistent 'corporate' approach (Bigum & Rowan, 2010, p. 214).

5.2.1 Institutional HR & PD policy

The drive to sediment Blackboard was evidenced in performance evaluation objectives which were instated during the pandemic (and still active to date), including: '*Faculty should use best practices and provide evidence of the interactive use of technology, including Blackboard'* (institutional strategy document). Embedding this requirement in the appraisal process explicitly mobilised the platform to enforce HR obligations related to lecturers' future employment standing. This evidenced a significant power dynamic, since professional alignment with organisational policy could directly implicate the tenuous employment security of expatriate lecturers (Al Serhan & Houjeir, 2020).

In conjunction with HR policy, PD interventions were viewed as a critical factor in increasing faculty awareness and use of Blackboard, married with a salient deficiency framing of lecturer competence, as mentioned in an institutional document, '*More training opportunities and a centralized strategy is required to rapidly upskill and certify faculty in Blackboard.'* Instances of the deficit discourse pervaded specialists' accounts of training and internal emails, as markedly highlighted in the excerpt below from an executive at the college:

Quite frankly, we have done a poor job of taking advantage of the training and resources that have been offered for Blackboard. In fact, our data shows that many faculty are under prepared to work online and haven't taken advantage of the training available. (Source withheld)

This genre of top-down remonstrative communication cemented an influential narrative, with the LMS being enrolled into exposing the perceived training deficits of the faculty members (Swerzenski, 2021). Moreover, it discursively framed the lecturer as incomplete, unprepared and undertrained while indexing them as potential objects for change (Ideland, 2020). As this occurred, the range of in-house Blackboard courses dramatically increased, highlighting the desire to reshape the lecturers' practices and encourage the deployment of Blackboard tools, with mandatory interventions including '*Establishing an interactive environment in Blackboard'* and '*Managing your courses in Blackboard'*. From Leonardi's (2013) perspective, LMS training can be viewed as an ongoing and increasingly sedimented routine as the socio-material 'nature of using the [LMS] enrols educators into a standardized practice that is set by political and managerial objectives' (Johannesen et al., 2012, p. 790). With this, the LMS appeared to be performed as a vehicle for institutional change (Hannon, 2014), as it became 'totemised' (Paring et al., 2017, p. 856) and upheld as a 'landmark' (Stein et al., 2013, p. 179). The duality of symbolism (the social meaning ascribed to the LMS) and material functionalism (perceptions of what the LMS could accomplish) convened to inform emergent

HR discourse structuring the desired usage of the platform and the introduction of extensive training opportunities.

Furthermore, through the lens of positioning theory, the emergent moral order entrenched tacit rules, or 'a set of habits and prescriptions' (Van Langenhove, 2017, p. 4) in the overarching storyline of mandatory Blackboard utilisation. Undergirding this was the sentiment that knowledge, skills and the deployment of Blackboard were markers of professional status and responsible lecturers would make good use of the LMS (Selwyn, et al., 2017; Teräs et al., 2022). This yielded a governing pre-positioning suggestive of how lecturers may enact their professional selves (Hultin & Introna, 2018), perhaps as *malleable Blackboard apprentices*.

5.2.2 A critical workspace

As a landmarked technology in the turbulent pandemic times, the LMS gained salience not only as a gateway to the virtual classroom, but also as a critical workspace to stabilise remote administrative activities (e.g., virtual meetings, grading) in which lecturers would ostensibly mediate ongoing relationships with the institution, learners and colleagues (Brady & O'Reilly, 2020). The materiality of Blackboard tools became accented as they were summoned for action as a means of technology-in-practice (Faraj & Azad, 2013; Leonardi, 2017). This was as described by the SM: '*We've seen a 100%, maybe 200% change. It's massive because before COVID started, we had faculty who never actually opened up the Blackboard course except to manually input grades in the Grade Centre*.' As Blackboard was utilised for a broad range of practices, lecturers compliantly explored its designed-in affordances (Benbunan-Fich, 2019), which are characterised as signals to the user as to what the platform can do (Leonardi, 2011), shown in Table 5.1. This led to the varied use cases outlined below, in which designed-in affordances were employed in diverse manners and socio-materially enacted, or actualised and brought into being (Pozzi et al.,

2014). Not all use cases were integral to the findings, but they are presented here for clarity and to demonstrate the range.

Use case	**Designed-in affordance examples** (Benbunan-Fich, 2019; Norman, 1999)	**Examples of tools used**
Communicating	Send direct bulk emails Create announcements	Send Email Announcements
Collaborating	Allow students to share ideas Create a permanent record Add grades and comments Form groups within sections	Discussion boards Blogs Wikis Groups
Convening	Add files, share applications, use virtual whiteboard Utilise chat and breakout groups Synchronous teaching, academic advising and office hours	Virtual classroom
Monitoring and grading	Identify disengaged or struggling learners Check progress Complete grading Manage gradebook	Gradebook Rubrics Retention centre
Storing	Create folders and course items Copy entire course from one semester to another Embed digital textbook and media (e.g. videos, images.) Create menus, headings, sub-dividers	Content Collection Content Folder Item File Landing page
Professional learning	Collaborate with faculty learners Reflect Track progress Access materials	Discussion boards My Progress Exit Quiz
Facilitating teaching and learning	Provide learning experiences Embed interactive activities with LTIs	Bookwidgets Softchalk Nearpod
Assessing	Create, edit and host coursework and exams Check for plagiarism Prohibit Internet access Embed and access rubrics	Tests Assignments Lockdown Browser Safe Assign Rubrics

Table 5.1. The LMS use cases at the research site.

5.3 Course configurations

However, at the research site, not all lecturers were positioned to enact the designed-in affordances as displayed above. The extent of autonomy granted to lecturers was dependent upon the division they were employed in, with a tripartite system of course configuration in place at the institution.

Firstly, in a Type A single course, the lecturer had access to pre-loaded content, but was free to add, edit and amend both content and course design. In the second instantiation, Type B, the lecturer could share the course with one or more colleagues (e.g., they share teaching responsibilities for the same section of students) and collaborate to make any alterations. The final course type, which was a recent adaptation, is referred to as cross-listed or Type C and was highly restrictive. In this format, the course space was shared by all faculty and students on a particular course, and administration was centralised, bestowed in the hands of the CTL: a faculty member who retained all privileges in terms of changes to the course shell. Individual lecturers were forbidden from modifying anything in the course pages, with the exception of creating Smart Views (filters to view certain columns) in the Grade Centre for their particular cohort and managing the corresponding gradebook.

Table 5.2. below, illustrates the three course types and the corresponding individual and shared affordances, following the categorisation set forth by Leonardi (2013, p. 752). In his original typology, a third type known as *collective affordances* was also advanced[20]. This category did not arise in the present study. However, this has been supplemented with a new theoretical category entitled ***obstructed affordances***. As noted by Pozzi et al. (2014), affordances can also restrict actors in their performance of occupational tasks, highlighting

[20] Collective affordances are salient in highly specialised work forms when there is the absence of task interdependence (Leonardi, 2013).

the ‘double nature’ of affordances when they are configured with differing levels of human agency. ***Obstructed affordances*** emerged from the power imbalance imbued in cross-listed course design specific to the research site and are distinct from constraints, since they were perceived by certain actors as ‘potentials for action’ (Van Slyke & Belanger, 2020, p. 5) despite their exclusion from leveraging them.

Course types		
Type A: Single course, administrated by a single lecturer	**Type B: Single course, administrated by multiple lecturers**	**Type C: Cross-listed course, multiple lecturers, administered by CTL**
Pre-loaded content Single section Complete autonomy and ability to edit, upload, hide materials and enact designed-in affordances e.g., business, education	Pre-loaded content Single section Shared privileges and ability to edit, upload, hide materials and enact designed-in affordances e.g., computer information science, English language	Pre-loaded content Multiple sections No privileges (except grading duties) Central control by CTL e.g., general education, mathematics
Types of affordances		
Individual LMS affordances	**Shared LMS affordances**	**Obstructed LMS affordances**
Affordances particular to one individual who can exploit the features in the manner aligned with their own proclivities	Affordances that are shared. This may include varying tool use that is necessary for completing administrative and pedagogical tasks, yet when aggregated, achieve the common goal of course delivery	Affordances that are functionally and technically available to all enrolled lecturers (e.g., they could, in theory, physically make changes) but in practice are enacted by one selected member of the group due to regulations

Table 5.2. Course types and their corresponding affordances.

Note. From the lecturer perspective.

5.3.1 Rationale for cross-listed courses

We started the cross-listed courses for consistency and quality control to ensure that the same material, assessments and overall experience is delivered to our students. Also, it is easy for pushing updates, so if there is a change in the material, they only change it in that one course, and it shows to everyone. (SSL)

The support staff explained that the cross-listed format facilitated the ease of updating materials and communicating those changes efficiently. As described here and in consonance with the findings of Tannehill et al. (2017), strict standardisation protocols were designed to ensure a consistently high-quality learner experience, albeit at the expense of faculty freedom and discretion in materials selection. This highlights how as the institutional leaders' visions and agenda changed, especially with regards to consistency and auditing, 'they commissioned modifications of the technology to support their new ways of working' (Leonardi & Barley, 2008, p. 167). Thus, leaders worked from the existing LMS infrastructure to a version which produced a desired future state of control (Pickering, 1995). Through the imbrication of the leadership's agency in rule setting, and the material properties of the LMS - the capacity for enrolment of multiple sections of students and lecturers in a master shell, the affordances of management and control could be initiated (Leonardi, 2012b). Moreover, this revealed a double mangle as management intended to refashion course privileges to alter the actions of lecturers, in an act of marshalling (Jones, 1998), whereby 'both material and human agency [were] mutually and emergently transformed' (Martini et al., 2013, p. 200). The lecturers' agency to enact the full features of Blackboard was denied, and the material agency of the LMS to participate and materialise power dynamics was activated.

Moreover, this served to reshape the rights and duties of lecturers working in cross-listed courses (e.g., to disallow their activation of the materiality of the LMS and the enactment of its features) within the local moral order of the

college (Rochette et al., 2020). The CTL[21] retained exclusive power in enacting the affordances that might otherwise be available to individual faculty members in the Blackboard master shell (e.g., releasing assessments, adding content, unhiding and hiding resources), rendering these affordances obstructed from the lecturer perspective, in this emergent moral order '*not to change anything*' (CTL).

The CTL explained how close management of the master shell was calculated to prevent lecturers from '*potentially going rogue'* and making any unauthorised changes. The authoritative position granted to the CTL served to regulate academic practice, as evidenced in the data: '*The CTL is in charge and the lecturer just has to follow the rules'* (SM) and '*I would like to remind all working under a CTL not to change anything on Blackboard'* (internal email). As the CTL was permitted to act in ways that others could not, they were positioned to exert human and material agency over the workgroup (Leonardi, 2013). This revealed how 'affordances are not exclusively properties of people or of artifacts—they are constituted in relationships between people and the materiality of the things with which they come in contact' (Leonardi, 2013, p.152).

In summary, with type C or cross-listed courses, lecturers were unable to harness the full material capabilities of the LMS, and in turn, certain affordances were untenable. In other words, the material *properties* of the LMS did not change from one user to another, yet the available affordances were made atypical dependent on the class of user (Leonardi, 2017). This had implications for the lecturers' self-image, as will be discussed in storyline 2.

[21] Interestingly, the CTLs of cross-listed courses are selected by deans on a rolling basis of two years and do not receive any additional renumeration (SM & CTL).

5.4 Overview of the storylines

Table 5.3. below displays the nuanced storylines and sub-storylines which developed as the landmarked LMS was weaved into the ‘normative fabric’ (Johnson et al., 2011, p. 1341) of the lecturers’ everyday occupational experiences. Additionally, some new terms derived from the analysis are presented. In the following chapters, key excerpts from the interviews, visual elicitations and observations are deployed to build up a narrative account grounded in the relevant socio-material, positioning theory and identity literature with a discussion of each sub-storyline following its exposition.

Storyline **Overarching theme and description**	**Sub-storylines**	**Indicative discursive and materially mediated subject positions interpreted from the data**	**New terms derived from the analysis**
Storyline 1: The LMS as a pervasive force Blackboard permeates through the organisational fabric to intervene in the lecturers' personal lives and embed opportunities for the managerial monitoring of lecturers.	Connecting across time and space	Compliant acceptor Obsessive workaholic Responsive administrator	Administrative noise Digital entrapment
	Manifesting the watchful eye	Dispossessed creator Tracked amateur Insignificant player Target of judgement	Performative legacy
Storyline 2: The LMS as a conduit of self-image Blackboard and its contents are linked to the projection of the lecturers' self-image and the learners' perceptions of their credibility and professionalism.	Projecting the desired self	Autonomous purveyor Caring owner Humanised curator	Socio-material self-rendering
	Navigating obstructed affordances	Perceived ambassador Inferior educator Voice of reason Carrier of anxiety Apologist	Inherited disorder Self-presentation by proxy
Storyline 3: The LMS as a digital interference Lecturers are enrolled to equip learners with LMS skills. Blackboard (and related imbricated material elements) present barriers and constraints which hinder practice.	Prioritising training	Proactive agent Reluctant technical sage Empathetic guide	Unyielding intermediary
	Immobilising practices	Expelled social actor Incapacitated instructor Incompetent Disruptive Other	Materialised stalling

Table 5.3. Overview of the findings.

Chapter 6: Storyline 1: The LMS as a pervasive force

6.1 Introduction

Against the backdrop of the pandemic's influence on the uptake of LMS utilisation and increased PD interventions, the LMS presented itself as a pervasive force. This was markedly highlighted in faculty's unfettered access to Blackboard outside of working hours and its enrolment in monitoring activities.

6.2 Connecting across time and space

6.2.1 Tacit expectations

Whilst on one hand the LMS is advocated for providing lecturers with greater flexibility in their practice, its digital ubiquity may 'allow work to follow the educator, whenever and wherever they are' (Drumm, 2020, p. 29) exerting an intruding force on faculty's personal time and space (e.g., Barley et al., 2011; Danver, 2016; Oliver, 2015). Indeed, for the lecturers, CTL and PCs in this study, their constant enmeshing with the pervasively available LMS caused it to be frequently utilised at home (extending post lockdown) in the evenings and on weekends, creating a sense of being 'technologically tethered' to the LMS through their work laptops, smart phones and home computers (Murray & Rostis, 2007, p. 250). Whilst no explicit discourse required lecturers to access Blackboard outside of working hours, this was a common practice. It appeared that the post-pandemic context and the institution may have implicitly 'increased [faculty's] obligation to be continually responsive' to learners (Orlikowski, 2007, p. 1444), and in turn, embedded expectations of uncompensated labour[22]:

[22] Lecturers are required to remain on campus for a minimum number of hours per week, managed through digital fingerprint check-in and check-out.

N*owadays it's just expected that you're working extra at home. It might be a by-product of coming out of lockdown and people just got used to it. It's basically unpaid overtime, I guess. The students are always the priority, and if that means helping them with something on Blackboard during the weekend, you just kind of do it.* (Lecturer G)

6.2.2 Continually responsive

This created a pre-positioning of lecturers characterised by a constant enmeshing in practices supporting learners and upholding the unspoken requirement, tacit in the institutional culture, to be continually responsive:

Sometimes I work when I'm finished with work and that work involves Blackboard. I try not to do it, but I might have to mark a quiz, or I might have to add a link that we're going to need in the morning. I end up doing it because that's what's expected I guess, and I don't want to make a mistake that impacts the students. (Lecturer I)

Albeit underscored by some reticence, for Lecturer I, the pressure to get work done appeared to enable a relational positioning aligned with institutional demands. This was articulated in two forms, the fear of falling behind in work tasks and the anxiety of letting down students, which were both closely linked to the LMS' asynchronous availability (Barley et al., 2011). Here, a dilemma arose between the intention to resist accessing Blackboard to preserve their social time, juxtaposed with the concern that everything may not be ready for their learners. Whilst the LMS pervaded home life, this was accommodated and justified to the self. Accordingly, Lecturer I performed a **compliant acceptor position**, framed by the assumption that it was tacitly a part of their occupational role.

Everything bleeds into your home life now in the digital age, you can't get away from it unless you're very mindful of turning things off and not opening up

Blackboard outside of work hours. I try to be mindful, especially on the weekends to not do what I need to do, but yesterday, for example, I got home at six and I continued working until eight o'clock using Blackboard. As we do encourage faculty to use the mobile app, lecturers will get notifications and it does encroach on their social life. (SM)

The SM acknowledged that across the institution, faculty and non-faculty members were universally subject to the realities of the digital age, and the omnipresence of Blackboard was an inescapable reality. The interweaving of the moral order to be responsive and individual tendencies of lecturers in their preferred enactment of the LMS enmeshed with the mobility of devices, the LMS app and push notifications to invade social space. Reflecting on this digital work life, the SM alluded to the team's encouragement of lecturers to imbricate the BB apps (also revealed in the document review), which, by virtue of the aural and visual materiality of notifications, would pre-position the lecturers as compelled to act, unless they asserted their human agency to disengage with these alerts. I will term this phenomenon as ***administrative noise***, which may be characterised not only by the figurative notifications of alarms, but also metaphorically, as an implicit responsibility following the educator home, '*I need to make sure everything is organised in Blackboard over the weekend, ready for Monday morning'* (Lecturer A).

For others, including Lecturer F, the LMS was accommodated outside work hours with more willingness and purposefulness:

I really don't mind using it at home. It's useful when I might have made a mistake with an assignment and I could have put the wrong due date or the wrong time, and then it will close before it should. Then I will go back in outside of work hours and reopen it because that was my mistake. Also, if there's something really pressing that the students need to know before the next day, I send them an email through the LMS at night. (Lecturer F)

In the preceding fragment, the affordances of constant connectivity and editability were salient in rectifying human errors and forgetfulness in a timely manner despite Blackboard's encroachment on personal routines. Editability enables the lecturer to manage how their professionalism is perceived and improve the quality of information communicated to students (Treem & Leonardi, 2013). Thus, quite surprisingly, for Lecturer F this resulted in a positively reinforced subject position, highlighting how the mangle of practice is anything but predictable (Pickering, 1995). Lecturer F accommodated the LMS' omnipresence to get tasks done to enact and position the self as the **responsive administrator**.

Similarly, PCA approached the LMS with their intention to get ahead with their work. In the mangle of practice, the heavy workload was accommodated in PCA's willingness to access the LMS and to permit it to disrupt work-life balance. Human intention to meet increased administrative demands and the affordances of the LMS (accessibility, communication) came together to produce a socio-material administrative practice (Symon & Whiting, 2019) in which PCA could ideationally position themselves as a **responsive administrator** who accomplishes multiple tasks: '*the semester start has been busy. I've been getting up at four am to go on Blackboard, to prep lessons, organise materials or communicate with students. If I didn't have the LMS at home, I wouldn't be this proactive.'* For PCA, the LMS has intervened to disrupt the temporality of their work engagement. On one hand, the LMS affords PCA agency to self-organise and retain some control over their work completion, perhaps giving rise to satisfying sentiments of accomplishment and traction (Selwyn et al., 2017). Yet a corollary of this is that the LMS also exercises control over *the participant*, as the imbrication between PCA and Blackboard in the social domain of the home may become so sedimented in routines that this behaviour is normalised and unquestioned (Symon & Pritchard, 2015).

6.2.3 Obsessive behaviours

The constant availability of Blackboard led some lecturers to obsessively engage with the LMS to conform to institutional norms and sentiments of occupational responsibility, reminiscent of Orlikowski (2007)'s taken for granted, persistent use of mobile technologies, for example '*I'll often go on at home just to check if someone hasn't submitted their work, or if they have made a mistake uploading it and I'll email them or post an announcement; I might be a bit neurotic about it' (*Lecturer B). For these lecturers, the routinised checking of the LMS may be performed as a type of pathological identity positioning (Symon & Pritchard, 2015): **the obsessive workaholic** who can't switch off from the LMS, perhaps partly due to their tenuous employment security in the occupational context.

For Lecturer C, the digital reach of the LMS was both unavoidable and imperative to getting work done and suggests what I will term ***digital entrapment***, whereby there appears no option but to work through the LMS in one's downtime. Adapting to the reality of being constantly connected invoked a relational and differentiated positioning of the less desirable Other who displays professional inertia and a lack of commitment: '*I don't see how anyone could not use it off campus. There's so much to do, inputting grades, marking, eCAF*[23]*. So, if you're not doing that, you'll probably be behind in your work, or you just don't care.'* This is reminiscent of Symon & Pritchard's (2015) Other of identity work; the uncontactable, unreliable worker. In discursively and performatively dissociating oneself from this alter-identity (Symon & Pritchard, 2015), obsessive engagement with the LMS outside of work symbolises

[23] A set of folders uploaded by faculty to an institutional database which is used for internal and external auditing (Al Serhan & Houjeir, 2020).

responsibility and reinforces one's own sense of professionalism, even at the expense of ***digital entrapment***.

[observation] I find myself constantly checking things on Blackboard when I should be relaxing. I might start checking the next day's lesson content when I get home. Maybe I need to double check I did the attendance. Maybe I look at the Grade Centre and see all those damn exclamation marks. Or if I get 6 emails at night I gotta go on six times and keep checking things. (Lecturer D)

Meanwhile, for Lecturer D, the material presence of their work laptop at home afforded the opportunity to respond to temporarily forgotten tasks. The laptop, LMS and lecturer imbrication perform a socio-material responsibility, although this results in the lecturer adopting a somewhat circumspect positioning to being constantly connected, denoted by the discursive framing of '*I should be relaxing'*. This is indicative of the 'autonomy paradox' in which greater digital access to the LMS for the completion of tasks may seemingly grant increased autonomy to the lecturers, but at the same time it may engender rising sentiments of commitment (Mazmanian et al., 2013).

Calling attention to specific LMS material properties, both Lecturer D and Lecturer B (in their screencast) cited the iconographic exclamation marks in Blackboard's Grade Centre, which can be considered a further instantiation of metaphorical ***administrative noise***. Outside the digital realm, analogue/paper-based marking would have offered a sense of detachment, easily permitting one to summon a break from pending tasks, yet the digital platform symbolises work and makes it known, unforgettable and unavoidable. Paper-based work is easy to neglect and postpone since its materiality can be hidden away from the lecturer's gaze, perhaps tucked away in a folder, or left in the office. On the other hand, the LMS' digital presence on devices fluidly traverses space and time. The LMS becomes a container of student work and a make-shift, portable office space. When a lecturer 'steps' into this office in their downtime, perhaps with the intention to conduct a 'simple' check of a student's mark, this task is

likely to become convoluted and extended through the LMS' symbolisation of other outstanding work, which cannot simply be tucked away, forgotten or unseen. Symbols elicited a type of a material call to action as ungraded work is made visible, tacitly positioning the lecturer's work as unfinished through its communicative force. The Grade Centre extended beyond a carrier of meaning (Roehl, 2012), with its symbols and colour coding materially configuring and conjuring its presence as an enforcer of administrative duties. The visualisations are permeated with normative ideas about completed (graded and coloured) and uncompleted work (exclamation marks) (Decuypere et al., 2021). The crafting of the Grade Centre, as shown in Figure 6.1, thus presented a particular sort of reality in the micro-storyline of unfinished work, transposing the occupational responsibility of the lecturer, which was often accommodated outside of working hours. This indicates how the socio-material effect of the lecturer's commitment, together with the Grade Centre's means of ordering the lecturer to act, produced the **obsessive workaholic** subject position.

Figure 6.1. Screenshot of a typical Grade Centre at the research site.

Note. Names removed.

However, the Grade Centre also produced tensions in the lecturers' work. During a virtual go along (see Appendix D and Figure 6.2 below), and in some accounts, lecturers would remark on the 'heaviness' of the interface as it spreads across spatial boundaries that not only complicate the work of the lecturer in their grading tasks, but also extend tasks through time as scrolling

across columns is the only means of viewing all information contained there. This was witnessed as the lecturer would physically and repetitively traverse their mouse across the screen with every individual grading task. It appeared that this further heightened the anxiety of the obsessive workaholic for the LMS acts as a pervasive, yet stubborn partner, delaying their work and demanding their accommodation as the Grade Centre always seem to excel in the dances of agency emergent in the grading process.

Figure 6.2. Photograph captured by participant.

Note. Names removed.

The sub-storylines expanded on above demonstrate the realignment of lecturers' work as the blurring of home/work boundaries (Selwyn et al., 2017) often involved the perceived obligation to be constantly vigilant towards pending, or possibly arising, tasks. These duties were made ever more visual, pressing and compelling by the pervasive LMS.

6.2.4 Discussion

As suggested by Gourlay (2021), the tension inherent in digital engagement during one's personal time raises interesting implications for how the divide between personal and professional selves may be eroded, and how professional identities are negotiated resultant to these new realities. The findings here provide some tentative answers. Furthermore, this sub-storyline extends on the work of Symon & Pritchard (2015) who found that workers achieved the social-material positioning of being reliable, involved and committed through the constant mangle of cell phones and human agency. Here, the mangle of practice involves an interweaving of LMS, devices, and lecturers to produce the overarching sub-storyline of anytime, anywhere connection to manifest the subject positions described above.

In this mangle of constant connectivity, lecturers' decisions regarding their self-enactment of the LMS involved reimagining the boundary between work and social time. As resistance was largely deemed inappropriate, the lecturers permitted tasks (including grading, emailing, setting announcements and creating assessments) to transition across this porous boundary. They purposefully engaged with Blackboard outside of its conventional use within the campus and were subject to the power relations undergirding its promotion, including the HR policies set forth in the preceding chapter.

When LMS software imbricates with devices to become omnipresent in one's working environment *and* their personal time, it can be thought of as an emblematic case of 'obstinate presence' that artefacts invoke due to their materiality, context of use and localised norms (Datchary & Licoppe, 2007, p. 1). Interestingly, the imbrication of devices, Blackboard and lecturer may give rise to a Janus-faced paradox (Arnold, 2003). The affordance of constant connection to Blackboard produces a socio-material condition which both liberates and vulnerates lectures' professional selves. The LMS is permitted to follow the educator home as it makes work portable and allies with the lecturers

in the completion of outstanding work. For some lecturers, the LMS was a welcomed accommodation to digital errors and ongoing tasks (Symon & Pritchard, 2015).

On the other hand, reluctance and reticence might accompany the utilisation of the LMS at home. Lecturers accessing Blackboard in their down time may experience socio-personal disruptions, work overload (Brady & O'Reilly, 2020) and even display compulsive behaviours. Thus, while lecturers may feel more in control of their professional lives by accessing the LMS anytime, anywhere, they may also submit to a controlling engagement with it. Their administrative practices are enacted across difference spaces and tethered to devices, to substantially interrupt personal lives and may transform their relations with the institution. The free labour awarded to the college may consist of prosaic activities, such as a quick check here and there, and initially might not 'feel, look, or smell like labour' (Scholz, 2013, p. 2), yet accumulating over time they domesticate lecturer professional identities as *good work* may be framed as work *impossible to avoid* during one's downtime (Selwyn et al., 2017).

In this sub-storyline, the gratuitous mode of working was subject to a process of moralisation and rationalisation (Oliver, 2015) as duties were tacitly reshaped by the student-centric ethos, which was in turn facilitated by the LMS. The implicit assumption pervading many accounts was that its evasion would result in compromising student-faculty relationships and perhaps even lecturer standing in the organisation. Some lecturers felt obligated to remain connected through Blackboard when they perceived it as a collective norm, or accordant with the expectations of college leaders (Mazmanian, 2012; Leonardi & Treem, 2013). They may also engage in comparative discursive behaviour, to assess their own relative 'commitment' to the organisation and students: one who does not follow this organisational norm may be positioned as the Other, displaying professional inertia.

Moreover, while those tasks conducted through the LMS outside the campus may at first glance appear voluntary (Martínez Guillem & Briziarelli, 2020), perhaps this elides the important role the LMS plays in this imbrication. The ideological, social processes involved in developing Blackboard are reproduced through its material agency to pervasively transcend time and location and embed emergent cultural norms of workspace and time (Symon & Pritchard, 2015), while reminding, compelling, interrupting and even entrapping its users. Moreover, through its communication affordances, while it may facilitate greater interaction between lecturers and students, it also channels ***administrative noise*** which looms over the lecturer, nudging them to act through its material calls to action (Golden & Geisler, 2007). The next sub-storyline illuminates further evidence of the LMS' omnipresence as it performs lecturer visibility.

6.3 Manifesting the watchful eye

The capacity for the LMS to collect, aggregate and record data has been heralded as one of its most valuable affordances and a prime impetus for its increasing indispensability to HE institutions (Swerzenski, 2021). This sub-storyline describes how the LMS' affordance for monitoring work may have significant implications for lecturer positioning, both in terms of concrete examples of the watchful eye, and in more ambiguous circumstances, the 'anticipatory qualities' (Selwyn et al., 2021, p. 77) of data simply being available *somewhere*.

6.3.1 Property

As an external platform, data ownership policies are predominantly informed by the host institution (Kabata, 2022) and enforced through the intellectual property (IP) policy of the college, as '*any production or origination of IP during employment results in the college becoming the owner of that IP'* (*institutional document*). Lecturer produced content assets (Musa et al., 2016) captured in the form of raw audio and video data during online classes and oral exams

were automatically appropriated by the college via Blackboard. Indeed, upon every log in to the site, lecturers were required to demonstrate their accommodation of such appropriation in a one-way contractual agreement (Amo et al., 2020; Kabata, 2022). This constitutes a forced pre-positioning of lecturers which they are unable to reject, as they liberate ownership of the productions of each pedagogical encounter when using the virtual classroom.

I hereby grant permission to the [college] video and audio recordings of me to be captured for educational purposes. I accept that the recordings will be preserved in [college's] digital archiving system indefinitely as a record and may be used for educational purposes such as research, training and development, collaborative learning and quality assurance. (Source withheld)

This is indicative of a socio-material regulation, in which exogenous rules are socially constructed by the leadership of the college, materialised through text and delegated to the LMS to record and store content (de Vaujany et al., 2013). The LMS renders the assets of video and audio recordings incorporeal and subverts the spatial metaphor on which property used to reside, as it is substituted with digital traces rendered visible to the organisation (Bencherki & Bourgoin, 2019).

Of course, I know where the recordings are stored in Blackboard. What I don't know is who looks at them or why or how long they're stored. If it was just audio, it would bother me less, but when my image is recorded on video, I am more uncomfortable with it. (Lecturer H)

These socio-material productions, created through human performances and digital recording exist in an uncertain sphere for an indeterminate duration, leaving an etherealised ***performative legacy*** of the lecturers. For Lecturer H, the ambiguity surrounding their performance and image being available to others is unsettling and leaves them discomfited. Lecturer users are relationally positioned as **dispossessed creators** who concede agency to the platform and

the structural conditions that prevail upon them, which renders them vulnerable to the gaze, and possible critique, of an unspecified group of third-party Others (McInnes & Corlett, 2012). Whilst there has been long-standing debate in HE regarding the intellectual property rights of lecturers, before digitalising work through the LMS lecturers could retain some agency, such as by withholding documents or slides, even if this contravened the institutional policy: *'all materials and creative works produced by faculty shall remain the property of the college'* (institutional document). Yet, now, the material agency of cameras and microphones neutralises this agency and countermovement, potentially turning the lecture into a messy, digital artefact which could be referenced later, with any misunderstanding of the lecturer's intention potentially bearing penalties (MacKay, 2019).

6.3.2 Surveillance

Furthermore, beyond recordings, lecturers were exposed to emergent modes of synchronous performance management (Castañeda & Selwyn, 2018). For the PCs, the virtual classroom ensured that online teaching could be managed from a distance. Hierarchical relationships between the lecturers and their superiors and the human intent to monitor could be imbricated with, and materialised through, the virtual classroom tool, as it was utilised to evaluate lecturer behaviour in online classes. Entering the virtual space was deemed analogous to entering a physical setting to confirm the lecturers' presence and performance. PCB would sometimes use this as an avenue for vertical, top-down monitoring (Page, 2016), as this fragment reveals:

It provides a good way of verifying what's going on when we have the online classes. It is the same as maybe walking in the classroom and seeing if they're there and doing what they should be doing. (PCB)

However, perhaps unsurprisingly, the lecturers largely objected to this practice and resented the notion of being 'checked-up on' while citing this form of

monitoring as ‘rude’ (Lecturer B) ‘invasive’ (Lecturer F) and ‘unnecessary’ (Lecturer E). This demonstrated how the virtual classroom is not a walled-in or private space as one might anticipate, but rather its spatial boundaries dissipate as visitors enter at will. Within this unbounded arrangement, the capturing of the material agency of cameras and video to follow the lecturer permitted spontaneous monitoring which aligned with the managers’ goals, as it undermined the lecturers’ desired performative positioning as autonomous and responsible, casting them as exposed and vulnerable. As the virtual classroom performed lecturer visibility in this way, it invoked sentiments of resentment, and beyond this, raised concern regarding how visibility was being leveraged through ‘backdoor surveillance’ (Broyles, 2022, p. 30), also by those *not* in a position of supervisory power. One lecturer recalled an episode in which the impromptu and uninvited entrance by a colleague, unjustifiably positioned them as subversive, and **a target of judgement:**

I was doing online lessons when a co-teacher just popped up, watching me. I am not a fan of that at all. If someone wants to observe me, they ask in advance and I send a link. But someone was being a busy body and I thought what was that about? You can create recurring sessions in Blackboard, but I don’t do that: I keep the course room unlocked so I don’t absent mindedly click on the wrong session link. This person reported me to my programme chair who confronted me because there were no links there! All I had been doing – because I don’t like clutter anywhere – was keeping it clean. (Lecturer D)

As the preceding excerpt highlights, materiality can further be captured by *peers* who partake in ‘horizontal’ monitoring (Page, 2017, p. 5), characterised as surveillance conducted by those who have no hierarchical power over the Other, but nevertheless may reposition the observee in a disparaging, almost vindictive manner. Lecturer D’s intentional positioning as a tidy worker was misaligned with the organisational routine of creating recurrent virtual sessions - they elected instead to exploit the affordance of establishing an open space for learner admission. Sensing the tacit positioning by a colleague, Lecturer D was

cast as disingenuously exploiting the move on online teaching to evade their occupational duties. The Other cited the absence of links to the virtual classroom as a dereliction of duty which is contested by Lecturer D, as they claim a victimhood position (Garcia & Hardy, 2007).

Figure 6.3. Screenshot of recurring sessions in the LMS' virtual classroom

Note. Names removed. This screenshot shows completed sessions, but the layout and listing for planned sessions is consistent with this.

Figure 6.3. above, shared by a participant following an observation, might appear muted and insignificant. However, through a socio-material lens, we may appreciate the nuanced connection between these minute instantiations of material 'evidence' and the role such associations can have in disrupting relationships and perceptions of lecturer professionalism. The LMS participates in surveillance practices as it captures, makes known and reports on the extent of the social actor's task planning and, perhaps, forethought (creating sessions in advance). Quite distinct from the analogue teaching world, lecturers arguably would not nor could not be held to account (weeks) in advance that they *plan to attend* their lectures. Such intent would be implied, private, immaterial and likely unquestioned by others and the institution. However, this human intent is now materially configured and catalogued by the LMS' static grey chamber, which substitutes the subconscious thoughts of the embodied, professional lecturer with enduring textual records associated with a newly designated *digital* subject, open to judgement.

Thus, a notable observation drawn from this sub-theme is how Blackboard's materiality produces pervasive surveillance capabilities with discrete, temporal dimensions to reshape social relations: not only in a retrospective (classes taught and recorded) and in-the-moment frame (classes ongoing now), but also in a prospective manner (planned classes). The digital instantiations of times, days and numbers of recurring sessions (and recordings of online sessions) embed new occupational norms and moral orders about acceptable practice, while establishing an emergent mangle of agencies in which both the embodied, dominant human *watcher* and the digitally produced and subordinate *watched* are implicated.

6.3.3 Data

Beyond the virtual classroom tool as a vehicle to monitor lecturers, other instances of what Leonardi and Treem (2020, p. 1601) have coined as 'behavioural visibility' were salient. This construct relates to how indirectly, users' activity is rendered socio-material as it emerges through the interaction of lecturers, observers, platforms and devices to reveal their digital enactment patterns (Leonard & Treem, 2020).

For lecturers utilising Blackboard, there is no opt-out or means to avoid their activity being rendered visible as it retains digital footprints of lecturer (and student) activity (Broyles, 2022; Leonardi & Treem, 2020). This was confirmed by the SSL, since '*When you use Blackboard, everything is kept recorded for any auditing purposes, later on, or for any quality checks. Team leaders, deans and specialists will check how Blackboard is being used by lecturers and check their courses.'* Thus, Blackboard's affordances of data production and storage allied with managerial control to track lecturer presence and activity in the form of quantifiable data, perhaps presumed to be indicative of productivity and professional commitment. This was facilitated through the statistical tracking features embedded in the LMS, with data being ascended to senior management and external auditors, which revealed a complex, layered

imbrication of power relations and the materiality of Blackboard data in its capacity to frame lecturer identities (Symon & Pritchard, 2015). The Grade Centre was also a site of close surveillance as '*there is a reporting of the grades book to the Assessment Unit; they track the automatic grades produced by Blackboard and check if they've been changed'* (SM). The LMS is the producer of sound assessment data, any interference by lecturers is suspicious, and any anomalies in the gradebook are immediately flagged for further investigation. As stated by Grimaldi & Ball (2021, p. 126), 'the platform represents its data and … constructs [it] as authoritative, trustworthy and expert – irrefutable' and renders any acts of lecturer discretion alarming.

The LMS can be used as a way of checking up on me. It's covert. Its untrustworthy. I understand the rationale behind it, but it doesn't sit that well with me. I don't want to be followed and hounded about what I do in my course or how often I log on. That's not treating me like the professional that I am. (Lecturer I)

Lecturer I, while to a degree, understanding of the rationale for digital monitoring, was disturbed by the possibility for secretive course inspections which could be used for nefarious purposes, resulting in the **tracked amateur** position. The culture of surveillance where auditors and leaders are positioned to probe into lecturers' work is antithetical to the notion of trust and renders any traces of it obsolete (Page, 2016). Indeed, for this lecturer and several others, the perceived lack of trust was difficult to reconcile with, and could invalidate, the ideational positioning of the experienced professional when imbricated with audit trails. Within these trails, lecturer activity could be tracked (Leonardi & Treem, 2020) as Blackboard's production of charts and graphs displaying dates and times of user hits across its various functionalities were imbricated with the agency of observers. As shown in Figure 6.2. below, Blackboard's production of data furnished PCs, specialists and managers with insight into lecturer frequency of access. This was confirmed by PCA who stated that '*although the user activity is designed more for students, it is useful for determining which*

lecturers are more active, especially during the grading periods when we have a two-week turnaround, and the pressure is on.'

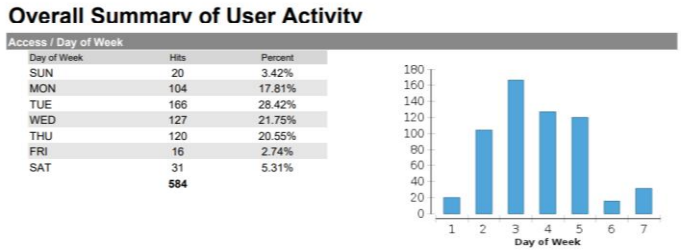

Figure 6.4. Graphic displaying summary of lecturer activity on Blackboard.

The college's accumulation of information produced a 'latent trove of data' (Jones, 2019, p. 2) associated with practices conducted through the LMS (grading activity, resources uploaded, communication with learners etc.). This was accessed by quality assurance professionals in the institution (SM) and the accrediting bodies who '*request access to review what's happening in the Blackboard courses'* (SSE). The potential to be audited caused some lecturers to sense their repositioning by leaders as **insignificant players** in the organisation ('a cog in the wheel'), which could displace their previous alignment to a robust professional self:

The nature of having everything digital is that the information is there for certain people to see, including auditors. It does make you feel more like a cog in the wheel than an established and experienced teacher. Not everything can be reduced to numbers. The LMS is not going to tell my manager or an auditor how good my rapport is with students. (Lecturer D)

Lecturer D's concern highlights how the leveraging of analytical and statistical data may undermine the importance of the humanistic aspects of being a lecturer, namely affective relationships their learners, and how these may be occluded by a reliance on LMS tracking (Broyles, 2022; Leonardi & Treem, 2020). This raises the question of the potentially reductive effects of data, in

which intricate, yet unquantifiable social and human relations are impossible to measure and may be replaced by cold, impersonal numbers.

For some, the reasoning behind surveillance was more of a concern than the monitoring in and of itself. When monitoring was conducted for the improvement of educational practices, this was upheld as steadfastly auspicious. Conversely, there was concern that it could be conducted for more deleterious reasons, again undermining the professional agency of lecturers. This finding reinforced the notion that data are materially affective (Harrison et al., 2020) when configured with the agency of leaders to potentially recast lecturer subject positions:

If it's to promote better teachers and a better environment for the students to learn, then I think it's great. If it's designed to catch me out and show that I am doing something wrong in my job without allowing me to justify myself, then it's malicious. So, it's not just the data that's collected, it's about the people who are sifting through the data and what they're doing with it. (Lecturer G)

For Lecturer G, there was an evident struggle. The individual self-knowing and wisdom of the lecturer may be usurped by anxiety engendered by the enmeshing of the socio-material: superiors enmeshed with data, producing an oppositional positioning as a **target of judgement.** The indirect observation of digital behaviour opens up the possibility for misconstrued inferences by managers and auditors, which may in turn lead those stakeholders to attend to lecturers in punitive ways that accord with their assumptions.

We have to go through these exercises on Nearpod[24]*, which is embedded in the LMS, and we get a report, and that report is sent to the CTL. Then, that information is shared with the Dean of [department], so they want to ensure that*

[24] An LTI (as explained in 2.3.5.2.2) for slide-based lessons.

everyone is using it, even if you have a better way of teaching the content. (Lecturer H)

As practice-oriented rules define desired pedagogical practices related to Nearpod artefacts, reports are a materialisation and manifestation of the socio-material reach of the LMS in displaying those who do or do not conform (de Vaujany et al., 2013). This creates a forced positioning of Lecturer H as a **tracked amateur,** untrusted with their own pedagogical choices**.** This form of micro-level control may violate a lecturer's sense of self-efficacy as they are subject to prescribed instructional practices which displace their autonomy. Self-efficacy is integral to positive identity positioning, and barriers to establishing this personal conviction in instructional choice and competence inhibit ideational positioning (Spilková, 2011). This is redolent of the 'uncritical standardization of digital pedagogy' (Broyles, 2022, p. 29) as through the imbrication of the LMS, normative best practices associated with prescribed tools and metrics are adopted to constrain practice regardless of individual teaching preferences or styles. While this may be disputed discursively, the monitored lecturer's subverted agency and the presence of reported data threatens any divergence.

6.3.4 Discussion

The culture of surveillance has developed unrelentingly, infiltrating and pervading modernity (Manolev et al., 2018) and undoubtedly, the expectation to be seen and tracked in the digital age is an incontrovertible reality (Leonardi & Treem, 2020). HE is no exception, and the social actors in this context have been said to be progressively disaggregated into measurable parts to be judged and assessed (Harrison et al., 2020). Studies in this field commonly probe the macro, political level of datafication (Jarke & Breiter, 2019), or take a critical stance towards how *learners* are constructed as subjects mirrored in their aggregated data double (e.g., Grimaldi & Ball, 2021), while others reveal how educators are socio-materially 'configured as data users' (Ratner et al., 2018, p.

22). While it has been established that educational practices are illuminating how LMS data *about* the lecturer may impact one's professional self, distinctive examples are largely absent in the domain (Williamson et al., 2020). Thus, these findings may bridge a gap by providing more nuanced forms of datafication and its situated ramifications.

In this sub-storyline, Blackboard's capacity to ally with management control and observation of lecturers was an indicative aspect of its pervasive force (Treem & Leonardi, 2013). The lecturers navigated challenging issues of performance management, visibility and data gathering as their behaviour was 'enacted through and by the socio-material practices that produce representations that can be observed by various actors' (Leonardi & Treem, 2020, p. 1605). While Boyd (2016, p. 171) has posited when education is LMS based, it produces 'an all-encompassing environment managing and controlling access to information … redefining individual identities,' the findings here suggest a wider remit of the LMS' agency. It not only manages and controls information, but also produces and aggregates data and recording to contribute to the socio-material configuration of monitoring (Leonardi & Treem, 2020). In terms of redefinition, the subject positions interpreted demonstrate how lecturer positioning was largely constrained and characterised by professional insecurity due to the unilateral nature of visibility. The interests of leaders and auditors were inscribed into, and enacted through, the LMS as a political vehicle (Introna & Wood, 2002) which set up a field of surveillance. Within this field, Blackboard's affordance for monitoring could be captured by auditors and the leadership for the regulation of lecturer conduct, but this in turn constrained lecturer agency, inhibited trust and reduced self-efficacy. The transference of lecturers' performances into video artefacts renders them open to the gaze of others which induces a sense of fragility to their professional identities and leaves a trail of ***performative legacy*** behind them. Extending temporally across both the present and into the future, backdoor and horizontal surveillance by any users with access may be enrolled in the LMS' capacity to expose and frame lecturer

behaviour as subversive, resulting in vulnerability, anxiety and contested subject positioning. This may also be extended through the secretive nature of monitoring whereby through the inferences of others, inimical repercussions may be enforced. The materiality of data reports and audit trails may detract from the humanised character of education, repositioning lecturers as untrusted as the LMS emerges as the irrefutable expert. Furthermore, when the standardisation of LMS digital pedagogy detracts from a lecturers' sense of self-efficacy and professional autonomy, or questionable, covert inspections are conducted, this also has the capacity to disrupt ideational positioning.

In addition to its pervasive force discussed in this storyline, the LMS was also found to be a significant conduit of self-image. This will be illustrated in the next chapter.

Chapter 7: Storyline 2: The LMS as a conduit of self-image

7.1 Introduction

This storyline illustrates how the course shells, materials and arrangements could be linked to deeply personal instantiations of the lecturers' professional selves. In cross-listed, or Type C courses (as described in 5.3), other-managed course pages and authored artefacts were often sites of frustration and sometimes embarrassment, yet any affordances to rectify perceived errors were obstructed, leading the lecturers to navigate disorder. Before explicating on this sub-storyline, it is pertinent to juxtapose how lecturers working in Course types A (and to some extent, B) could exercise agency to project the desired self to others.

7.2 Projecting the desired self

7.2.1 Customisation and ownership

In course types A and B, lecturers could capture individual and shared affordances to transition away from default settings, customise their own courses and embed self-authored materials. These affordances permitted them to utilise the materiality of Blackboard as a conduit of a positive, professional self-image and enabled empowering identity work which was recounted in the interviews and witnessed during the virtual 'go alongs[25]', as lecturers would proudly exhibit their Blackboard courses.

[showing screen] *For me personally, when I have my own course, I have a lot of freedom to really go in and share exactly what I want. All of these features that*

[25] For a fuller account of this virtual 'go along' please see Appendix E.

you see on the side here, I can go in and hide anything, I can add materials and delete what I don't need or want to use. (Lecturer B)

As Lecturer B and others explained, with Type A courses full control of menu options permitted them to circumvent and substitute pre-loaded materials which misaligned with their teaching philosophy or personal preference. In this excerpt, the lecturer repeatedly and intentionally positioned themselves as agentic and active, interpreted here as an **autonomous purveyor** of course materials. Furthermore, Blackboard afforded lecturers the capability to select colours, font types, add a personal photo, contact card, banner image and a landing page, for example. This could also be combined with changing the 'teaching style' in which a template fitting to the nature of the course could be adopted.

I can really make it my own – there are different ways to lay out the course depending on my preference or what I am teaching. I can include my own contact card, a picture of myself and any other information I want to use to orient the students to the course and to make it more inviting to them. It can show that you care about how you present the course. (Lecturer C)

It's much better to 'own' the space as yours, if you know what I mean. Even when you share with one other person you can both agree how you want to organise and display stuff. (Lecturer A)

As presented in the above two excerpts, being autonomous and owning the virtual arena are ideational positionings which highlight how the participants can craft their own space. This supports the recommendations of Steadman (2020) who suggested that the customisation of Blackboard shells can embed a unique pedagogical culture and convey to learners that the lecturer cares about establishing a personalised context and is therefore professionally invested in their duties. Visual aesthetics, course arrangements and targeted information can imbue a welcoming and effective learner experience (Steadman, 2020). As

displayed in Figure 7.1, below (also see Appendix E), lecturers may capture the affordances of uploading and displaying images to personalise their courses, overcoming the confines of the impersonal grey shell. The materiality of images – colours, content and cultural references - perform a certain kind of reality to student observers and in the digital domain they may supplement the physical, embodied, presence of the lecturer, while still conjuring a remembering of the lecturer's identity, pedagogy and personality.

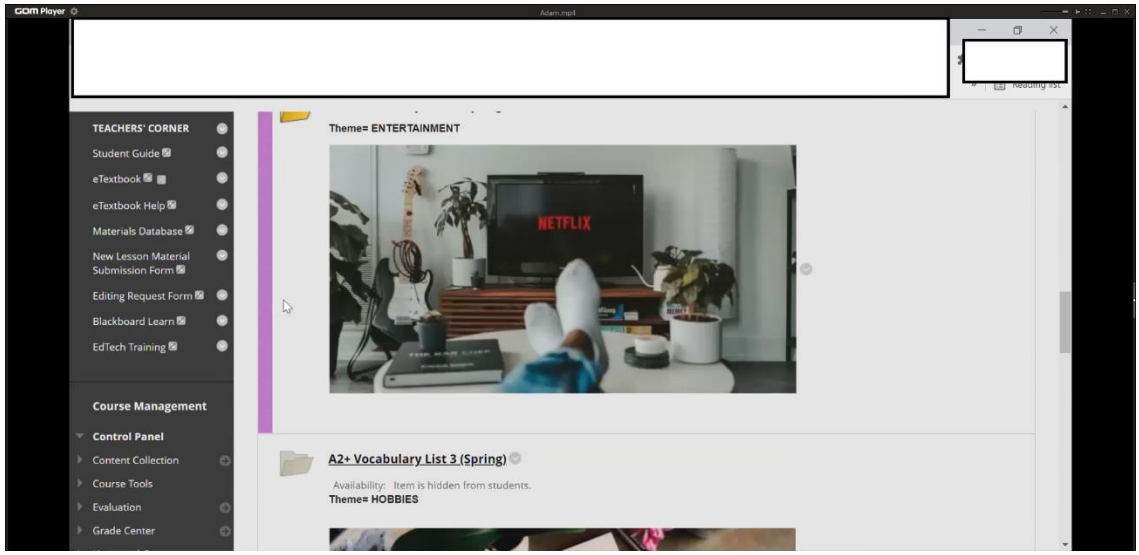

Figure 7.1. Screenshot from lecturer-produced screencast.

Moreover, customisation may permit lecturers to demonstrate individuality and professional identities, such as the **caring owner** of courses, as described above (Johnston, 2011). Rather than a depersonalised, homogeneous framing of the lecturer through master shells, the individual and shared affordances permit lecturers to design courses in a manner aligned with their communicative dispositions and awareness of learner needs.

My writing style and the way I communicate to students through the LMS is important; I can grade language appropriately, keep instructions brief and consistent throughout the course. (Lecturer G)

Freedom to make linguistic choices permits the lecturer to establish a personalised discourse with learners, which has been cited as a means of developing robust identity positioning (Alsup, 2008). Lecturer discourse embedded in the LMS wields its own power over the narrative around how learners should engage with their Blackboard courses (Treem & Leonardi, 2013).

7.2.2 Humanising courses

Similarly, personalised teaching materials could be imbricated with Blackboard's materiality as a conduit to help build an ideational positioning of the **humanised curator**, as demonstrated during an observation of Lecturer E uploading and organising content:

When you have complete autonomy, you can show yourself to your students. For me, using authentic materials is really important, like these here. I want my students to have access to articles or readings that are reflective of real life. What's more, I can make full use of asynchronous activities like discussion boards in Blackboard. I guess you could say that I can blend my philosophy and style in with the LMS. (Lecturer E)

As found by Steel (2009) affective values and teaching philosophies may be imbricated with the course design and attributes to create 'an educationally robust learning experience' (p. 415). This may occur when lecturers are granted identities laden with the epistemological security in being able to further their visions through the materiality of language, instructions and coherent learning design. Moreover, selecting authentic artefacts to extend the professional self-image enables lecturers to 'blend real life with reality' (Steel, 2009, p. 407).

I think that my personal folder on Blackboard reflects me as a teacher very well. That's because [sharing screen] these PowerPoints from the classes are the ones that I make, and I cater them to my students. So, they can see what we've

been doing, and they can see a little piece of me as a teacher, as a person. I think my identity as a teacher is whatever I do, and whatever is presented to other people says a lot about me. Making the course the way I want to be not only indirectly affects my students' evaluations, but also is a representation of me to anyone who might look at my course. (Lecturer B)

As Lecturer B stated, the individual affordances (Table 5.2) of uploading and displaying content in Blackboard permit the user to display '*a little piece of me'*. Through the intention to expose oneself to others, lecturers can gradually build up a story through materiality, including folders and slides, to craft their identities. This phenomenon is characterised here as ***socio-material self-rendering***, in which the social intention to project the professional self in ways accordant with one's own desires are materially achieved through the lecturer's manipulation of the LMS and its affordances for personalisation and humanisation. This could extend to reinforce professional identity as through the observations of students, faculty evaluations could be more favourable, and institutional observers could glean a positive, professional impression of the course curator. Through Pickering's (1995) lens, we can find that lecturers accommodate the affordances of the LMS and enact them to produce meaningful self-presentations and engage their learners (Symon & Whiting, 2019).

7.2.3 Discussion

None of the participants commented on the restrictive dimensions of design within Blackboard (as discussed in section 2.3.4.2.1.) or referred to content development and curation as being onerous (Salaka & Chigona, 2019). While other studies have suggested that academics might restrict access to personalised materials for intellectual property reasons, e.g., by using secure PDFs instead of PowerPoints and hold concern that the LMS may dilute their professional identities, (e.g., Brady & O'Reilly, 2020; Geertshuis & Liu, 2020)

the findings here demonstrate something quite distinct: LMS' affordances can be, and are desired to be, captured for empowering identity work.

Social psychologists have long maintained that a chief aspect of identities is the public essence of self-presentation (Kelly & Rodriguez, 2006), and educators, like all social actors, are constantly negotiating who they are and how they want to be seen. At the institution, a means of projecting a desired persona is through thoughtful curation of the LMS space, for as lecturers are cognisant of their learner audience, they naturally feel accountable to that audience and seek to present themselves in favourable ways (Kelly & Rodriguez, 2006; (Meskill, 2013). However, it is worth noting that this projection of self-image is largely the preserve of the lecturer, since as Blackboard reproduces the top-down form of communication between lecturer, it affords its students only minimal representations of self-display (Thornton, 2013).

In consonance with Paring et al.'s (2017) study, in which a whiteboard's material properties enabled greater visibility of individual tasks and project completion to enable the performativity of consultant identity attributes, agency over Blackboard's material properties and functions contribute to the performativity of robust subject positions. However, the mere existence of LMS features, such as a teaching style or contact card, are much less significant that what they afford the lecturer the opportunity to do when mobilised in practice (Treem & Leonardi, 2013). The intent to self-present is achieved through the imbrication of the materiality of images, artefacts and text (Symon & Pritchard, 2015) and the capacity to curate, display and personalise. These come together to create a socio-material practice, which may lead to a positive and reinforced ***socio-material self-rendering*****.** Lecturers may be well positioned to project their personality through artefacts to show a little piece of themselves, take time to craft a bespoke space inviting to their students, or exercise agency to circumvent unwanted materials and supplement them.

Text especially permits lecturers to amplify their self-presentation, create a social affinity with their learners, perhaps by framing themselves as approachable and using a register to denote audience awareness and consistent discursive interactions. This shares some commonality with the affordances provided by social media which may be leveraged to render visible desired occupational behaviour and permit individuals to be tactical in presenting themselves to others (Treem & Leonardi, 2013). Just like those using social media, perhaps lecturers can be positioned to strategically build credibility and a personalised, professional reputation to their learners, utilising the LMS as a conduit of self-image (Marabelli & Page, 2018). The socio-material environment may be established with an accustomed familiarity between the lecturer and the LMS, demonstrating how technologies may be experienced not only as objects of constraint and limitation, but also within a comforting reality. Individual and shared affordances thus might be understood beyond what one can do with Blackboard, but also who one can be, and project themselves as, when utilising it (Paring et al., 2017). Conversely, as these identity presentations are highly situated and embedded in individual routines, when affordances are obstructed, quite distinct and contradictory subject positions are invoked, as will be discussed next.

7.3 Navigating obstructed affordances

7.3.1 Course shells

As described in 5.3, Type C courses may be thought of as the result of a new layering of social and material agencies (Leonardi 2013). The institutional discourse of standardisation conveyed the social intention to change lecturer duties, rights and practices and was enmeshed with an emergent LMS configuration (Decuypere & Simons, 2014). As lecturers were denied privileges and rules were imbricated with Blackboard, this gave rise to ***obstructed affordances***. When the pre-packaged course design was incongruous with the

lecturers' pedagogical beliefs, they were forced to navigate what will be termed here as ***inherited disorder*** arising from the existing content of the Type C shell. Despite the transfer of control from individual lecturers to the CTL, students were customarily oblivious to the lack of agency endowed to individual faculty members. As the **perceived ambassador** of a course, exposed on the frontier of pedagogical practice, this appeared to signify an 'ontological identity tension' (Howard, 2021b, p. 667).

And even though I've told them they don't believe that I am not in charge of the course. I'm the face in the classroom, I'm on the front line and they can't help but attach me to it. They don't even know what a CTL is. What you know when you're a student is that's my teacher, and this is my LMS, and he's the one throwing this stuff at me. So, I'm a bad teacher in their eyes. (Lecturer E)

Thus, for Lecturer E, the notion that students may attribute poor course presentation to *them*, perhaps perceiving the lecturer as under-invested in their work, or through the lens of positioning theory, as repudiating duties (Harré, 2012). This results in a tacit, self-positioning (Harré & Van Langenhove, 1999) as an **inferior educator** since their gatekeeping responsibilities to select and present appropriate content are denied. The materiality of course shells (text and multiple documents for example) and the lecturers' forced utilisation of them threaten their professional identities.

7.3.1.1 Text

Text in Blackboard is stored and accessed digitally, and digital text is a salient and tangible aspect of the teaching and learning experience. Socio-materially, the way in which digital text was shaped by other social actors, and the material conditions under which it was encountered by learners had implications for lecturer positioning. Beyond the digital screen, the materiality of text in Blackboard produces consequences for the social activity of learning. For example, when the volume of text was perceived as excessive and the font

selections misguided, the lecturers questioned their pedagogical self-image through the eyes of their learners, as the following excerpt demonstrates:

[showing screen] It looks like someone has replicated the course and just copy pasted, more than once, or maybe they think multiple colours is some kind of design. But anyhow, what you get then is a really messy interface which is confusing and unprofessional and doesn't belong in a higher education institution. We need to remember who students are – they are not children, and we also need to remember some of them have special needs and this kind of text can be problematic. (Lecturer F)

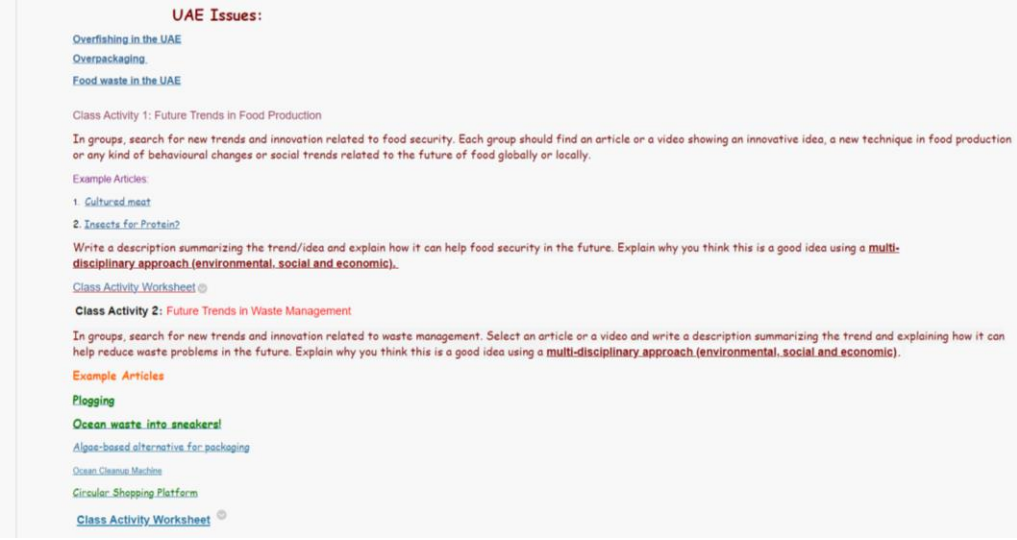

Figure 7.2. Screenshot 1 of a course with multiple font variations.

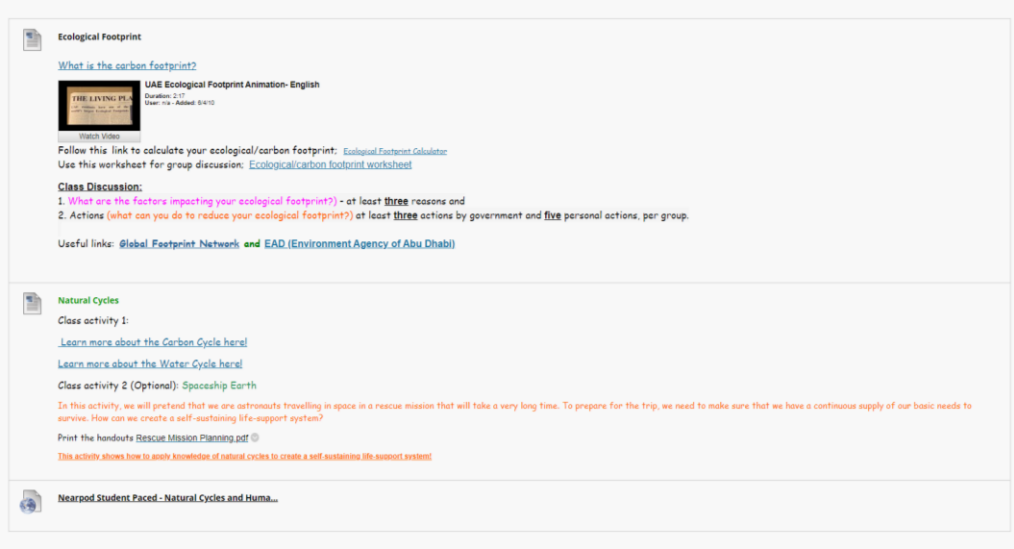

Figure 7.3. Screenshot 2 of a course with multiple font variations.

In terms of text, two salient issues are raised and illustrated in Figure 7.1. and 7.2. The potential inaccessibility issues that may arise for learners with visual impairments, for example, as the textual layout may discourage or even refuse access to those users and prevent social inclusivity (Davis, 2020; Steel, 2009). Secondly, how the digital representations of colours and text could infantilise learners and inscribe identity positions to them (Howard, 2022), which could, in turn, impact the lecturers' own framing of their professional status. This suggests that *anticipated positioning of the self by others* could be powerful as it invokes a positioning of accountability, the **voice of reason,** in *'we need to remember who the students are' and 'this doesn't belong in a higher education institution'.* This may be thought of as an attempt to signal the incommensurability between the course shell's aesthetics and the target learner group, which, through a socio-material agency (accomplished by the CTL and the materiality of the course presentation), setup a particular communication pattern. Fonts, colours and text organisation might be said to enact the virtual space in a manner irreconcilable with the lecturers' beliefs, according with the notion that educators' positioning activity is greatly influenced by their thoughts and values (Kayi-Aydar & Miller, 2018). While ostensibly, this is just lines of text, when mobilised through human intent, it is argued here that it actually

manifests something beyond the digital interface as a socio-material ‘textual agent’ (Ashcraft et al., 2009, p. 36). As a relatively stable agent, enduring until deleted, it mobilises an agentic force created by human actors (Davies & Riach, 2018), which is then fluidly transported across space through the Blackboard pages. The materiality of the platform’s digital reach simultaneously connects with multiple learner cohorts during their access to the platform, and this is sustained over time as it seeks to guide them through specific learning trajectories (Cooren, 2004). From the student reader’s perspective, while authorship is invisible, it may be unconsciously ascribed to the lecturer.

7.3.1.2 Overloaded shells

Figure 7.4. Screenshot of an ‘overloaded’ course page.

Similarly, the abundance of files embedded in a single course page, as shown in the eleven files in Fig 7.3. above, was perceived as constraining learner understanding when divorced from the classroom context in the flipped class mode. As advanced by Gourlay (2021), in online and flipped models, the balance of communication is skewed away from the embodied lecturer as pre-prepared text and files dominate the learning discourse. Lecturers were concerned about learners being distressed by excessive documents with

minimal explanation, similar to what has been described by Steel (2009) as ‘too many bells and whistles’ which may include ‘links and no guidance’ (p. 415).

The sheer volume of files is so overwhelming! I know that students can't and won't read it all. I am not there to animate it for them when they study at home, so there's no storytelling, there’s no teacher presence to guide them. (Lecturer A)

Lecturer A demonstrated a repressed capacity for action in which the materiality of overloaded course shells acted to subvert their pedagogical intentions to increase student knowledge and further learning objectives in the flipped class model. The burdensome content and the linguistic proficiency of students combined with the disorder identified above appeared to impede this process. Since the flipped model is rooted in principles of heutagogy, demanding learner autonomy, the lecturers were concerned about the effects of the ***inherited disorder*** on their learners’ academic progress. Thus, as a conduit of the flipped model, the LMS transports information and files in a flat, transmissive pattern, devoid of any fluid or interactive meaning (Carey, 1988). While Blackboard is perhaps promoted as driving learners’ digital, independent epistemic practices (Gourlay, 2021), it may also be configured to espouse a narrative of learning which is incompatible with the asynchronous arena.

This resulted in tension: Lecturer A struggled to accommodate this disorder with the tacit ideational positioning of the storyteller, yet this was complicated by the obstructed affordance of editing, resulting in the **carrier of anxiety.** Moreover, this imposed positioning, brought about by the practice of cross-listing violates the lecturers’ duty to organise the course shell in accordance with their expertise (Kayi-Aydar, 2021). This constrained human agency evoked sentiments of dissonance, apprehension and concern for learner engagement.

I wouldn’t open all that if I was taking an online course and I’m a native speaker. I think that's where a lot of CTLs get stuck in the world of face to face

classes, they forget how walls of files or links do not translate well and aren't conducive to learning. (SM)

The SM even concurred that asynchronous course design principles were being neglected by CTLs, citing their inability to divorce traditional teaching practices from the virtual space. The specialists also alluded to how excessive textual objects obstruct learning.

It scares them if they see everything all at once and I understand that anxiety. Instead of just hiding stuff it's lumping them with a huge pile of stuff instead of seeing stuff that is gradually revealed. It's a bit like boiling a frog. You know you pour the water on the frog, and it jumps out. But throw the frog into cold water and let it heat up gently and it will stay in there nicely. (Lecturer G)

On the other hand, for Lecturer G, anxiety arose due to the inability to capture the affordances of the hide content option embedded in the LMS. Applying an interesting metaphor, Lecturer G discursively distanced themselves from the course arrangements which unfairly burdened learners. It was interesting in this study how the visibility settings (hide/unhide) became a central concern for many lecturers. The hide feature endows the CTL with the ability to simply click twice to hide unnecessary content or tools, which may direct and streamline the learning process for students (Chawdhry et al., 2011). However, for lecturers this ***obstructed affordance*** disallowed the disorder to be rectified with artefacts and text territorialising the LMS pages. While in Thompson's (2012, p. 106) sociomaterial study, the *delete button* became 'one of the arbiters of digital inclusion and exclusion,' in online teaching, the *hide feature* on the LMS performed as an arbiter between inclusion as a CTL gatekeeper and exclusion as a lecturer from course arrangement practices. This in turn was acknowledged as a challenge for learners and a further source of stress for the **carrier of anxiety** position.

In several accounts the lecturers' expertise appeared to be illegitimated, confounded by the view that disordered course shells were poorly created, organised and intimidating. This had implications for their own self-presentation of identity as they questioned how the imbrication of the LMS as a conduit of self-image may not only constrain student learning, but also influence learner perceptions (and their anticipated tacit positioning) of lecturers. This may be thought of as a situation of **self-presentation by proxy,** whereby the CTL is endowed with the power and authority to create a space whose materiality will be unconsciously attributed to the lecturer 'user'. Moreover, when lecturers are merely executing a course created and managed by others, design becomes a means of control: the potential for unity between discourse, design and enactment diminishes and there is no longer space for lecturers to incorporate their own accent (van Leeuwen & Kress, 2001).

7.3.2 Other-authored materials

Along with the aesthetic issues related to the course shell presentation elaborated on above, a further corollary of cross-listing standardisation was pre-set course materials (developed in house) situated in the LMS space, which limited the autonomy faculty previously exercised in materials development, selection and production. While preloaded master courses offer the affordance of efficiency in the bundling of content and curriculum so that it may be recycled multiple times across numerable sections and semesters (Cheng, 2015), for the lecturers in this study, there were often moments of frustration brought about by the effects of using other-created artefacts as they produced a second form of ***self-presentation by proxy*****.**

Instructional materials, as non-human entities, partially enacted the process of fashioning the lecturers' practice (Bolldén, 2015) and served to mediate positioning acts as material representations were unaligned with the lecturers' ideational positioning. The digital artefacts (e.g., course materials and exam texts) could circulate across time and space through Blackboard, remaining

immutable and unchanged (Decuypere & Simons, 2014), by virtue of the institutional moral order not to adapt, upload or hide materials. This evoked tension, since *'faculty may have fundamental disagreements with the content that's in the course or the activities or the way they're designed'* (PCB), and this was supported by most lecturers interviewed. For instance, through the LMS' material instantiation as a repository of artefacts, Others' agency was enacted through the force of incorrect language to create tensions. The lecturers discursively distanced themselves from the PowerPoint slides, underpinned by sentiments of '*it wasn't me'.* For Lecturer G, LMS materials, imbued with the agency of their creator, could invoke emotional responses, undermining an ideational self-efficacious positioning, to cast the self as **an embarrassed presenter:**

I feel quite proud as a teacher, and I am not proud when I throw out something embarrassing and I have to work my way through it. So, if it's something that I'm not proud of, all I can do is make a point of highlighting that I didn't make that particular activity, but I must give it to them anyway. (Lecturer G)

The notion that the presence of imposed materials constrained desired instructional routines was salient in the lecturers' accounts. In the digital realm, lecturers expected a greater degree of interactivity in the activities that they extended to their learners. When presented with the flat design of activities, such as simple Word documents, this undermined their desired pedagogical approach and triggered another instance of relational positioning, in which several lecturers distanced themselves from the Other – the educator accepting of mundane and ineffective material design. However, as found by Johri (2011), some lecturers simply utilised the resources at hand to the best of their ability, attempting to fuse a performance with the artefact to enliven the content, even though they lamented its quality. As recounted here: *The Word documents in each week's folder on the LMS are flat and uninspiring; they could be so much better if they were presented in a more interactive format. All I can do is try to bring it to life with my personality during the lecture* (Lecturer D).

7.3.2.1 Learning Tool Operability

As discussed in Chapter 2, Blackboard may be viewed as a 'digital broker' (Decuypere et al., 2021, p. 6) which affords the imbrication of additional digital artefacts, in the form of external tools and third-party resources through Learning Tools Interoperability (LTI) without the need to navigate away from the LMS (Magnuson, 2019; Zhang et al., 2022). Figure 7.4. displays LTIs commonly embedded in Blackboard courses at the research site (e.g., Bookwidgets, Kahoot!) which through LTI, are accessed through a seamless one-click connection by lecturers and students (Zhang et al., 2022).

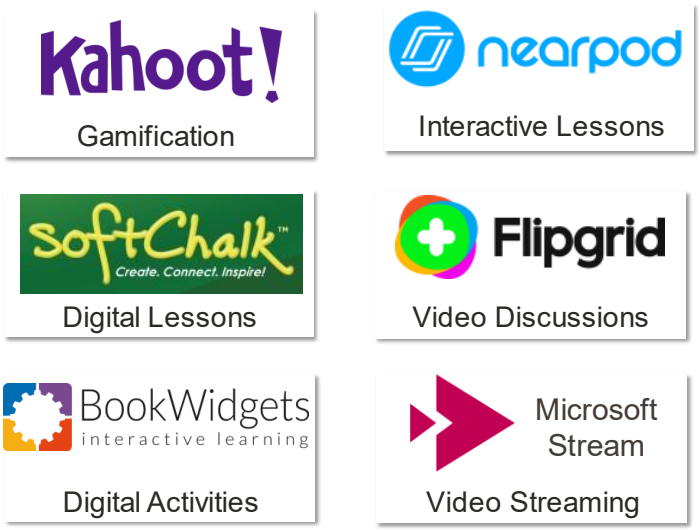

Figure 7.5. Examples of LTIs available to configure with the LMS.

Operability here takes on a dual meaning and unearthed what will be termed here as a *paradox of operability*. Through commercial licensing, the SM and specialists champion the desirability and usability of LTIs as offering innovative benefits for students and lecturers. However, the actors specifically endowed with the agency to leverage third-party resources, may be the very same who elect not to. Thus, paradoxically, these potential affordances for learning are made unilaterally unavailable by the CTL, therefore rendering them inoperable to lecturers in Type C courses. Secondly, this paradox is further complicated as

(non-CTL) lecturers are also subject to extensive training interventions, but knowledge attained from those courses was rendered unusable in the Type C courses: *With cross-listed courses you're not allowed to do anything and it's ironic because the things I am getting training on and learning, like Softchalk and BookWidgets, I can't actually use! It seems counterproductive from an organisational and personal perspective* (Lecturer A). Moreover, it appeared that LTIs may be eschewed in favour of more simplistic artefacts, perhaps due to time constraints, excessive administrative demands, or the technical skill level of the CTL (CTL/SM).

Lecturers were compelled to establish subject positions as malleable Blackboard apprentices (as described in Chapter 5), competent in a comprehensive range of LMS functionalities to draw alignment with institutional directives. However, this positioning was subsequently and ironically denied once enrolled into Type C courses, leaving their recent upskilling unimplementable.

When the capturing of the affordances of LTI technologies to enable an additional layer of materiality to be configured in the imbrication of people and Blackboard *did occur*, lecturer intentions could still be subverted when this configuration resulted in poor quality artefacts. For some participants, intentional performative positioning was deemed essential when the arrangement of digital artefacts' form and content was irreconcilable with their professional self-image, as Lecturer B reported. This resulted in the **apologist** position**:**

I apologize sometimes and I highlight in subtle ways that I didn't write this material. We are made to use these Bookwidgets and Nearpods but they aren't even correct. I try to distance myself from them, while using them, if that makes sense. (Lecturer B)

Thus, the provided teaching materials appeared to wield some agency in the research context, by shaping thoughts and stirring emotions (Guerrettaz et al., 2021). This supports the notion that the self-esteem aspect of professional identity may be conflicted if a lecturer perceives artefacts as constraining their agency and threatening their didactic performance (Howard, 2022).

If lecturers attempted to circumvent the ***obstructed affordances*** of pre-loaded materials in the course shell, they were confronted with onerous procedures (e.g., creation and management of instructor-created materials) combined with an increased workload to navigate around the LMS and distribute materials (e.g., through a OneDrive shared space). Yet this form of 'creative insubordination,' (Lopes & D'Ambosio, 2016, p. 1088) would occur. In the mangle of materials and practice, the lecturers thus reasserted their own agency to engage in procedures justified to the self and better aligned with their professional identities to achieve a 'pragmatic victory' (Symon & Whiting, 2019, p. 671) while resisting the ***obstructed affordances*** they encountered.

7.3.3 Discussion

The performativity of Blackboard in cross-listed courses was shaped by the contingent ways in which it was configured by a significant Other, the CTL (through the college's mandate), and utilised in practice. Digital text and files arranged into particular forms often gave rise to ***inherited disorder****.* The material properties of course shells, endure across time and space, and embed communication patterns between lecturer and student (Leonardi, 2013). Social issues inherent in this sub-storyline related to the lecturers' beliefs, agency and perceptions, while material aspects are the instantiations of the Other: their digital arrangement and authorship of texts and files (Blåsjö et al., 2021). The challenges lecturers encountered when navigating cross-listed course shells was advanced as the materiality of digital text, excessive file links and the hide content feature were imbricated in the lecturers' self-presentation to yield several interesting subject positions.

Although text is selected by humans, when imbricated with the LMS, as a socio-material phenomenon, text appears to do something to its human counterparts. Digital text forms appear to act 'as active agents which influence and contribute to meaning-making' (Gourlay & Oliver, 2018, p. 82) when they position learners and, as a consequence, frame the lecturer in a manner incompatible with one's professional self through a process identified here as ***self-presentation by proxy***. This occurs as the lecturer is implicitly and enforcedly re-representing and performing the image of another: lecturers are positioned to reluctantly navigate and endorse the disorder, while CTLs are constructed as deciding, selecting and cementing these material instantiations of *their* professional identities. Discharged of any gatekeeping power and as an incumbent of course design which is incompatible with pedagogical beliefs, ***inherited disorder*** is complicit in the relational positioning of the lecturer. While abstracted from the world of IT professionals, we can find some commonality with the socio-material study of Stein et al. (2013). Those researchers identified how the autonomous management of artefacts would lead to robust professional identities when the gatekeeper self was granted with agency to control what data is available to others, to witness a system growing and flourishing. Conversely, at the research site, this gatekeeper role was denied in cross-listed courses, and the sheer volume and 'messiness' of texts and files in course shells was a recurrent sub-text which arose in several interviews. In terms of LMS practice, the gatekeeper role also implies the ability to engage as a course designer, who writes instructions, manages the layout and organises files. Whilst viewing lecturers as designers does not amount to something radically new, the way this metaphor was operationalised was so narrowly confined to the CTL in the interests of standardisation. However, rigid standardisation at the expense of faculty (and student) voice might occlude how instructional approaches are realistically translated through Blackboard. A truly effective pedagogical chain (tasks, activities, artefacts, and assessment) perhaps should involve educators agentically acting as designers of their own LMS environment (Aagaard & Lund, 2019; Steel, 2009).

Yet, in the mangle of course management practice, the participants encountered a predicament of low agency and were forced to present textual aesthetics perceived to infantilise learners and excessive files which contradict heutagogical principles, responding with resistance and frustration (Blåsjö et al., 2021). Thus, the course design which emphasises task completion, in a flat transmission model, appears to limit the ways in which lecturers can present their desired identities as multifaceted, effective educators and perhaps renders them de-authored and interchangeable (Steadman, 2020). The lecturer in a cross-listed course is framed as 'the monologic deliverer of authorized content' (Aagaard & Lund, 2019, p. 113) as the affordances of uploading, editing, hiding etc. were obstructed. As lecturers are positioned as the perceived ambassadors of pre-packaged courses, to which they have no influence, their positioning is redolent of what Steadman (2020) found to be course facilitators, but here is presented in a more nuanced manner. The de-skilling here limits their intentions for action, positions them as deliverers in a circumscribed form of presentation, sharply contrasted with the type A and B courses in which the lecturer was in control of design and discursive arrangements. Through positioning theory, the associated rights and duties of an autonomous lecturer (as with course types A and B) are limited, as a consequence, the lecturer appears reluctant to retail centrally produced and standardised course design (van Leeuwen & Kress, 2001, p. 48). Perhaps as Dron (2022, p. 160) explains, 'your LMS is not my LMS and your course is not my course' and therefore, your content is not likely going to be the content with which I can align my professional identity.

Finally, a second form of ***self-presentation by proxy*** occurs through the forced enactment of other-created artefacts. In an attempt to regain a sense of professional standing in the eyes of their learners, the lecturer may feel compelled to apologise and deny authorship of materials. This section contradicts other studies which found that educators display inertia towards exploiting the more dynamic LMS features, such as LTI (e.g., Alokuk 2018; Brady & O'Reilly, 2020), and rather suggests that lecturers might be more

inclined to welcome contemporary and interactive activity design. While termed by Sinclair and Aho (2018, p. 171) as LMS ‘super innovators’, the irony here is that whilst lecturers desire to imbricate their human agency with the materiality of LTIs for example, this imbrication is deemed impossible in their current occupational position. Moreover, the paradox of operability outlined above further extends this irony – those actors granted the agency to exploit the designed-in affordances and third-party resources are the same who choose not to. Importantly, this potentially contributes to the existence of crudely configured LMS courses. The resultant imperfections in how the LMS is leveraged could not only have the power to frustrate and demotivate learners (e.g., Radovan & Makovec, 2022), but could be damaging to overall academic quality, which ironically was the reported rationale for cross-listing in the first instance. The third and final storyline is elaborated on in the next chapter.

Chapter 8: Storyline 3: The LMS as a digital interference

8.1 Introduction

The last storyline is dedicated to the LMS as a digital interference. Firstly, the LMS interferes as lecturers are enrolled to temporarily prioritise Blackboard learner training over teaching. Furthermore, the LMS (and related imbricated material elements) present barriers and constraints which immobilise the lecturers' (and the institution's) practice.

8.2 Prioritising training

8.2.1 The unspoken need

Grimaldi and Ball (2021) expound how the learner dashboards of LMSs are 'configured in a way familiar to internet users. Once logged in, a variety of 'obvious' activities become possible through its interfaces' (p.117). This suggests an intuitive, simple user experience for post-secondary Emirati students who are expected to be digitally conversant and indexed as members of the 'Arab Digital Generation' (Alaleeli & Alnajjar, 2019, p. 164). However, at the research site, new student entrants to the college were perceived and positioned (by most lecturers) as novices in need of substantial training to navigate the LMS; *'it's the digital age, but unfortunately they aren't proficient'* (Lecturer H). While educators commonly presume learners are inherently 'more digitally literate than they are', this can be misleading, with the word 'they' seemingly representing a double referent (Satchwell et al., 2013, p. 50). Learners may be proficient across various modes of social media, for example, yet this does not necessarily translate into digital literacy(-ies) in Blackboard, or other western educational platforms (Eppard et al., 2021; Satchwell et al., 2013). Correspondingly, this was manifested in the unspoken need to perform as an LMS trainer which constituted a significant assumed pre-positioning (Kayi-Aydar & Steadman, 2021). The gap between learners' Blackboard skills

and the recognition of how vital the LMS was to the student trajectory placed the lecturers in a moral landscape whereby fulfilling a perceived duty to promote and encourage student engagement with the LMS was largely accommodated. Lecturers were positioned outside their pedagogical roles, perhaps as ‘change agents,’ (Daouk & Aldalaien, 2019, p. 106) enrolled into the ongoing sedimentation and digital ‘culturation’ of Blackboard in the Emirati learning context (Eppard et al., 2021).

8.2.2 Technical stewarding

To facilitate a successful learning journey, most lecturer participants appeared forced to accept the position of the more technically knowledgeable other, to overcome some students’ neophyte status, in the absence of any other route to Blackboard competence for students (e.g., training delivered by specialists). Thus, the lecturer intention to aid students required activating the LMS’ materiality as a training instrument to accomplish that goal (Leonardi et al., 2012a). For Lecturer E, neglecting the implicit moral obligation to orient learners to Blackboard would position students as disadvantaged and impede their future progress. This indirectly furnished the lecturer with a means to uphold a positioning as a **proactive agent** who decides to accommodate Blackboard in its capacity to steer the socio-material outcome of learner accomplishment in their academic programme (Symon & Whiting, 2019).

The further they go in their degree, the more the students will have to use Blackboard. If I don't introduce it to them right off the bat, they're not going to be prepared in the future. So, there's the incentive to train them, because if I don't, I’m doing my students a disservice, and they will have an even more difficult task in the future. (Lecturer E)

However, for some, communicative relationships with new students appeared to be reduced to technical issues in the first weeks of the semester, as Blackboard consumed their instructional time (Cilliers & Niekerk, 2017). In the

following excerpt, while bemoaning the disruption to their pedagogical repertoire, the lecturer discursively frames themselves as the **reluctant technical sage**, with the college held to account:

When students enter the college, they really don't know how to access or use Blackboard. They don't scroll down to find the right course; they don't look through the folders within each course. I spend a considerable amount of time showing them how to use it. To be honest, I should be using that time for teaching, but it's just unavoidable. As we are expected to do so much through the LMS, the onus of training the students falls on the teachers. There is no provision in the college orientation sessions for Blackboard or any other software training. (Lecturer D)

Lecturer D described how exploring the LMS artefacts (course menu items leading to multiple folders within folders within folders) was imperative in the mangle of the student learning trajectory. This is perhaps indicative of how, in the digital college, the lecturer, at times, may feel compelled to focus on technology over pedagogy to achieve the ideational performances of proactivity and responsibility. Thus, is appeared that initiation to the college became a practice that was, in part, shaped by the Blackboard, as it scaffolded this social activity (Orlikowski, 2006). Interestingly, however, a corollary of this was how the platform distracted from the substantive learning process, as it demanded students master its requirements.

Together with the pathways for accessing Blackboard (entering the Portal, inputting passwords, navigating the LMS site and course menu options), the flipped mode was especially challenging for learners due to the complex routes to exit quizzes. The following vignette depicts an observation of Lecturer I, as they held a face-to-face session at the beginning of a semester:

The lecturer is displaying the Blackboard site on the large monitor in the classroom. Lecturer I enters the Blackboard site and instructs the learners to

follow various steps. From the portal to the Blackboard course page, which contains a list of courses, to the correct course home page, to the Flipped Assessment folders, to the correct quiz entry page. Encouraging the students to follow step by step, some students become disengaged, they miss a step, and the lecturer becomes frustrated. Other students are in the wrong course. Others have accessed the incorrect quiz. The lecturer approaches students to assist them. The lecturer remarks (quietly to the researcher) how they spend so much time 'putting out fires' and how they question whether LMS training should be their job.

In this vignette and through other accounts of stewarding, there was a dance of resistance and accommodation (Pickering, 1995) between the lecturer, artefacts and students in which Blackboard may be conceived of as an ***unyielding intermediary.*** This term encompasses how, as an obdurate arbiter of practice between lecturer and learner, the LMS territorialised the lecture hall through training routines. The human agency of the learners was undermined by the complicated 'vagaries, detours, and even unexpected traffic' (Davis & Hardy, 2003, para 7) they experienced traversing Blackboard. It seemed that the interaction of different infrastructural parts, including the Portal and Blackboard itself, are less problematic when operating alone, yet cause more resistance when combined (Gourlay & Oliver, 2018). The lecturer was challenged by the socio-material effects resulting from the imbrication of the students' thwarted agency and digital pathways involving multiple clicks through multiple folders. The positioning as a **reluctant technical sage** while rhetorically contested, is ultimately accommodated. This is indicative of the recursive calibration of lecturer resistance to subject positions and accommodation of a moral order to assist learners, converging in the mangle of training practice (Pickering, 1995; Symon & Pritchard, 2015).

Blackboard presents 'a potentially infinite number of paths that can be followed' (Grimaldi & Ball, 2021, p. 118) which reflects the considerable training tasks at hand for lecturers. While metaphorically, Blackboard, may be representative of

a traditional classroom modality, practically, it enforces the textual medium of navigation and use (Williams, 2013). It is perhaps positioned to exclude or include learners relative to the culture that it embodies and the students' sense-making of that culture (Payne, 2005). The learners' emergent English language ability and the utilisation of the imported, 'foreign' LMS appeared to be misaligned (Eppard et al., 2021). This triggered some lecturers to adopt the relational position of the **empathetic guide**, juxtaposed with the positioning of learners as linguistic novices, as shown in this example excerpt:

It's a lot. When they look at the course menu and see all the options it's confronting you know. Plus, they can't understand all the options because for many of them, there's still a lot of English to learn, so they need a lot of guidance. (Lecturer B)

Furthermore, in the following example, the specific material contours of Blackboard's assignment submission box (a multitude of symbols and options), as shown in Figure 8.1., were salient for Lecturer I in their positioning, also characterised as an **empathetic guide**:

[showing screen] *I had to show some students how to upload their assignment. It's difficult for them because there are several clicks required and if they do it wrong it's a nightmare and I have to mark that version. But if we look at this from someone who is new, it is quite confusing. They either type in the comments box instead of the submission box, and they can't figure out how to upload a file without guidance. Also, they, and probably a lot of lecturers, have no idea what all the symbols mean.* (Lecturer C)

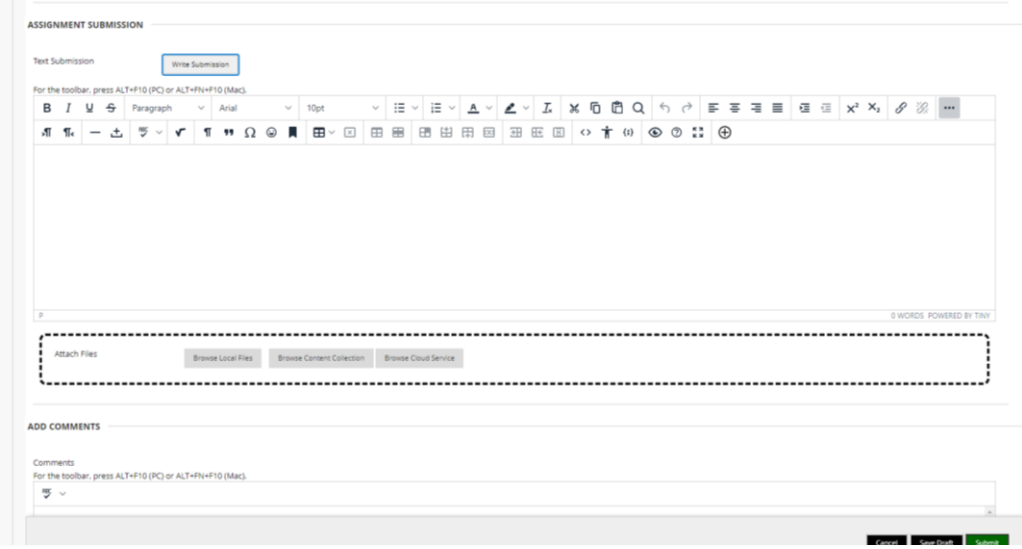

Figure 8.1. Screenshot of the assignment submission box.

In this excerpt, the marrying of the students' potential to 'encounter dead ends and dark alleys' (David & Hardy, 2003, para 7) and the Blackboard space produces a socio-material constraint. This constraint is borne out of the material obduracy encountered by students which hinders their intention to carry out a simple objective to submit work (Leonardi, 2017). Thus, the lecturer is enrolled to steward and mediate the transition of agency to the LMS interface (Payne, 2005) as the ***unyielding intermediary*** appears to discipline its user's behaviour when an assignment is incorrectly completed. The lecturer is required to provide a frame to remedy any behaviour incongruous with its defined use and textuality, as the familiar (emailing or physically handing in an assignment, for example) is reproduced as unfamiliar in the LMS (Bayne, 2010). Moreover, this is an example of the loss of control that digital platforms can sometimes engender in their human 'users' as digital LMS processes invoke learner uncertainty and even bewilderment. Submitting work is no longer a direct, embodied transaction between from student to lecturer, such as handing over the hard copy of an essay (Selwyn, 2016). Instead, the LMS stubbornly intervenes between student and lecturer while it reshapes the requirements, norms and routines embedded in work submission.

8.2.3 Discussion

LMS studies have highlighted the need to train students to develop self-regulatory learning habits in relation to their engagement with the LMS (e.g., Bradley, 2021) and have cited the loss of professional self-worth lecturers experience when students are perceived as more technically proficient than them (e.g., Hanson, 2009). Here, however, the findings show that a *lack* of learner Blackboard skills are a critical concern to lecturers, reinforcing the findings of Aldosemani et al.'s (2018) Saudi Arabian study. The schism between the lecturers' expectations of their learners' Blackboard proficiency and reality was perhaps disappointing, and in combination with the lack of institutional induction, created arduous stewarding tasks.

The college and its imbrication of the LMS appeared somewhat coercive, as it codified and enshrined lecturers as trainers and learners as digital subjects. Lecturers were tacitly conditioned and positioned as responsible to orient others to the platform to achieve the 'desired outcomes' (Swerzenski, 2021, p. 56) of digital literacy and competence. Blackboard reproduced specific social relations: while students were constructed in ways that imply particular relational constraints (Blackboard neophytes), lecturers were additionally granted tacit duties laden with institutional and epistemological authority and framed as technical stewards responsible for steering learners along appropriate LMS paths (Jones & Bennett, 2017). As they negotiated their own identity positioning, a layering of social (lecturer's ability to guide students) and material agency (Blackboard's power to produce student progress) imbricated to achieve the socio-material routine of digital training (Leonardi, 2013).

The complex materiality of Blackboard became accented when juxtaposed with the English language ability of students. Menus, submission boxes and folders, may be viewed as anything but apolitical since 'they are instead spaces produced in part by material conditions that determine who gets to participate' (Payne, 2005, p. 491). Thus, the linguistic, textual and symbolic materialities

regulate who may enact them and to what extent, suggesting that learner subject positions and the complexities of the learners' relations with LMS may be inscribed there and made visible to lecturers as calls to socio-material action (Payne, 2005). As the platform's interface neglects the 'multitudinous references' borne out of learners' social and cultural frames of reference (Davis & Hardy, 2003, para 7) it emerges not only as an ***unyielding intermediary*** but also one of control. This perhaps usurps some authority from the lecturers themselves, demanding the accommodation of its material pathways and logic, and the moral order to assist learners, in the mangle of LMS training (Pickering, 1995; Symon & Pritchard, 2015). Lecturer intentions may be subverted unexpectedly by the complexity of Blackboard itself and students' fragile enactment of it (Drumm, 2020).

Yet, whilst lecturers are positioned outside their pedagogical roles, their human agency is married with the acceptance of cues and normative assumptions driving their identities as trainers. Ultimately, to refrain from wholly undertaking this practice would exert an unfavourable socio-material influence on learners (human agency to learn and navigate Blackboard's features), counter top-down implementation policy, and obstruct the ongoing imbrication of the LMS. The performances while stewarding, albeit sometimes reluctantly, are done to preserve student-faculty relationships and maintain a robust professional identity. The LMS as a digital interference is further described in the final sub-storyline.

8.3 Immobilising practices

In its second manifestation as a digital interference, Blackboard contributed to the immobilisation of practices. The interruptions to practice brought about by breakdowns and anomalies rendered visible the digital doings of LMS use at the institution (Alirezabeigi et al., 2020). Technical issues with the LMS were often cited by the lecturers, and when the LMS (and its tools) did not appear to respond to the educator in the desired and predicted manner, this resulted in its

'materiality… exposing its otherwise taken for granted status' (Drumm, 2020, p. 32). Lecturers were positioned relationally by technology's capability to act outside human control and immobilise the execution of their teaching practice: '*I just feel powerless when something goes wrong with Blackboard in the middle of a class.'* (Lecturer B)

8.3.1 Minor breakdowns

Minor breakdowns included losing connectivity during an online class and slow response times, for example, while more serious issues occurred during the end of semester final exams. The socio-material performance of the professional lecturer may be subverted by these ephemeral material entities enmeshed in the mangle of LMS practice, such as the Internet connection and available bandwidth (Pischetola et al., 2021).

When there are sudden issues with the bandwidth it makes it difficult to operate the learning management system and wastes a lot of time. (Lecturer H)

These interferences emerged as temporal, abrupt and vexatious highlighting how, 'the contours of material agency are never decisively known in advance' (Pickering, 1995, p. 14) and instigate what is termed here as the ***materialised stalling*** of planned practices. This metaphor invokes both the *occurrence* of delays, and the *material* forces external to the human actor's control that precipitate them.

Similarly, the tools embedded in the LMS (e.g., Respondus Lockdown Browser, the Grade Centre) may frustrate and disrupt the lecturers' self-efficacy beliefs, evincing a form of 'bite back' (Hayward, 2003, p. 48). This material resistance to the human intention of smooth pedagogical practice creates a barrier in the desired ideational positioning of the composed lecturer. As Lecturer A recounted, technical issues can occur spontaneously, leaving the lecturer in a state of bewilderment and usurping their control as material anomalies are

impossible to accommodate. This results in the lecturer being ousted from the imbrication of people and non-human, and positioned by technology as an **expelled social actor:**

I had the students updating Lockdown Browser, and one student was waiting for a long time to download it which delayed the test. Also, yesterday I got kicked off Blackboard - I don't know why, for no reason, and sometimes students get kicked off. Then, there are other connection problems and when you're in an online class that's a huge issue. It makes me feel like I am not in control. (Lecturer A)

The ***materialised stalling*** by unpredictable disturbances prompted the lecturers to invoke a tacit relational positioning to dissociate themselves from the material constraints they encountered, adding a layer of complexity to their professional identity negotiations. This is indicative of alterity relations (Ihde, 1990), where Blackboard is positioned in narratives as a purposively distanced quasi-Other when it fails to comply with the human intention of enacting a social practice and takes on an autonomous agency of its own, as it is 'at times difficult to interpret, and behaves in ways which seem unpredictable' (Gourlay, 2021, p. 115). PCA was sympathetic to the disruptions that could occur, citing how technical issues may engender an ontological and socio-materially derived loss of lecturer function, intimating that this positioned the lecturers as **incapacitated instructors.**

Through the socio-material lens, we can discern how practices can be seen as involving an orchestration of entities – both the seen and unseen – that temporally contribute to making, complicating or preventing human embodied intentions possible. This enables us to move away from a siloed view of the LMS which would perhaps consider practices as conducted on a singular device at a specific time by a single individual and help us envision the messy, multifaceted and mosaic nature of imbrications. Accordingly, within these complex imbrications, dances of agency between the LMS and the lecturers'

intentions may result in ‘mangling effects’ (Symon & Whiting, 2019, p. 670) which are temporarily, unresolvable:

There are sometimes blackouts with Blackboard or there's been an issue where certain functionalities have been removed, so you can’t access things in it, and when that happens it's like the lecturer’s hands are tied and their legs have been cut off. They can’t do anything. (PCA)

8.3.2 A major breakdown

During an in-person observation of Lecturer C invigilating in a lecture hall during the final exams, more significant and impactful challenges were witnessed, which rendered the administration of testing impossible for an extended duration, as described in the following vignette:

The students are seated, having undergone an ID check and received the examination rules. Lecturer C displays the password on the overhead screen and instructs the students to enter and begin the exam. One by one, students raise their hands and inform Lecturer C that they cannot access the exam on Blackboard. Lecturer C is visibly panicked, circulating amongst the desks, and calls on the second invigilator to alert the audit team and LMS specialist. The panic appears to spread, until, after some back and forth amongst various college employees, the lecturer is informed that the exam will be delayed.

Here, Lecturer C was relationally positioned by the breakdown of (at the time) unknowable material forces as they undermine the lecturer’s social agency in effectuating a smooth invigilation practice, again positioning them as **incapacitated.** In this socio-material mangle, Blackboard appeared to mediate between social actors and desired practices, planned physical actions and incipient panic, and in the moment, ambiguous material resistance occurred. The non-human agency revealed through material resistances had a salient effect beyond the digital interface to intervene and disrupt the embodied

practices and intentions of social actors. Similarly, for the CTL, such technical issues in the imbrication of people, examinations and digital overload, conspire to frame and re-position lecturers as their self-image is threatened and vulnerable to the perceptions of others:

When that happened with the exam it was a nightmare. I wonder what goes through the students' minds when they are just sitting there, all nervous and ready to go. It really makes us look like we don't know what we are doing. It's like the tech is controlling everything. (CTL)

The concern for the thoughts of the learners in this moment demonstrated the 'complex and dynamic equilibrium' (Beiijaard et al., 2004, p. 113) involved in one's professional self-image. To perform as a professional is a matter of being seen and legitimated by the self and by others. However, the breakdown threatens the CTL's self-evaluation through the anticipated positioning by Others, the learners, as an **incompetent.** This highlights how the LMS, and its related digital entities may act to define (examination) routines with technology brought sharply into focus as it both competes with, and subverts, the human intent to enact practice, performing the lecturer as not only incapacitated but potentially incompetent (Abbott, 2016).

This episode was also referenced by PCB, SSE and SSL in the interviews. PCB suggested that in the moment of this infrastructural breakdown, the unpredictable nature of the materiality of the LMS was obscured, with the accountability for system failures transposed upon seemingly innocent lecturers attempting to perform necessary tasks such as marking:

Recently, during the final exams, the system was overloaded and that was blamed on teachers trying to access Blackboard and do marking and administration or additional user activity, rather than just saying all the exams overloaded the system. It caused a 45-minute delay. (PCB)

Thus, the positioning of the lecturers as **disruptive Others** was perhaps shaped by the leadership's intention to conceal the constraints of Blackboard (and its network) at such a pivotal point in the academic calendar. These silent and invisible breakdowns demonstrate how 'concrete practices that are not exclusively organized by and around human actors,' (Alirezabeigi et al., 2020, p. 194) may be mediated by the LMS and constrain particular ways of performing the professional lecturer. For the lecturers, the 'blame game' (Lecturer I) was nothing new: for example, in a previous semester students were found to have circumvented Lockdown Browser (by configuring a virtual machine) and bizarrely the lecturers invigilating were held to account. The concerned lecturers remain silent in these instances, deferring to those more powerful in the hierarchy.

8.3.3 Discussion

While on one hand, in the techno-academic milieu the LMS produces different forms of possibilities and affordances, contrarily, it extends across locations simultaneously (Jones, 2014) and exerts the power to interfere. For the college, it's functioning is so inextricably dependent on the imbrications of Blackboard, servers and internet connections (Alirezabeigi et al., 2020), that these material forces may both govern and halt practices from the micro lecture hall context to institutional-wide events (Alirezabeigi et al., 2020; Nworie & Haughton, 2008). For lecturers, relying on the LMS as it is sedimented in practice and interned to their familiar routines (e.g., online teaching) it becomes more and more an extension of who they are professionally and how they perform their practice.

Digital interruptions and breakdowns reveal what is 'knitting people and things together' (Adams & Thompson, 2011, p. 743). In the research context, Blackboard has been weaved together with people and plays its part in a usually durable infrastructure whose 'digital significance' perhaps often goes unnoticed until issues occur (Leonardi, 2010). ***Materialised stalling*** resulting in minor and critical interferences may have a significant impact. Lockdown

Browser should facilitate a sense of academic integrity by gatekeeping examinees as it is designed to create a ‘walled garden’ that erects an impenetrable barrier between student and web pages (Miron & Ravid, 2015, p. 371). Yet, it may also intervene to forestall the very process it seeks to manage during unpredicted updates. This is not to transpose anthropomorphic abilities to the platform, but rather to highlight how the material may commonly and predictably accommodate human intentions, but may also spontaneously resist them (Pickering, 1995). Rather, as non-human agency is *temporally emergent* in contextualised practice, the social actors are unable to determine in advance when resistance occurs (Pickering, 1995) and can spontaneously become expelled from a previously stable imbrication.

Furthermore, during these temporally arising disruptions, lecturer agency may be displaced by material effects, reducing their function and removing their control. The LMS interference has the potential to cast the lecturer in a negative light, such as symbolising unpreparedness and tacitly repositioning them which may damage the lecturer's reputation among their students. In this case, the material agency competes with and subverts the human intent to perform practice while disrupting the lecturer’s desire to display their professional competence. Accordingly, the more lecturers become enmeshed with Blackboard and its reliance on external forces, the more vulnerable they are to its breakdowns, and how it may respond unexpectedly to thwart their intentions (Adam & Thompson, 2011). The social effects of major breakdowns, such as the exam incident explicated above, may be far reaching: the intention of leaders to conceal a digital breakdown resulted in a forced, hostile Other positioning.

When diverse agents including leaders, lecturers, students and LMS imbricate to form the integrated organisational routine of conducting exams, all elements need to function interdependently (Leonardi, 2011). The bite back (Hayward, 2003, p. 48) is the collective result of the imbrication of Blackboard with server overload at a critical juncture, similar to that reported in Alsadoon’s (2021)

recent study. However, in the present inquiry, these material actions and limitations were purposefully concealed, as lecturers were blamed in an act of top-down misplaced attribution, in the effort to save institutional face. Notably, this allows us to observe what Pischetola et al. (2021, p. 392) cite as ‘the trials of strength’ inherent in socio-material relationships, not only due to technology’s material, temporal effects, but also as they are infused with the robust power plays of social Others: the organisation and its higher-level stakeholders. This storyline, and those proceeding, will now be revisited in the concluding chapter.

Chapter 9: Conclusion

9.1 Introduction

In this closing chapter, I reflect on the study's originality, outline the theoretical contribution of the thesis and provide a final summary response to the research question. I then evaluate the study by discussing its limitations and suggest some avenues for future research.

9.2 Originality

The discourses of instrumentalism and essentialism in the literature, and the commercial opportunities presented by LMS platforms appear to have rallied an uncritical allegiance to their deployment at the expense of educators' situated experiences (Convery, 2009). Whilst sparse, there are some notable LMS focused studies that attend to professional and academic identities (e.g., Abbott, 2016; Gregory & Lodge, 2015; Geertshuis & Liu, 2020; Liu & Geertshuis, 2019), yet they elide a consideration of the materiality that influences lecturer professional selves. Thus, a critical gap in the literature was discerned, leading to this focused inquiry into an LMS, which not only attends to discursive resources, but also foregrounds the socio-material conditions which produce professional identities (Brown, 2019).

With the transition to remote working in pandemic times, LMS use was both mandated by the institution and pragmatically unavoidable for lecturers in this UAE college. The UAE context is underexplored in relation to this area of study, yet as highlighted in the earlier chapters, offers a unique cultural milieu and governance style that raised interesting questions about lecturers' ongoing professional identity negotiations. Adopting an ethno-case study approach with a novel theoretical framework, the findings are believed to be the first to reveal how identities are relationally negotiated in the socio-material imbrications of lecturers, specialists, leaders, policies, LMS, third-party resources and

educational materials. Additionally, the research extends on the growing body of scholarship questioning the assumption that EdTech platforms are merely neutral mediators (e.g., Pischetola et al., 2021; Swervenski, 2021), but in this case by zooming in on a *specific* instantiation: Blackboard. Highlighting how this platform is anything but 'a sphere free of ambiguities, contradictions, and ambivalences' (Schraube, 2009, p. 297), Blackboard was shown to both constrain and afford potentials for action at the nexus of discursive, performative and material forces (Hekman, 2010; Leonardi, 2011). These forces gave rise to the multiplicity of original subject positions interpreted here. Lastly, rather than echoing previous research and emphasising *teaching* praxis, the study demonstrates how lecturers also negotiate and enact Blackboard during administrative, technical and private facets of their occupational lives.

9.3 Theoretical contribution

A frequent criticism of *sociomateriality* is that as researchers privilege the material this leads to a reductive view of the human psyche, which is obviate in its challenges for identity scholars (Korsgaard, 2011). A socio-material lens which positions the LMS neither as completely deterministic of lecturer action nor lecturer action as entirely unconstrained permits a delicate balancing (Symon & Whiting, 2019). In this study, the marrying of positioning theory with the 'weaker' socio-material metaphors of imbrication (Leonardi, 2011) and the mangle of practice (Pickering, 1995) attended to both social and material factors, while recognising the purely humanist character of intentionality. In Chapter 3, I presented an adapted version of the positioning triad, which I mobilised in my analysis. This model perhaps offers other researchers a tentative sketch of how theoretical lenses may be aggregated to respond to the calls for identity studies to move beyond the socio-cultural (Martin, 2019).

9.3.1 New terms

To further explicate my interpretations of the data, I set forth some original terms. Perhaps the most significant was **obstructed affordances**. As a corollary of the shift in authority not only to a team leader, as a sole proprietor, but to the course shell, and, by extension, the platform which hosts it (Swerzenski, 2021) were **obstructed affordances**. To recap, obstructed affordances are characterised as distinct from constraints since they were perceived by lecturers as 'potentials for action' (Van Slyke & Belanger, 2020, p. 5) despite their exclusion from leveraging them. Whilst these were salient in cross-listed course design specific to the research site, it is conceivable that the term may be useful to socio-material researchers, perhaps in other circumstances where team-based occupational tasks ultimately result in a leader exerting power over the workgroup to fashion a platform and its digital content. It may be interesting to understand then, how institutional policies may be imbricated with platform rules to obstruct affordances to other categories of educator, such as teaching assistants or adjunct lecturers, especially against the threat of the growing 'gig academy' (Martínez Guillem & Briziarelli, 2020, p. 357).

A summary of the other phrases is provided below in Table 9.1., with the definitions for each. Whilst these terms are specific to this data set, it is conceivable that they too may have broader application. For example, educators working with other platforms may be confronted with similar administrative noise in their downtime, or lecturers working in highly standardised environments with replicated, multiple enrolment courses may question how their professional selves are reproduced to learners through differing forms of self-presentation by proxy.

Term	Meaning
Administrative noise	The figurative, sonic notifications and metaphorical, implicit responsibilities which call one to action
Digital entrapment	A phenomenon characterised by lecturer sensing that they have no option but to engage with the LMS outside work
Performative legacy	Digital recordings, as socio-material productions, which remain *somewhere* in the digital space, for an unstipulated duration
Socio-material self-rendering	The social intention to project the self is achieved through lecturer manipulation of the LMS course shell
Inherited disorder	Pre-packaged course design which is incongruous with an individual lecturers' pedagogical beliefs
Self-presentation by proxy	A phenomenon where Others' course arrangements and materials are unconsciously attributed (by learners) to the non-author
Unyielding intermediary	The capacity for the LMS to territorialise the lecture hall through training needs
Materialised stalling	Delays to planned practices due to material factors such as bandwidth

Table 9.1. New terms developed from the analysis.

9.4 Revisiting the research question

In this section, I provide a summary response to the research question:

How are lecturer professional identities negotiated in the socio-material storylines of learning management system use?

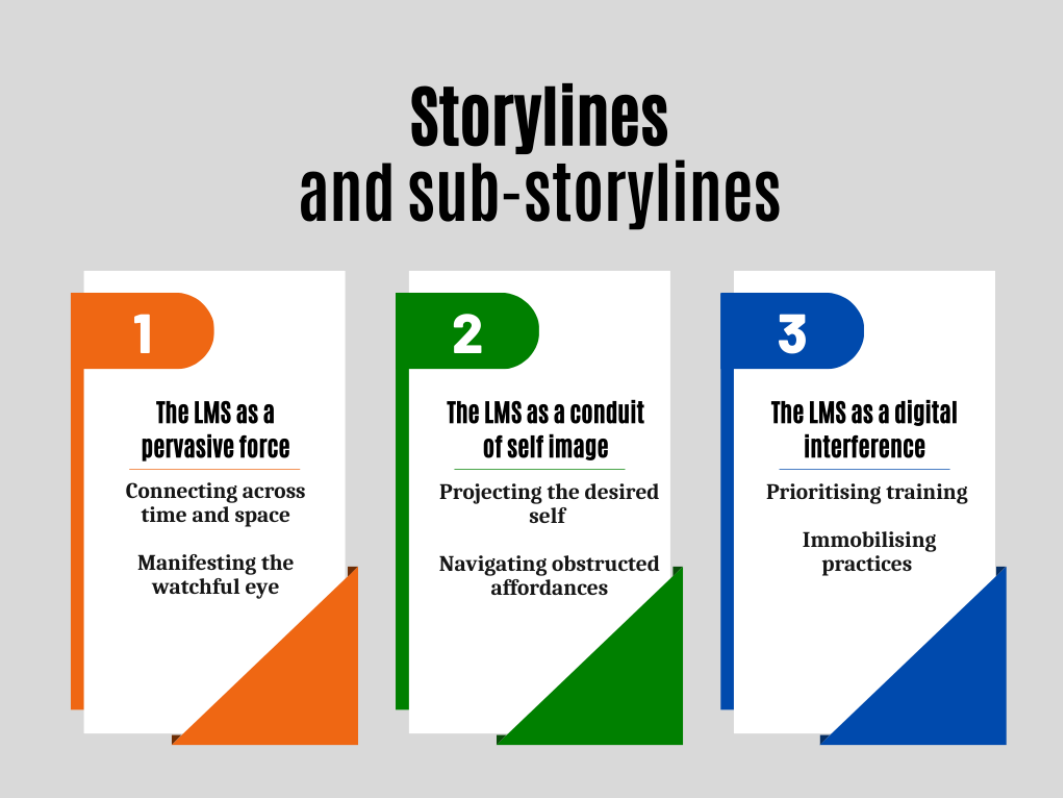

Figure 9.1. Overview of the storylines.

9.5 Summary and concluding discussion

As shown in Figure 9.1., the findings yielded three key and variant storylines: the LMS as a pervasive force, as a conduit of self-image and as a digital interference. These storylines emanated from the transition from optional, maverick LMS adoption to the corporate, mandated approach (Bigum & Rowan, 2010), resultant to the pandemic and evolving institutional policy. This produced a salient pre-positioning of lecturers, interpreted here as *desired* malleable Blackboard apprentices who were expected to align their professional selves with the LMS as it was imbricated in the college and became a landmarked technology. Furthermore, the configuration of cross-listed courses had powerful regulatory effects on lecturer practice which reshaped the rights and duties of those enrolled. This permitted Blackboard to participate in the intensification of power relations and the reification of leaders' objectives (Johannessen et al.,

2012). Against this backdrop, the findings traced how power, materiality, discourse and agency were implicated in lecturer professional positioning. In this context at least, identity positionings extend far beyond being a mere 'user' and vacillate between a myriad of tensions, albeit with some opportunities for empowering identity work available. It follows then that the overarching storyline of the LMS is not a straightforward tale of uniformly positive influences or pernicious repercussions for professional identities (Selwyn et al., 2017).

In Chapter 6, as a pervasive force, the LMS permeated through the organisational fabric to intervene in the lecturers' personal time, shifting boundaries and embedding tacit expectations of uncompensated academic labour. These consequences produced lecturers as compliant acceptors, obsessive workaholics and more positively, as responsive administrators. Lecturers may be thus subject to a professional dilemma and participate in a dance of agency: to complete additional Blackboard work outside of the college without any additional remuneration or face professional precarity (Selwyn et al., 2017). This perhaps leaves little choice but to align their duties and professional identities with the normative expectations of engaging with the LMS as it appears adept at converting some work into 'casual digital labour' (Scholz, 2013, p. 3) and digitally entrapping its users. Moreover, both now and in the future, there may be difficulty for the lecturer in emotionally disengaging from the LMS leash, perhaps leading to heightened anxiety, stress and even burnout for some. In consonance with digital technologies more generally, the pervasive force of the LMS appears complicit in the intensification of lecturer work (Selwyn et al., 2017) and compels them to project professional selves that conform both with what it, as a platform, and the institution expect (Scholz, 2013).

In the mangle of monitoring, the agency of leaders is enmeshed with the material agency of Blackboard to record, monitor and make visible lecturer practice, and this renewed socio-material authority was largely challenged and resisted in the lecturers' identity work (Symon & Pritchard, 2015). This invoked

the subject positions of dispossessed creator, tracked amateur, insignificant player and target of judgement. In consonance with Lewis and Holloway (2018), most faculty members intimated that when leaders concentrate on discrete forms of LMS data monitoring this is inherently precarious, especially when such data are permitted to override their professional expertise, experience and judgement. However, as the participants in this study did not provide any reports of insidious or misguided LMS surveillance by managers, the findings are more indicative of what has been termed ‘passive monitoring’ (Selwyn et al., 2017, p. 396) whereby recorded data is stored as a matter of routine operations, yet less frequently scrutinised. This suggests that the imagined or anticipated potential for behavioural visibility to cast lecturers in an unfavourable light is sufficient in its affective capacity to disrupt professional identities (Leonardi & Treem, 2020). Nevertheless, it may also bear an effective dimension, producing certain behaviours and prompting pre-emptive actions (such as turning off cameras or changing course settings), as lecturers are compelled to perform according to how the materiality of data could *possibly* go on to define them socially (Castañeda & Selwyn, 2018; Williamson et al., 2020).

In Chapter 7, the LMS was enrolled as a conduit of self-image, permitting lecturers to project the desired self through the affordances of personalised course curation. This permitted several robust identity positions including the autonomous purveyor, caring owner and humanised creator to be realised through thoughtful social-material self-renderings using texts, artefacts and images. On the other hand, the obstructed affordances arising through cross-listed courses and the positioning of the CTL as a gatekeeper had serious implications for the lecturers as they navigated inherited disorder and were compelled to enact Other-created artefacts. Thus, lecturers negotiated tensions as perceived ambassadors to courses and content to which they could not draw alignment, resulting in the constrained subject positions of the inferior educator and carrier of anxiety. However, some lecturers would counter this self-presentation by proxy by invoking the apologist and voice of reason positions to

reclaim how their professionalism was perceived by others. These findings demonstrate how together, institutions and LMSs may be complicit in the de-skilling of educators and lend credence to the notion that digital teaching materials are neither neutral nor inert but participate in the identity work of lecturers (Carvalho & Yeoman, 2021). Furthermore, it raises the issue of how LMS integration in HE may not be wholly inclusive or empowering for lecturers (Selwyn, 2010). In cross-listed courses there is a remarkable power imbalance where lecturers and material creators bring their own particular pedagogical intentions, yet their remits of agency do not coincide in determining how the LMS and its constituent parts are fashioned (Jones, 2019; Selwyn, 2010). Overall, this storyline suggests that there is emancipatory value in acknowledging faculty's desire and willingness to engage in creative, thoughtful course design, rather than risking the marginalisation of professional identities in the ongoing 'narrowing of curriculum and practice' (Facer & Selwyn, 2021, p. 4) that we witness through EdTech use more generally and in contexts further afield.

Lastly, in Chapter 8, the LMS presented itself as a digital interference and an unyielding intermediary, demanding that lecturers temporarily prioritise stewarding learners as they were confronted with its obduracy. As students were not provided any systemic institutional support, the proactive agent in this sub-storyline accommodates the LMS to purposefully steer learners' trajectories. For others, this duty might be fulfilled with more reticence, as with the reluctant technical sage. The embedded cultural vagaries and constraints of navigating an unfamiliar interface combined with some learners' emergent linguistic skills may evoke a more emotive and understanding subject position, as with the empathetic guide. Additionally, Blackboard and its related, imbricated entities could produce unanticipated constraints, whether minor or more significant, which immobilise routines. As a landmarked technology, the college and lecturers' Blackboard practices depend so inevitably on the stabilised imbrication, that when this is disrupted by temporally emergent

material forces (Pickering, 1995), lecturers may be produced as expelled social actors, incapacitated instructors and even tacitly and relationally positioned as incompetent. Even more nocuous is when lecturers are positioned as disruptive Others in an act of misplaced attribution to perhaps save organisational face.

While the LMS has often been discussed as if it were a synecdoche - the same one thing to every user and the sum of its parts (Dron, 2022), this is a misplaced assumption. Such an assumption would not only downplay the variant perspectives of social actors, but also elide the salience of what and who form the socio-material imbrications of LMS practices. Blackboard was found to be an ambivalent presence in the work and professional identities of lecturers: whilst at times it may present as unyielding and obstinate, at other junctures it may foster a sense of empowerment and proactivity. It would seem that lecturers are not wholly in charge of their subject positioning, but rather imbrications give rise to new contextualised discourses and emergent socio-material agencies which write new narratives of lecturer identities.

This thesis extends on identity work in the organisational literature (e.g., Symon & Whiting, 2019) by demonstrating how material agency may be ‘captured by’ (Pickering, 1995) or, alternatively, resist enrolment into subject positioning. It would therefore be remiss to exclusively label the LMS as a pejorative or constructive material force. Rather, in avoiding such binaries which inevitably underplay the complexities of being a lecturer in the digital academy, it is more pertinent to view these tensions and opportunities as multiple, variable and fragmented across a specific cohort, just like the identity positions evinced here. Thus, it appears in the imbrications of social and material, resistance and accommodation are inevitable processes that lecturers attend to, largely in response to their continued dedication to the student trajectory. In the mangle of practice, ideational subject positions can ‘go awry or adrift’ (Butler, 1997, p. iii) as they are relationally mediated by technologies, repositioned by others and discursively produced in reflexive accounts.

Blackboard is a sedimented institutional reality, and in the words of Selwyn (2017, p. 403) perhaps it is time to start 'propagating thoughtful and sustained conversations within professional, policy and academic circles' regarding the realities of lecturers' LMS work. Conversations which move away from essentialist (Blackboard has independent educational value) or instrumentalist (Blackboard is a mere tool) tenets may acknowledge the complex, situated mangling of LMS and educators. These discussions might cover transparent monitoring processes, embedding ways to permit lecturers ways to 'switch off,' formal LMS inductions for students and collaborative course design teams. While a completely open dialogue is perhaps untenable given the institutional hierarchy, if leaders recognise that the LMS is an unfinished variant of localised practice embedded within a broader picture of people, institution and other entities (Enriquez, 2009) it may go some way to identifying ways to reinforce lecturer professional identities.

9.5.1 Beyond the research context

Abstracted from these nuanced storylines, implementation strategies commonly frame the LMS as a decontextualised object with a single narrative and a generic 'user', rather than as part of a complex socio-material imbrication. Yet in the broader domain, lecturers' professional identities are likely to be negotiated in multiple ways through their situated and contextualised experiences, varied positionings as educators and their relationships with the materiality of LMSs, rather than solely through top-down reform policies. When mandated LMS use is accompanied by increased bureaucracy, pedagogical and administrative possibilities are likely to be constrained, with professional judgement and agency to enact the LMS facing obstruction (Teräs et al., 2022). As these constraints inevitably incite resistance, identities in the wider domain might be marginalised beyond widely reported 'facilitators' to more nuanced, reductive and dehumanising positions. This may contribute to the eradication of

the expert lecturer as their professionalism is stripped away, recasting them as assistants in service to the platform and the institutional discourse which undergirds its sedimentation (Selwyn & Facer, 2021). Conversely, and more optimistically, lecturers may be recognised as agentic individuals, with differing professional identities, and invited to determine how the theoretical and pragmatic conditions of LMSs might be effectively accommodated in their occupational duties. This approach may foster a sense of empowerment which stabilises dances of agency, transcends the common trope of the EdTech 'user,' frees lecturers from 'technological hegemony' (Convery, 2009, p. 38) and humanises their professional selves.

9.6 Addressing limitations

In the wider milieu, Blackboard and other LMSs are contingently ordered across different courses and institutions. Therefore, while universities and colleges might implement the same version, this is invariably done in heterogeneous patterns (Enriquez, 2009): through divergent policies, local training interventions, the promotion of specific tools and course organisation frameworks, for example. Correspondingly, and characteristic of most qualitative research, this focused ethno-case study did not seek to present broadly generalisable findings beyond the immediate research site (Walsham, 2006). A key objective was to give extended voice to a relatively limited cohort in a bounded context to achieve theoretical saturation (Bryman, 2008) and further our academic understanding of lecturer professional identities vis-à-vis LMS utilisation. While it has been suggested that relying on retrospective accounts in interviews may be limiting, Pickering (1995) helpfully counters this by stating that 'accounts pose no problem for real-time analysis of practice – they should themselves be seen as part and parcel of the mangling process....' (p. 53). In addition, the observations and visual elicitations added more robustness.

While identity researchers often opt to present individual cases in biographical and narrative form, it was deemed more appropriate to provide a thematic account of the lecturers' collective experiences, partly in respect of their privacy. Additionally, it aided the balancing of the human and the material in the analysis. It is important to note that the interpreted subject positions are not intended to signify a typology. Rather, they reflect a more nuanced, micro account which depicts how the LMS is understood and perceived across storylines by different participants in different ways. It would be remiss to reduce lecturers to a mere type, implying that they embody fixed, rather than fluid, characteristics that evolve through experience and practice (Poole, 2020). Thus, the positions identified here are likely just a glimpse into a much larger storyline, which is inevitably restricted by participant access and the scope of the inquiry.

Whilst Blackboard is a discreet example of the many contemporary technologies that influence lecturers' professional lives (Brady & O'Reilly, 2020) given the proliferation of digital spaces in HE, it is conceivable that the findings may offer edifying insights, perhaps informing educators' future Blackboard use and providing transparency for stakeholders in similar contexts regarding the realities of Blackboard uptake. A further limitation arises from the temporary relevance of findings related to digital platforms due to their continually evolving nature[26] (Bryman, 2008). Whilst this is an inherent (and perhaps inescapable) issue regarding EdTech research, this study has nevertheless revealed significant socio-material phenomena and new terms which may transcend the current time and space. In closing, I offer some potential directions for future research.

[26] It is also worth reiterating that this study relates to the older version of Blackboard.

9.7 Suggested avenues for future research

As it was beyond this study's scope to interview participants more than once, to corroborate and extend on these findings, future research could further exploit the critical capacity of positioning theory and socio-material approaches, utilising a longitudinal approach to investigate how subject positioning may shift over time, perhaps as new policies and contexts of use arise through the development of LMS platforms.

While this study presents a contextualised, socio-material snapshot in time of lecturers LMS based-practices, it did not draw on the significant aspect of embodiment. The inherent links between identity and body have been the subject of much seminal research (e.g., Butler, 1997). Researchers oriented to this sensibility might conduct observations in lecture halls and combine these with first person accounts to consider embodied presence/behaviours during LMS enactment. This might reveal how positions are not only discursively invoked, but also produced through interactions with screens and LMS interfaces, gestures, body position, gaze and proxemics, for example (McVee et al., 2021). Davies and Harré, (1990, p. 59) allude to a connection between positioning theory and embodiment, suggesting that 'a particular person is compounded out of continued embodiment and also of spatio-temporal continuity and shared interpretations of the subject positions and storylines within them.' This might warrant a promising extension to the theoretical framework advanced in this study. We might look ask questions such as 'How are lecturers' physical behaviours routinised while using Blackboard and how is this related to subject positioning?' or 'How are bodily performances implicated in emergent LMS storylines of face-to-face teaching?'

Furthermore, changing tack, one might turn to alternative platforms. At the time of writing the world is abuzz with talk of artificial intelligence (AI) wizards with much discussion surrounding Chat Generative Pre-trained Transformer (Chat GPT). Chat GPT has the ability to analyse and parse information while

emulating distinctly human capacities including knowledge production (Yoder-Wise, 2023). Some scholars suggest that the release of AI algorithmic writing technologies signals a transition away from HE as we have traditionally known it (Tate et al., 2022), with others cautioning against subscribing to the familiar determinist trope (Rudolph et al., 2023).

This foregrounds an exciting time for educator professional identity scholarship as the debate widens – is AI a precursor to the trumpet of doom or unrestrained technologists' optimism? Taking a critical view, we might ask how lecturers are being positioned both discursively through emergent institutional policies and the broader AI debate. We might adopt socio-material theorising to probe how lecturers perceive the affordances and constraints of AI platforms and how they will resist or accommodate what can only be described as the inevitable automated production of student text. What kind of work does AI produced text do in the production of lecturer identities? Is it marginalising their expertise, demanding creative professional responses or doing something else? What kind of AI and human mangles can we envision both now and in the future?

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Appendix A: Lecturer interview schedule

Interview Schedule – Lecturer

General Learning Management System/Blackboard Learn questions

1. What does the term 'learning management system' mean to you? If so, how would explain it to someone who wasn't familiar with the term?
2. What tasks/duties do you use Blackboard Learn for? (administrative, teaching, etc.)
3. Which features of Blackboard Learn do you generally use most often?
4. Can you please describe how you would use Blackboard Learn over a typical working day?
5. Has the way in which you used the Blackboard Learn changed since COVID-19? If, so please can you tell me about that?
6. How much time do you spend using Blackboard Learn outside of your working hours? What do you use it for?
7. How does the college encourage you to use Blackboard Learn?

Course Set-Up

1. Are you working in cross-listed courses or, individual child courses, or a mixture, this semester?

Relationships and communication through Blackboard Learn

1. How you use Blackboard Learn to communicate with others, if at all?
2. Why do you choose this medium?

Shared Blackboard Learn courses

1. Have you ever shared a course with a co-teacher?
2. Can you tell me about your experience of this?
3. What are some of the advantages and disadvantages of shared courses?
2. Could you please explain how much, if any, autonomy you have in making changes to the course shell?
3. Can you talk me through the advantages/disadvantages of that?
4. Which format do you prefer and why?

Visual Elicitation – Sharing the Blackboard Learn course interface

Now, I would like to talk more about your individual course. Please can you share the screen/show me your course(s)?
Let's talk about the features and tools you use here.
(discuss various features and tools including assessments, Collaborate Ultra, course folders, discussion boards, course organisation topics/weeks etc.)

Professionalism

1. To what extent does Blackboard support/constrain you in your teaching/administrative practice?
2. Could you perform your role without a learning management system? Why or why not?
3. Do you feel that you make full use of the tools Blackboard Learn has to offer? Why or why not?
4. How, if at all, would you like to increase your knowledge/use of Blackboard Learn?
5. To what extent does using Blackboard Learn align with your professional identity?

Appendix B: Specialist/manager interview schedule

Interview Schedule – Specialists/Manager

Please note: As this is will follow a semi-structured format, the questions here are for guidance. Thank you.

Background information

Do you have any formal qualifications related to teaching with technology, the Learning Management System etc.?

A. Professional role

1. Could you describe what your role involves?

B. General Blackboard Learn questions

1. Could you explain in your own words what Blackboard Learn is?
2. What are the benefits to the institution in having this learning management system?
3. What are the benefits to the faculty in having this learning management system?

C. Faculty and Blackboard Learn

2. How do you think the college encourages faculty to use Blackboard Learn?
3. To what extent are you satisfied with faculty's uptake of Blackboard Learn? Does this vary between academic departments or any other factors?
4. Has the way in which faculty used Blackboard Learn changed since COVID-19? If so, please can you tell me about that?
5. How much time, if any, do you anticipate that faculty spend using Blackboard Learn outside of their working hours?

D. Providing support

1. What are the common issues or challenges that faculty face when using Blackboard Learn?
2. How can faculty seek support?
3. Can you describe a typical scenario when a faculty member requests support from the initiation of a request to how it is resolved?

E. Providing training

1. What Blackboard training, if any, do you provide to faculty members?
2. Can you talk about the objectives/aims of these courses?
3. How are the courses generally received by faculty?
4. How satisfied are you with the learning achieved by faculty?
5. Is there any particular training missing, that could be introduced?

F. Cross-listed/Individual CRN courses

1. Can you talk me through the rationales for using cross-listed/individual child courses in different programmes?
2. What are the benefits and drawbacks of *a. cross-listed* and b. *individual child* courses?
3. In your opinion, how much flexibility should individual faculty members have in the design and content of Blackboard Learn course shells?

Appendix C: Ethical approval letter

Educational Research | Lancaster University

17th November 2021

Dear Natalie-Jane

Thank you for submitting your ethics application and additional information for **The Learning Management System and Lecturer Professional Identities**. The information you provided has been reviewed and I can confirm that approval has been granted for this project.

As Principal Investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress) to the Research Ethics Officer (Dr Richard Budd or Dr Natasa Lackovic).
- submitting details of proposed substantive amendments to the protocol to **Dr Janja Komljenovic** for approval.

Please do not hesitate to contact your supervisor if you require further information about this.

Yours sincerely

Kathryn Doherty
Programme Co-ordinator
PhD in Higher Education: Research, Evaluation and Enhancement

Head of Department
Professor Paul Ashwin, BA, MSc, PhD
Professors
Carolyn Jackson, BSc, PhD
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Appendix D: Virtual ‘go along’ example

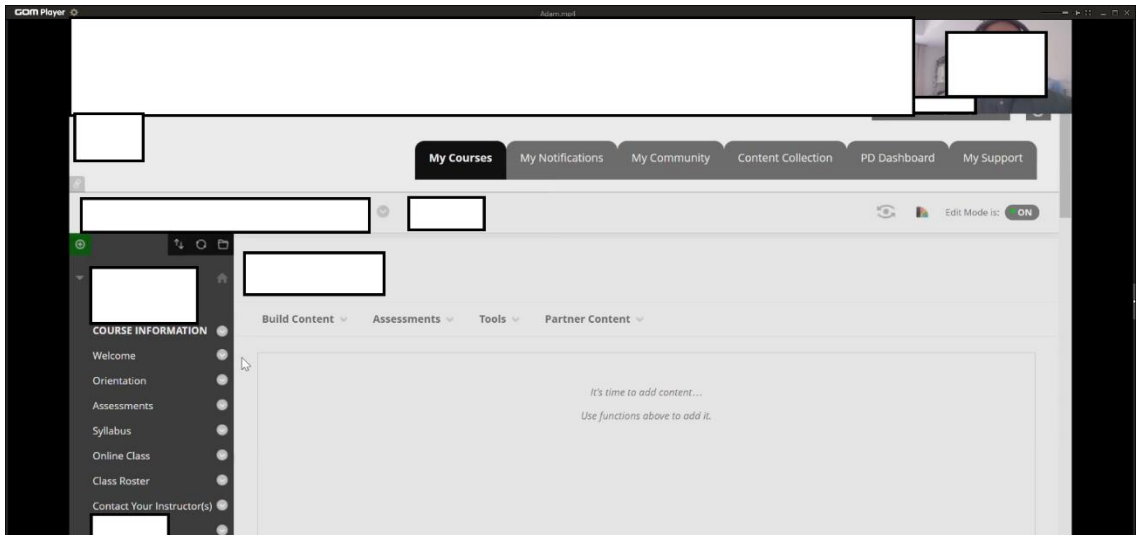
Anonymised image of the Grade Centre shared by participant.

I met with the participant in a busy grading period, following the midterm exams. The lecturer agreed to me joining them through the virtual classroom to observe their grading practices. The lecturer also shared the above images with me. The observation lasted about 20 minutes, and during that time the participant offered some thoughtful reflections on this practice.

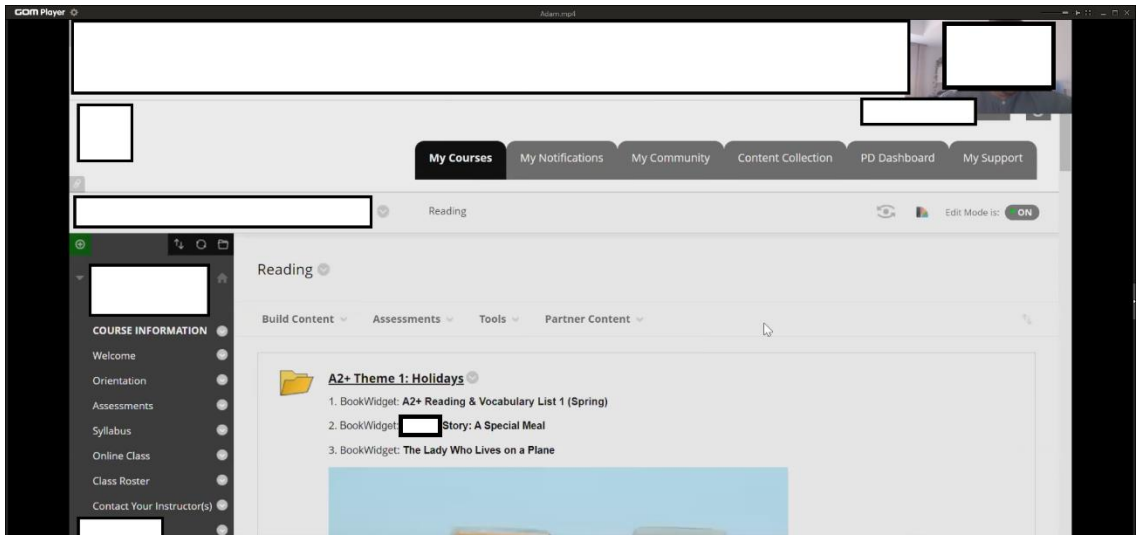
Virtual ‘Go Along’ (Grading in the Grade Centre) observation notes	
Does the materiality of the LMS and its associated artefacts perform any mediation in administrative and pedagogical practices? How?	Grading in the Grade Centre is described by the participant as clunky, time consuming and complex. The Grade Centre not only calls them to action through colours and symbols but then appears to entrap in them time consuming procedures. In this way, I think administrative practices are an extent governed by the lecturer decisively electing to bring the laptop to their home and their accommodation of the material resistance arising in the interplay been lecturer and the platform – the lecturer concedes that this would be a minor inconvenience if the class sizes were not so great. However, with large classes and the hybrid mode, the lecturer is toggling between rubrics, repeatedly saving work and then returning to the full menu, back to their smart view and the back to individual attempts. I note how the lack of search function heightens their frustration. I consider how this LMS practice, in particular serves to extend tasks, not only across spatial boundaries, but also across time.

What, if any, conflicts between this materiality and the participants occur?	There appears to be conflict between the human intention to complete work, such as grading, and the obduracy encountered. Perhaps as an effect of the materiality of the LMS being used for multiple enrolments, it appears to respond in its own way. The lecturer describes several constraints – loading rubrics in different tabs, difficulty scrolling and time lapses in moving from the centre to the individual student submission. Consider – colours, symbols and signs – what do these do? Tension between human intent and material through responses to semiotics Grade Centre – central part of all lecturers' practice Makes student work visible but also makes lecturers' work pressured and open to others
How does positioning occur/become shaped through these interactions?	Difficulty in achieving intentions/subverted by materiality of LMS – what does this work do in the positioning – hindering? Think about ideational positioning vs relational positioning Practice is messy – because of LMS?

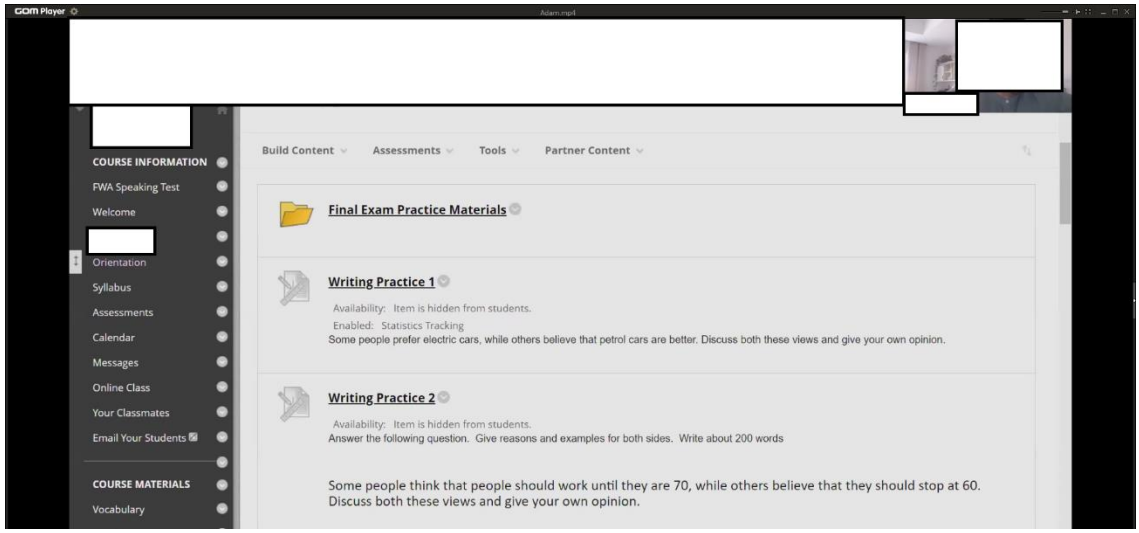
Appendix E: Screencast example



Anonymised screenshot. Building up course content.



Anonymised screenshot. Content items organised in folders.



Anonymised screenshot. Adaptive release and statistics tracking.

Transcript excerpt:

Hi, okay so here I am, making you the screencast as promised. I am going to talk about my Blackboard courses as we discussed. All that this is all from our old website that we used to use before Blackboard. Like pretty much everything that's in this section here, except for the independent study. Most of this was what a lot of this was at one time or another, on the website, we built and then, it just got ported over from one place to another and reformatted and people made Book Widgets and rewrote things. It's been a work in progress and pretty proud of it, like the team did a great job.

Alright, so here's my section, this is the Mr [redacted] section, and I've got writing practices and exam prep materials and problem solution stuff. Probably not the best example of stuff that I've done, so let me go back to here. ***We've got all kinds of stuff so boom!*** *So, this this was when we were developing this, this was a very bespoke class and you can see, on the sidebar here. We were doing this week by week we were making this up on the fly and individual activities for individual days. Let me go back and you can see, I was working [in a type B course] with [redacted] and* ***we'd***

split each week into my work and her work, and we were communicating a lot. *I think she was doing the writing, but maybe I was as this was like two years or three years ago. And we were uploading* ***tons of stuff*** *here* ***to get students up to speed.*** *And then* ***managing the learner so that you can see, see here there's reading cycle to reading cycle and then this item is hidden from the students, so we turn these things on and off as we needed them****. This is a nice way of managing the learner and directing them. It can be bit of a mess as you can see. A lot of it we were making it up as we go along. However, using all these tools that we have, making the* ***Blackboard pages more appealing with videos and images etc.,*** *that's what we are and should be doing and that can only be a good thing.*

Here you see I am using ***usage tracking and the statistics reports.*** *I think that should be a default one. I think it's a wonderful feature for determining whether the learners are actually accessing the content or not. And* ***you can then generate a statistics report on the entire class and it will tell you which students opened this content and how often they did it, and this is a brilliant measurement for just gauging did your students' access the content****. And it forestalls a lot of arguments and criticism that's unfounded, just like a student could say I didn't have access to this and then you pull up the report and say, well, yes, you did and here's the people that did access and you're one of the people who did not. And that just stops that kind of nonsense cold.*

Screencast observation (Type A/B) notes	
Does the materiality of the LMS and its associated artefacts perform any mediation in administrative and pedagogical practices? How?	The participant suggests that the materiality of the LMS can be leveraged to shape and steer learners. This might indicate how the individual and shared affordances which grant lecturers greater autonomy and agency are captured to reinforce the professional intentions of the lecturer. 'This is a nice way of managing the learner and directing them' and 'this item is hidden from the students, so we turn these things on and off as we needed them' demonstrate how the LMS' agency to ally with the lecturers in the managing course content. The hide function and organisation of content mediates in the practices of lecturers to control student access to content. 'I think it's a wonderful feature for determining whether the learners are actually accessing the content or not' – the statistical tracking tool is cited preventing/disallowing students to exercise the agency to dispute, as the LMS appears to be privileged in its capacity to override student excuses. Interesting tension – LMS blocks access to avoid overwhelming vs. performing as an authority to trace access through statistical tracking. Images perform a certain kind of reality to observers – however as pre-selected these are also imbued with the selector's cultural frames of references. Interesting to consider what work the images do.
What, if any, conflicts between this materiality and the participants occur?	'It can be bit of a mess as you can see' – the untidiness associated with disorder is a relational affect not only of the lecturer's embarrassment but also of the enduring presence of materials over time – powerful in their presence to relationally contribute to the positioning of lecturers
How does positioning occur/become shaped through these interactions?	Blackboard and the type B course afford a means to both shape and support relationships between co-teachers on the course. The socio-material bridging between human and material is presented in the spatial domain where work can be shared, contributed to and observed. This began my thinking in the area of how the LMS could be considered a conduit – participating in reifying and or subverting desired ideational positioning

Other notes	lecturer is proud of their courses – extension of professionalism? who one can be and perform and present as themselves LMS seems to be a replacement and extension of formerly used websites represents a new digital domain and also a substitution for previously analogue methods of distributing materials – but work is this doing?